University of California
San Francisco

UCSF

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August 15, 2014

Re: Draft Environmental Impact Report for the UCSF 2014 Long Range Development Plan
State Clearinghouse Number 2013092047

This is the Draft Environmental Impact Report (Draft EIR) for the proposed UCSF 2014 Long Range Development Plan (LRDP). Pursuant to the California Environmental Quality Act (CEQA), the Draft EIR analyzes the potential impacts of campus growth under the 2014 LRDP at a program level, and analyzes the potential impacts of a number of specific 2014 LRDP development proposals at a project level where greater project detail is available.

The Draft EIR is available for public review for 60 days from **August 15, 2014 to October 14, 2014 at 5 p.m.** To provide written feedback on the Draft EIR, please write to Ms. Wong at UCSF Campus Planning, Box 0286, San Francisco, CA 94143-0286, or email her at EIR@planning.ucsf.edu. Please include your full name and address in written correspondence. Please note that all public comments made in writing or in oral testimony at the public hearing are part of the public record. **All comments must be submitted during the 60-day public review period from August 15, 2014 to October 14, 2014 at 5 p.m.**

UCSF will also hold a public hearing regarding the Draft EIR on Monday, September 22, 2014 at 7:00 p.m. at the UCSF Millberry Union Conference Center, 500 Parnassus Avenue. The purpose of this hearing is to solicit public comments on the adequacy and accuracy of the information presented in the Draft EIR.

Comments received at the public hearing or in writing will be responded to in a Comments and Responses document to be prepared subsequent to the close of the comment period. After preparation of the Comments and Responses document, a draft of the Final EIR will be prepared for certification by the University of California Regents.

To obtain a paper or CD copy of the Draft EIR or to view reference materials, email UCSF Environmental Coordinator Diane Wong at EIR@planning.ucsf.edu or call (415) 502-5952. Copies of the Draft EIR will also be available for viewing at the UCSF Kalmanovitz Library at 530 Parnassus Avenue, the UCSF Mission Bay Library at 1675 Owens Street, and the following public library branches: San Francisco Main Branch, 100 Larkin Street; Mission Branch, 300 Bartlett Street; Mission Bay Branch, 960 4th Street; Park Branch, 1833 Page Street; Sunset Branch, 1305 18th Avenue; and the Western Addition Branch, 1550 Scott Street.

Thank you for your interest in UCSF's 2014 LRDP and this EIR. For more information, please visit our website at www.ucsf.edu/lrdp.

Sincerely,
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DRAFT

AUGUST 2014

UCSF 2014 LONG RANGE DEVELOPMENT PLAN

Environmental Impact Report

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CHAPTER 1
Introduction

This Draft Environmental Impact Report (EIR) assesses the potentially significant environmental effects of adoption and implementation of the proposed University of California, San Francisco (UC San Francisco or UCSF) 2014 Long Range Development Plan (2014 LRDP or LRDP). UCSF has prepared the 2014 LRDP as a comprehensive physical land use plan and policy document to guide the physical development of the campus to accommodate increases in enrollment and academic and research activities at UCSF to meet its projected educational, clinical and research demand through the year 2035, the LRDP horizon. The LRDP plans for projected campus growth of approximately 2.39 million gross square feet[1] (gsf) by 2035. Phase 2 of the Medical Center at Mission Bay is not included in the total anticipated development under the LRDP because the 793,500 gsf Phase 2 Medical Center is anticipated to be constructed after the LRDP horizon year of 2035; however, the impacts associated with its construction and operation are evaluated in this EIR in order to provide a conservative analysis of future development of the entire Mission Bay campus site. Therefore, the projected campus growth analyzed in the EIR is approximately 3.18 million gsf.

As required by the California Environmental Quality Act (CEQA), this EIR: (1) assesses the potentially significant environmental effects that could result from implementation of the proposed 2014 LRDP as well as the potentially significant cumulative impacts of the 2014 LRDP; (2) identifies feasible means of avoiding or substantially lessening significant adverse impacts; and (3) evaluates a range of reasonable alternatives to the proposed 2014 LRDP, including the required No Project Alternative. The University of California (University or UC) is the "lead agency" for the 2014 LRDP and for the proposals evaluated in this Draft EIR. In addition to analyzing the potential impacts of campus growth under the 2014 LRDP at a program level under CEQA, this EIR analyzes under CEQA a number of specific LRDP development proposals at a project level.

The Board of Regents of the University of California (the Regents) has the responsibility for adopting the 2014 LRDP and approving specific proposals under the LRDP. When certified, this EIR will serve as the environmental document for the 2014 LRDP. The 2014 LRDP and LRDP EIR will replace the 1996 LRDP, as amended, and the 1996 EIR and related CEQA documents as a basis for decisions on future campus growth and development.

[1] Gross square feet (gsf), as used for UC facilities, is the sum of all floor areas, finished and unfinished, on all floors of an enclosed structure. It excludes spaces such as attics without flooring, mezzanines, exterior courts, and balconies.

1.1 Purpose of the EIR

The University has prepared this EIR on the 2014 LRDP for the following purposes:

- To inform the general public, the local community, and responsible, trustee and federal public agencies of the nature of the 2014 LRDP, its potentially significant environmental effects, feasible measures to mitigate those effects, as well as reasonable and feasible alternatives;
- To enable the University to consider the environmental consequences of adopting and implementing the 2014 LRDP and approving those specific projects identified in the LRDP;
- To serve as a reference document and first tier document for subsequent review of individual projects undertaken to implement the 2014 LRDP;
- To enable responsible agencies to consider the environmental consequences of those 2014 LRDP proposals for which they have a role in approving or issuing permits; and
- To satisfy CEQA requirements.

As described in CEQA and the CEQA Guidelines, public agencies cannot approve projects that may cause a significant environmental impact without adopting mitigation measures or alternatives to avoid or substantially lessen those significant environmental effects, where feasible. In discharging this duty, a public agency has an obligation to balance the project's significant effects on the environment with its benefits, including economic, social, technological, legal and other benefits. This EIR is an informational document, the purpose of which is to identify the potentially significant environmental effects of implementing the 2014 LRDP, and to indicate the manner in which those significant effects can be avoided or significantly lessened. The EIR also identifies any significant and unavoidable adverse impacts that cannot be mitigated to a less-than-significant level. Reasonable and feasible alternatives to the 2014 LRDP are identified that would eliminate any significant adverse environmental effects or reduce the impacts to a less-than-significant level.

The University (or the Regents or its designee) is required to consider the information in the EIR, along with any other relevant information, in making its decision to approve the 2014 LRDP and each specific proposed project that may be brought forth for approval in the future to implement the 2014 LRDP. Although the EIR does not determine the ultimate decision that will be made regarding implementing the LRDP or any individual LRDP project, CEQA requires the Regents or its designee to consider the information in the EIR and make findings regarding each significant effect identified in the EIR.

If determined to comply with CEQA, the Regents will certify the Final EIR prior to adopting the proposed 2014 LRDP.

1.2 Overview of the 2014 LRDP

UCSF is one of 10 campuses in the University of California system. It is the only UC campus devoted exclusively to health sciences, with professional degree programs in dentistry, medicine, nursing and pharmacy, as well as interdisciplinary graduate programs and numerous postdoctoral programs. Unlike other UC campuses, UCSF has no undergraduate students, but instead has a small population of graduate and professional students[2] (4,760 in 2013: 3,080 enrolled in degree programs and 1,680 clinical residents). The UCSF clinical enterprise consists of the UCSF Health System – UCSF Medical Center (the hospitals plus all clinics and physician practices operated by the medical center and the School of Medicine) and UCSF Benioff Children's Hospital – and the UCSF Dental Center.

UCSF is an urban institution with campus sites throughout the City of San Francisco and some locations beyond the city limits, comprising a total of approximately 201 acres, 61 of which make up the Mount Sutro Open Space Reserve at the Parnassus Heights campus site. UCSF occupies more than 8.04 million gsf of building space (excluding structured parking) in both owned and leased buildings. In addition to the three primary campus sites of Parnassus Heights, Mission Bay and Mount Zion, UCSF owns buildings at Mission Center (1855 Folsom Street), Laurel Heights (3333 California Street) and 654 Minnesota Street, which are predominantly offices; animal care and research facilities at Hunters Point (830 and 831 Palou Street); a materiel management facility at Oyster Point (616 Forbes Boulevard in South San Francisco); and the Buchanan Dental Center (100 Buchanan Street). UCSF also leases more than a million square feet of space for a variety of purposes at numerous locations in San Francisco.

Each University of California campus is required to periodically prepare a LRDP to guide campus growth and future physical development. The 2014 LRDP is a comprehensive physical land use plan and policy document that articulates a long-term development strategy for achieving the academic, clinical and research missions of UCSF through the year 2035. It contains objectives to guide decisions for future facilities to meet needs over the next 20 years, projects the quantities and uses of new building space needed during this time frame, and sets forth planning principles that will apply to future activities undertaken to implement the LRDP. Future individual construction projects will be evaluated for general conformity with the LRDP and considered for approval following a community process and any additional environmental analysis and public review that may be required under CEQA. A project is generally found to be in conformance with the LRDP if the proposed land use is consistent with established land use designations and complies with the LRDP objectives. The 2014 LRDP also includes *Community Planning Principles*, which were produced in collaboration with the UCSF Community Advisory Group that will aid future planning by providing a framework for addressing neighborhood concerns that may arise regarding UCSF development under the LRDP.

[2] Professional students are those attending the UCSF Schools of Dentistry, Medicine, Nursing and Pharmacy in pursuit of state licenses to practice dentistry, medicine, etc.; they earn professional degrees (DDS, MD, etc.). Graduate students are those students seeking Certificate, Master or PhD degrees, who are pursuing a research track in basic, translational, clinical, social and population sciences, either at the four schools or in other UCSF programs.

The 2014 LRDP serves as an opportunity for UCSF to assess its current status and needs and establish goals for the future. The 2014 LRDP proposes land use designations, program square footage and population growth through the LRDP planning horizon of 2035 and will be presented to the Regents for their review and consideration. Land use designations are described in the LRDP using functional zones, which provide guidance for where certain types of uses are best located based on desired land use adjacencies and other geographic considerations. The LRDP includes six functional zone categories: research, clinical, support, housing, open space and parking. Instruction space is distributed throughout the research, clinical, and support zones. Functional zone maps are provided for the three main campus sites (Parnassus Heights, Mission Bay and Mount Zion) to guide the location of future capital construction and infrastructure development.

The 1996 LRDP focused on the acquisition of and planning for a major new site, which led to the development of the Mission Bay campus site. UCSF has directed most of its capital resources toward the Mission Bay campus site in the intervening years. The 2014 LRDP focuses on investment in existing facilities and older sites, along with further development at the Mission Bay campus site.

The 2014 LRDP proposes to develop up to an additional 2.39 million gsf, for a total of 11.56 million gsf, in owned and leased buildings across all of UCSF's sites through 2035, not including Phase 2 of the Medical Center at Mission Bay. However, as noted above, for the purposes of the EIR analysis, the construction and operation of Phase 2 of the Medical Center at Mission Bay are analyzed in this EIR. Therefore, the projected campus growth analyzed in the EIR is approximately 3.18 million gsf.

Although a major portion of the additional space needs would be accommodated in new buildings on campus sites or in new off-site leases, some of the need would be met through a combination of better utilization of existing vacant or underutilized space, consolidating functions or leases and converting existing space to other uses to meet changing priorities.

The proposed 2014 LRDP is further described in Chapter 3, *Project Description*, and is available online at www.ucsf.edu/lrdp.

1.3 Project Background

UCSF's first LRDP was completed in 1964. It called for the expansion of the Parnassus Heights campus site, the only site owned by UCSF at the time, through the use of eminent domain. In response to neighborhood groups who opposed UCSF's expansion and organized an effort to halt construction of the School of Dentistry and Long Hospital, the Regents adopted the 1976 Regents' Resolution, which established permanent boundaries for the campus site, and imposed a "space ceiling" on further growth within these boundaries, among other conditions. UCSF's 1976 LRDP contained policies to limit campus growth at this campus site, but allowed those and several other buildings to be completed. The 1982 LRDP limited use of the Parnassus Heights campus site to primarily academic and clinical functions and called for the relocation of most campus-wide administrative functions to other sites that would be subsequently purchased or leased.

Decentralization resulted in operational challenges and higher operating costs. Consequently, the 1996 LRDP emphasized the consolidation of smaller but widely dispersed sites to fewer locations. In addition, the 1996 LRDP called for the decompression of space at the Parnassus Heights campus site by demolishing buildings that were seismically vulnerable or obsolete and by converting offices in the 'Avenues' back to residential use. The 1996 LRDP further emphasized the expansion of space at existing sites for meritorious and new programs by renovating buildings or constructing new ones. The principal proposal of the 1996 LRDP was to acquire land to develop a major new campus site to fulfill a growing need for research space, which ultimately led to the selection of the Mission Bay campus site.

To a large degree, the 2014 LRDP is an extension of the principles of the 1996 LRDP, in that UCSF would continue to work towards compliance with the space ceiling at the Parnassus Heights campus site, expand the Mission Bay campus site and consolidate UCSF facilities to fewer locations. While the 1996 LRDP focused on the acquisition of, and planning for, a major new site, where UCSF has directed most of its capital resources in the intervening years, the 2014 LRDP emphasizes investment in existing facilities and older sites, along with further development at the Mission Bay campus site. The 2014 LRDP is also driven by the need to comply with the requirements of the *Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983(Alquist Seismic Safety Act)* and subsequent amendments, the UC *Seismic Safety Policy*, the UC *Sustainable Practices Policy* and the *1976 Regents Resolution* regarding the Parnassus Heights campus site space ceiling, as well as numerous other state and local policies, codes and plans, to the extent applicable. With regard to the *1976 Regents Resolution*, UCSF proposes to ask the Regents to update the resolution to recognize that many of its recommendations have been successfully implemented, and to modify the way space and population are monitored at Parnassus Heights, and to rename the *1976 Regents' Resolution* to the *Regents' Resolution Regarding the Parnassus Heights Campus Site*.

Also, with increased constraints on operating budgets, the 2014 LRDP strives to address UCSF's goal to improve operational efficiency through better utilization and consolidation of, and investment in, existing facilities. 2014 LRDP development proposed at the Mission Bay campus site promotes these objectives, while also providing opportunity for growth.

Preparation of the LRDP has been a multi-year process which began in 2010. First, background data were collected and reviewed by a campus LRDP Oversight Committee and campus site-specific subcommittees comprised of a broad spectrum of campus representatives. The LRDP subcommittees assessed future needs associated with instruction, clinical and research uses, and made recommendations as to space needs. In 2012, UCSF developed physical options capable of accommodating the space needs. A preferred plan for each campus site was identified in 2013, and presentations were then made to the San Francisco Planning Commission and the San Francisco Commission on Community Investment and Infrastructure to apprise them of the LRDP.

In addition to the guidance of the LRDP Oversight Committee and its topic-specific subcommittees, the 2014 LRDP was prepared with input from the UCSF Academic Senate, senior leadership, Faculty Councils of the Schools, the Graduate Division, a work group focusing on administrative space and many other groups and individuals. The UCSF Foundation Real Estate Committee and UC Office of the President also advised on the LRDP. Reaching beyond the campus, community

feedback was provided by UCSF's Community Advisory Group (CAG), and from the public at large throughout the planning process, in numerous meetings and workshops held at UCSF's main campus sites.

A Draft LRDP was published on May 23, 2014. In addition, on June 16th and 18th, 2014, community meetings were held at the Mission Bay and Parnassus Heights campus sites, respectively, to provide information about the LRDP and to receive public feedback.

1.4 Program EIR and Project EIR

The 2014 LRDP is a land use plan to guide the physical development of the UCSF campus through 2035. It is not an implementation plan; that is, its adoption does not constitute a commitment to any specific project, construction schedule or funding priority. Rather, the proposed 2014 LRDP describes a program of potential development for UCSF through 2035. An LRDP is defined by statute (Public Resources Code Section 21080.09) as a "physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education."

A program EIR generally establishes a framework for tiered or project-level environmental documents that are prepared in accordance with the overall program (CEQA Guidelines Section 15168(a)). Chapter 5 of this EIR provides a program-level analysis of the proposed 2014 LRDP, evaluates the effects of maximum growth that could occur throughout the UCSF campus under the proposed LRDP through 2035 and identifies the LRDP-level mitigation measures to reduce the potential significant effects of the plan. The LRDP EIR will be used by the Regents to evaluate the environmental implications of adopting the proposed 2014 LRDP. As a program EIR, the LRDP EIR sets standards of significance for environmental impacts and evaluates whether construction and operation activities of UCSF under the LRDP through 2035 would exceed these standards of significance.

CEQA Guidelines Section 15168 governs use of a program EIR with later activities. It states that if the effects of proposed activities were examined in the previous program EIR, if no new or substantially more severe significant effects would occur, and if no new mitigation measures would be required, then a program EIR has adequately analyzed the later activities for CEQA purposes (i.e., the later activities are within the "scope" of the project covered by the program EIR, and no new environmental document or further review under CEQA would be required.)

CEQA Guidelines Section 15168(c) thus provides:

> (c) Use with Later Activities. Subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared.
>
> (1) If a later activity would have effects that were not examined in the program EIR, a new Initial Study would need to be prepared leading to either an EIR or a Negative Declaration.

(2) If the agency finds that pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required.

(3) An agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into subsequent actions in the program.

(4) Where the subsequent activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR.

(5) A program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

Once certified, this EIR will also be used to tier subsequent environmental analyses for future UCSF development projects (CEQA Guidelines Section 15152). Each UCSF development proposal would then be reviewed in light of the LRDP EIR to determine the appropriate level of additional environmental review, if any, needed before approval and implementation of the particular proposal. After approval of the LRDP, each discretionary development proposal undertaken during the planning horizon of the 2014 LRDP will be subject to individual approval by the University, in compliance with CEQA.

In addition to analyzing the proposed 2014 LRDP at a program-level per CEQA Guidelines Section 15168 in Chapter 5, this EIR also analyzes a number of specific development proposals at a program-level or at a project-level per CEQA Guidelines Section 15161 in Chapters 6, 7, 8 and 9. The analysis of these development proposals at the project-level is intended to provide sufficient detail to permit project approval and implementation following certification of the EIR. The project-level analyses in Chapters 6 through 9 are tiered from the program-level analysis in Chapter 5 and all projects incorporate relevant LRDP Mitigation Measures into their project descriptions. The University anticipates seeking project approval for some of these projects in the near-term (within several years of EIR certification), while others will occur at a later date but are included because there is sufficient information about the proposals to conduct project-level analyses in this EIR. Approvals for these projects will be sought when funding becomes available and project implementation is logistically feasible.

Table 1-1 identifies those 2014 LRDP proposals that are analyzed in this EIR at a program level, and those LRDP proposals that are analyzed at a project-level sufficient to support approval by the Regents or its designee, when those projects are ready to be brought forth for approval. Those proposals receiving project-level analysis in this EIR are not expected to require further environmental review to support approval, so long as none of the conditions identified in CEQA Guidelines Section 15162(a) exist. Details regarding the 2014 LRDP and its proposals are described in Chapter 3 of this EIR.

TABLE 1-1
2014 LRDP PROPOSALS
PROGRAM AND PROJECT LEVEL ANALYSES

	Program-Level Analysis	Project-Level Analysis
2014 LRDP	• Campus-wide space growth • Campus-wide population growth • Land use plan – functional zones • Greenhouse Gas Reduction Strategy • Transportation Demand Management Measures • Update to the 1976 Regents' Resolution for Parnassus Heights	
2014 LRDP Proposals	• **LRDP -** Growth and/or change at each campus site resulting from LRDP proposals, including: • **New Construction** *Parnassus Heights:* - New Hospital Addition - Faculty housing at Fifth and Parnassus avenues - Faculty housing on Proctor site *Mission Bay:* - Additional research capacity on Blocks 16, 18A, 23A, 25B, 33 and 34 - Phase 2 Medical Center *Mount Zion:* - Clinical/research building *Mission Center:* - Office building and parking • **Open Space Proposals** *Mission Bay:* - Additional open space on Blocks 15,16, 18C and 23A *Mount Zion:* - Additional open space on main block • **Circulation, Transportation and Parking** *Parnassus Heights:* - Parnassus Avenue Streetscape Plan - Parking and loading Improvements *Mission Bay:* - Structured parking on Blocks 18B, 33/34, and 38 - Complete street network - Increase bicycle and motorcycle parking *Mount Zion:* - Additional parking in conjunction with new building on main block *Mission Center:* - Structured parking in conjunction with new building • **Utilities/Infrastructure Proposals** *Parnassus Heights:* - Diesel fuel storage tanks - Medical gas storage tanks - Retaining wall *Mission Bay:* - Central utility plant on Block 16	• **New Construction** *Mission Bay:* - Block 15 Housing - Cancer Outpatient Building • **Demolition Program** *Parnassus Heights:* - Surge - Woods - Medical Research 4 - Laboratory of Radiobiology - Environmental Health & Safety - Proctor - Koret Vision Research - Langley Porter Psychiatric Institute *Mount Zion:* - Hellman - Harold Brunn Institute - Dialysis Center - 2255 Post Street (or retrofit) • **Rehabilitation Program** *Parnassus Heights:* - UC Hall - Moffitt Hospital - Millberry Union Towers - Fifth Avenue houses conversion to faculty housing - Faculty Alumni House seismic retrofit *Mount Zion:* - Main Hospital - 2255 Post Street (or demolition) • **Open Space Proposals** *Parnassus Heights:* - Saunders Court renovation and pedestrian spine improvements - Mount Sutro Open Space Reserve – new trails • **Utilities/Infrastructure** *Parnassus Heights:* - Saunders Court renovation and pedestrian spine improvements *Mission Bay:* - Block P15 pump station upgrade

1.5 Environmental Review Process

1.5.1 Public and Agency Review

On September 24, 2013, a Notice of Preparation (NOP), including an Initial Study, was published for the 2014 LRDP EIR[3]. The 30-day public comment period was extended by two weeks and ended on November 12, 2013. A copy of the NOP/Initial Study is included in Appendix A.[4] A scoping meeting was held on October 28, 2013, at Millberry Union on the Parnassus Heights campus site, to accept public input on environmental topics to be analyzed in the EIR and approaches to the impact analyses. Written comments received on the NOP are included in Appendix B.

Pursuant to Section 15063 of the CEQA Guidelines, an Initial Study is a preliminary environmental analysis that may be used by the lead agency to focus an EIR on the environmental effects resulting from a proposed project that may be significant. The Initial Study prepared for the 2014 LRDP identified activities proposed under the LRDP that would clearly result in no impact or result in a less-than-significant impact under the CEQA significance criteria. No further analysis beyond that provided in the Initial Study is necessary for those activities.

The Initial Study also identified potential environmental effects that require detailed study in the EIR. As discussed in the Initial Study, these effects consist of less-than-significant impacts that were included in this EIR in order to provide a more comprehensive analysis; impacts for which further analysis is necessary or desirable before determinations about significance could be made; impacts that were potentially significant but may be reduced to less-than-significant levels with the adoption of mitigation measures; and impacts that may be significant and unavoidable.

Copies of the Draft EIR and Draft LRDP are available online for public review at ucsf.edu/lrdp. Paper copies of these documents are available for viewing at the following libraries:

UCSF Libraries:

- UCSF Kalmanovitz Library, 530 Parnassus Avenue
- UCSF Mission Bay Library, 1675 Owens Street

San Francisco Public Library:

- San Francisco Main Branch, 100 Larkin Street
- Mission Branch, 300 Bartlett Street
- Mission Bay Branch, 960 4th Street

[3] The scope of the LRDP, as described in the Initial Study, has changed to reflect the acquisition and development of Mission Bay Redevelopment Area Blocks 33 and 34 to the east of the UCSF Mission Bay campus site. Environmental review of development of Blocks 33 and 34 in accordance with the *Mission Bay Redevelopment Plan* was completed in the *Mission Bay Redevelopment Plan Subsequent EIR*, as subsequently amended. The 2014 LRDP EIR considers future development of Mission Bay Redevelopment Area Blocks 33 and 34 to assess the current adequacy of that environmental review in light of potential UCSF uses of those properties, as well as to update the environmental analysis for potential UCSF uses on the site.

[4] At the time that the NOP was issued, UCSF envisioned that the LRDP EIR would also provide project-level environmental review of specific proposals that were anticipated to be considered for approval concurrent with the LRDP or in the near term after LRDP approval. The projects covered in the LRDP have subsequently been refined to reflect the most recent list.

- Park Branch, 1833 Page Street
- Sunset Branch, 1305 18th Avenue
- Western Addition Branch, 1550 Scott Street

1.5.2 Project Approvals

Following the close of the public and agency comment period on this Draft EIR (October 14, 2014), the University will prepare responses to all written comments and to oral comments received at the public hearing that raise CEQA-related environmental issues regarding the 2014 LRDP and the analysis in this EIR. The responses will be published in the Final EIR. The Final EIR will be considered by the Regents in a public meeting and certified if it is determined to be in compliance with CEQA. Upon certification of the EIR, the Regents or its designee will consider whether to adopt the proposed 2014 LRDP, as well as approve any individual projects that are brought forth at that time.

1.6 Uses of the LRDP EIR

The Regents will use this EIR to evaluate the environmental implications of adopting the 2014 LRDP. The Regents and/or its designee, with authority delegated by the Regents, also will use the EIR to evaluate the environmental implications of approving specific LRDP proposals brought forth for approval. If the LRDP EIR is certified and the 2014 LRDP is adopted, this Program EIR will be used to tier or focus environmental review of subsequent UCSF development projects.

This EIR is intended to be used for the following actions, and will serve the following purposes:

1) The EIR provides the Regents with information upon which to evaluate the environmental consequences of the 2014 LRDP, including environmental impacts and mitigation measures and alternatives that could avoid some of those impacts, and will be used as the CEQA document for the Regents' consideration of the 2014 LRDP and the adoption of required findings and other actions by the Regents in connection with their consideration and possible adoption of the LRDP.

2) The EIR will also be utilized in connection with the consideration by the Regents of specific projects pursuant to the LRDP. Pursuant to CEQA Guidelines Section 15168, some projects may be approved as within the scope of this EIR without further environmental review and other projects will be approved after a second-tier CEQA document is prepared if not within the scope of this EIR.

3) Consistent with the use of this EIR for specific projects pursuant to CEQA Guidelines Section 15168, this EIR will also provide information to responsible agencies with permitting or approval authority over projects that may be implemented under the 2014 LRDP.

1.7 Other Agency Approvals

There are no responsible agencies that have approval authority over the proposed 2014 LRDP. In addition, there are no responsible agencies that have approval authority over the LRDP proposals, with the exception of certain activities that are proposed to occur within the public right-of-way.

For example, the Parnassus Avenue Streetscape Plan contains various proposals that would occur within the public right-of-way and that would require approval by the San Francisco Municipal Transportation Agency (MTA) and encroachment permits from the San Francisco Department of Public Works (DPW). In addition, the LRDP identifies a cushioning action related to the renovation and reuse of UC Hall that would involve traffic-calming measures at the intersection of Fifth Avenue and Kirkham Street. Such activities would also require review and approval by DPW and MTA.

1.8 Report Organization

Chapter 1, ***Introduction***, provides an introduction and overview of the 2014 LRDP and EIR, as well as the intended use of the EIR, including the review and certification process.

Chapter 2, ***Summary of Environmental Impacts and Mitigation Measures***, summarizes the environmental impacts that would result from implementation of the 2014 LRDP, lists proposed mitigation measures and indicates the level of significance of impacts after mitigation.

Chapter 3, ***Project Description***, provides a detailed description of the 2014 LRDP, including project objectives, projected growth and proposed physical development at UCSF campus sites.

Chapter 4, ***Regional Setting***, ***Regulatory Considerations***, ***Significance Standards and Analysis Methodology***, includes discussion of baseline conditions and presents the Significance Standards used in the EIR to assess the program-level environmental impacts of the 2014 LRDP per CEQA Guidelines Section 15168. Following this introductory material, the chapter is divided into 15 sections, one for each environmental topic considered in this EIR. Each section contains regional setting information about the environmental topic, as well as relevant background and regulatory material. The analysis methodology for each topic is also included in Chapter 4.

Chapter 5, ***2014 LRDP – Impacts and Mitigation Measures***, analyzes the campus-wide effects resulting from implementing the 2014 LRDP. This chapter first summarizes the three major components of the 2014 LRDP: Land Use (functional zones), Space Program (allocation of projected growth) and Daily Population. The 2014 LRDP, by assigning uses and a space program at specific campus sites, directs the growth and change that will occur during the lifetime of the LRDP. The major physical changes proposed under the 2014 LRDP would occur only at four campus sites: Parnassus Heights, Mission Bay, Mount Zion, and Mission Center.

The interrelated components of 2014 LRDP growth will be implemented, in part, by undertaking individual development "proposals" at each campus site. These proposals naturally group into four general categories - 1) demolition, 2) renovation and re-use of existing structures, 3) construction of new facilities, and 4) circulation, open space, and utilities/infrastructure proposals – that are convenient ways to organize and consider the physical actions that would occur with the implementation of the 2014 LRDP. Specific 2014 LRDP proposals are listed in Chapter 5 under these categories.

The environmental effects of the 2014 LRDP are discussed in terms of the overall effects of the plan. The analysis includes program-level 2014 LRDP mitigation measures that would reduce the magnitudes of most potentially significant impacts to less than significant and apply to all 2014 LRDP proposals, as applicable. As is done in Chapter 4, the environmental analysis of the LRDP is divided into 15 sections, one for each environmental topic considered in the EIR.

Chapters 6 through 9, 2014 LRDP Proposals – *Setting, Impacts and Mitigation Measures* by campus site: Impacts and mitigations of the 2014 LRDP proposals that are unique to the Parnassus Heights campus site are presented in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures*. Chapters 7 through 9 analyze, at a program-level or project-level per, the unique effects of LRDP proposals at the Mission Bay, Mount Zion, and Mission Center campus sites, respectively. Each of these four campus site chapters also is divided into 15 sections, one for each environmental topic. Each section may contain local site-specific setting information that is important to the understanding of the impacts that occur at that campus site. Chapters 6 through 9 include discussion of the potential effects of the 2014 LRDP manifested at specific campus sites, with mitigation measures provided, where necessary and feasible, to reduce these unique effects to a less-than-significant level. In addition, the impact analyses cross-reference the applicable general mitigation measures of the 2014 LRDP provided in Chapter 5 if such measures would reduce effects resulting from a specific proposal at a campus site.

Readers of the EIR who live or work near one of these four campus sites will likely be most interested in the effects that would occur at that particular campus site. The geographic focus of effects presented in Chapters 6 through 9 will assist readers to determine whether or not environmental effects resulting from implementation of the 2014 LRDP would occur in their neighborhood, near their home or work, or along their daily travel routes.

Chapter 10, ***CEQA Statutory Section****s*, includes discussions required by CEQA, including growth-inducing impacts, cumulative impacts, and a list of significant unavoidable impacts.

Chapter 11, ***Alternatives***, describes the alternatives to the 2014 LRDP.

Chapter 12, ***Report Preparation***, identifies the persons who prepared the EIR and those who were consulted during its preparation.

CHAPTER 2
Summary of Environmental Impacts and Mitigation Measures

2.1 Introduction

This EIR evaluates the potential for environmental impacts from the implementation of the UCSF 2014 LRDP. As detailed in section 1.8 *Report Organization*, Chapter 5 of this EIR provides a program-level analysis of the proposed 2014 LRDP, evaluates the effects of maximum growth that could occur throughout the UCSF campus sites under the proposed LRDP through the year 2035 and identifies the LRDP-level mitigation measures to reduce potentially significant effects of the LRDP. In addition to the program-level analysis of the proposed 2014 LRDP in Chapter 5, this EIR also analyzes a number of specific and foreseeable 2014 LRDP development proposals at a project-level per CEQA Guidelines Section 15161 in Chapters 6, 7, 8 and 9. These project-level analyses are intended to provide sufficient detail to permit approval and implementation of these proposals following certification of the EIR.

This summary highlights the major areas of importance in the environmental analysis for the proposed 2014 LRDP, as required by Section 15123 of the CEQA Guidelines. It provides a brief description of the 2014 LRDP, the project objectives, alternatives to the 2014 LRDP and areas of controversy known to the University. In addition, this chapter provides **Table 2-1**, summarizing: (1) the potential environmental impacts that would occur as the result of implementation of the 2014 LRDP; (2) the recommended mitigation measures that would avoid or reduce significant environmental impacts; and (3) the level of impact significance after mitigation measures are implemented.

The potential environmental impacts of 2014 LRDP proposals, and any necessary mitigation measures, at the Parnassus Heights (PH), Mission Bay (MB), Mount Zion (MZ) and Mission Center (MC) campus sites are listed in **Tables 2-2**, **2-3**, **2-4** and **2-5**, respectively.

2.2 Project Description

The 2014 LRDP is a comprehensive physical land use plan and policy document that articulates a long-term development strategy for achieving the academic, clinical and research missions of UCSF through the year 2035. It contains objectives to guide decisions for developing future facilities to meet UCSF's needs over the next 20 years and projects the quantities and uses of new building space needed during this time frame and sets forth planning principles formalizing

UCSF's commitment to communicate with neighbors regarding its space needs and potential future development.

The 2014 LRDP proposes land use designations, program square footage and population growth through the LRDP planning horizon of 2035 and will be presented to the Regents for their review and consideration. Land use designations are described in the LRDP using functional zones, which provide guidance for where certain types of uses are best located based on desired land use adjacencies and other geographic considerations.

The 2014 LRDP proposes to develop up to an additional 2.39 million gsf, for a total of 11.56 million gsf, in owned and leased buildings across all of UCSF's campus sites through 2035. For the purposes of the EIR analysis, total campus growth in 2035 assumes that the Phase 2 Medical Center at Mission Bay would be constructed during the LRDP horizon although the 2014 LRDP contemplates a later construction date. Thus, the total projected campus growth under the 2014 LRDP analyzed in the EIR is 3.18 million gsf.

Specifically, the 2014 LRDP proposes that major physical changes would occur only at four campus sites: Parnassus Heights, Mission Bay, Mount Zion and Mission Center. These changes entail: 1) at Parnassus Heights to demolish buildings to reduce existing building space, to renovate two existing buildings to make office and new housing space available, and by 2030, to decommission and reuse Moffitt Hospital and build a new addition to Long Hospital; 2) at Mount Zion to demolish existing buildings on the main block to make room for a new office and research building; 3) at Mission Bay, to construct new housing, office, research and clinical buildings, as well as infrastructure and, 4) at Mission Center, to construct a new office building and parking structure.

2.3 Project Objectives

The 2014 LRDP contains five main campus-wide objectives to guide UCSF's physical development:

1) Respond to the City and Community Context
2) Accommodate UCSF's Growth Through 2035
3) Ensure UCSF's Facilities are Seismically Safe
4) Promote Environmental Sustainability
5) Minimize Facility Costs

2.4 Impact Summary

Table 2-1, provides a complete list of all impacts and mitigation measures. Each impact lists applicable mitigation measures and the level of significance of the impact before and after the implementation of the mitigation measure(s).

2.5 Alternatives to the Proposed Project

The following alternatives were analyzed in detail in the EIR and compared to the proposed 2014 LRDP. The objective of the alternatives analysis is to determine whether an alternative would feasibly attain some or most of the project objectives, while avoiding or substantially lessening some of the significant effects of the proposed 2014 LRDP.

1) No Project—No Development
2) No Project—Development Under Existing LRDP
3) Reduced Program
4) No Demolition of Historical Resources

Detailed descriptions and an analysis of potential impacts of each alternative are presented in Chapter 11, *Alternatives*.

The No Project—No Development Alternative would avoid all environmental impacts of development under the proposed 2014 LRDP. However, the No Project—No Development Alternative would not meet any of the 2014 LRDP objectives.

If the environmentally superior alternative is the No Project Alternative, CEQA Guidelines Section 15126.6(e)(2) requires that the EIR also identify an environmentally superior alternative among the other alternatives. Other than the No Project Alternative, the No Project—Development Under Existing LRDP Alternative is the environmentally superior alternative, because it would reduce the significant and unavoidable impacts associated with the 2014 LRDP more than the other alternatives. Significant and unavoidable air quality and noise, as well as traffic impacts related to construction and operation of the UCSF campus sites would be reduced in magnitude, even if not necessarily reduced to less than significant levels.

2.6 Known Areas of Controversy

This EIR addresses issues associated with the 2014 LRDP that are known to UCSF or were raised by agencies or interested parties during the Notice of Preparation public and agency review period. These issues include:

- Traffic, parking, noise and construction effects at the Parnassus Heights campus site
- Compliance with the space ceiling at the Parnassus Heights campus site

TABLE 2-1
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures[1]	Level of Significance After Mitigation
Aesthetics			
AES-LRDP-1: Implementation of the 2014 LRDP would not have a substantial adverse effect on a scenic vista.	Less than Significant	None required	Less than Significant
AES-LRDP-2: Implementation of the 2014 LRDP would not degrade the existing visual character or quality of UCSF campus sites and surrounding area.	Less than Significant	None required	Less than Significant
AES-LRDP-3: Implementation of the 2014 LRDP could result in flood lighting during nighttime construction activities that would adversely affect nighttime views in the area.	Potentially Significant	**AES-LRDP-1:** UCSF shall require a condition in construction contracts that flood or area lighting for construction activities be placed and directed so as to avoid potential disturbances to adjacent residences or other uses.	Less than Significant
AES-LRDP-4: Implementation of the 2014 LRDP could create new sources of substantial light or glare that would adversely affect day or nighttime views in the area.	Potentially Significant	**AES-LRDP-2:** Minimize light and glare resulting from new buildings through the orientation of the building, use of landscaping materials and choice of primary facade materials. Design standards and guidelines to minimize light and glare shall be adopted for the new buildings, including: • Reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades. • Installation of illuminated building signage shall strive to be consistent with City Planning Code sign standards for illumination and/or UCSF design guidelines. • Exterior light fixtures shall be configured to emphasize close spacing and lower intensity light. Light fixtures shall use luminaries that do not direct the cone of light towards off-campus structures.	Less than Significant
AES-LRDP-5: Implementation of the 2014 LRDP could create street-level winds that could be hazardous to pedestrians in the area.	Potentially Significant	**AES-LRDP-3:** Proposed buildings that would exceed 100 feet in height shall be evaluated by a qualified wind consultant to determine the potential of the design to cause a wind hazard as defined in City Planning Code Section 148. If a hazard cannot be judged unlikely, the design shall be wind tested to verify compliance with the hazardous wind criterion of City Planning Code Section 148. Wind tunnel testing would provide site- and design-specific information pertaining to potential wind effects. Feasible means of eliminating or reducing wind hazards include modulating facades through architectural devices (e.g., articulation, variation of planes and building heights, etc.); incorporating building setbacks/terraces into building designs; and, landscaping in appropriate locations (e.g., using plantings to create wind screens). If preliminary wind testing indicates that the building design would increase pedestrian-level wind hazards, UCSF shall modify the proposed building or develop other measures to eliminate increases in hazardous pedestrian-level wind effects.	Less than Significant

[1] Mitigation measures apply to each subsequent development project at each campus site.

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Aesthetics (cont.)			
AES-LRDP-6: Implementation of the 2014 LRDP could substantially reduce sunlight or significantly increase shadows in public open space areas. (Less than Significant with Mitigation)	Potentially Significant	**AES-LRDP-4:** UCSF shall assure that final building designs would not increase shadow on Recreation and Park Department property between one hour after sunrise and one hour before sunset, in such a way that the use of the property would be adversely affected.	Less than Significant
Air Quality			
AIR-LRDP-1: Implementation of the 2014 LRDP would be consistent with the primary goals of the Bay Area Clean Air Plan (CAP) and would not fundamentally conflict with the CAP because the LRDP demonstrates reasonable efforts to implement control measures contained in the CAP.	Less than Significant	None required	Less than Significant
AIR-LRDP-2: The 2014 LRDP would provide sufficient buffer distances between sensitive land uses and those land uses associated with toxic air contaminants (TACs) such as freeways, high traffic roadways and stationary sources.	Less than Significant	None required	Less than Significant
AIR-LRDP-3: Implementation of the 2014 LRDP proposals would provide sufficient buffer distances between sensitive land uses and sources of odors.	Less than Significant	None required	Less than Significant
AIR-LRDP-4: Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during demolition and construction activities.	Potentially Significant	**AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions** The following BAAQMD Best Management Practices for particulate control will be required for all construction activities. These measures will reduce particulate emissions primarily during soil movement, grading and demolition activities but also during vehicle and equipment movement on unpaved project sites 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph.	Significant and Unavoidable

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Air Quality (cont.)			
AIR-LRDP-4 (cont.)		5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, § 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. 8. Post a publically visible sign with the telephone number and person to contact at UCSF regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's telephone number shall also be visible to ensure compliance with applicable regulations. **AIR-LRDP-2: Architectural Coatings** ROG emissions from the use of architectural coatings shall be reduced by implementing either or both of the following measures if total emissions of ROG exceed 54 pounds per day on average over the construction period. • Architectural coatings shall be applied over the course of 4 months or longer, in order to reduce daily ROG emissions to below the significance threshold. • A minimum of 67% of exterior building materials shall be prefinished to reduce ROG emissions. **AIR-LRDP-3: Off-Road Equipment Control Measures for NO_x** All off-road equipment greater than 25 hp and operating for more than 20 total hours over the duration of construction activities shall meet the following requirements that will not be fully implemented via regulation until 2018 (i.e., the equipment is available for purchase or rental at present but its use not mandated throughout all fleets until 2018): a. All off-road equipment shall have: i. Engines that meet or exceed either U.S. EPA Tier 3 off-road emission standards, or ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).	

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Air Quality (cont.)			
AIR-LRDP-4 (cont.)		*Mitigation Measure AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions will be required for all construction activities to reduce those impacts to less than significant. Mitigation Measure AIR-LRDP-2: Architectural Coatings would reduce average daily construction emissions of ROG to less than 54 pounds per day of ROG. Mitigation Measure AIR-LRDP-3: Off-Road Equipment Control Measures for NOx would reduce average daily NOx emissions during building construction, but NOx would still exceed the 54 pound per day threshold. For that reason, the impact of increased emissions of criteria air pollutants during demolition and construction activities would be significant and unavoidable.*	
AIR-LRDP-5: Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during operation.	Potentially Significant	**AIR-LRDP-4: BAAQMD-Suggested Operational Measures** The following measures identified in the 2012 BAAQMD *CEQA Guidelines* shall be considered for implementation for site-specific development projects if not already in place: • Provide and maintain secure bike parking (at least one space per 20 vehicle spaces); • Provide and maintain showers and changing facilities for employees; • Provide information on transportation alternatives to employees; • Provide and maintain preferential carpool and vanpool parking for non-residential uses; • Increase building energy efficiency below Title 24 (reduces NOx related to natural gas combustion); • Require use of electrically powered landscape equipment, where feasible; • Use low VOC architectural coatings in maintaining buildings; • Meet California Green Building Code standards in new construction (reduces NO_x related to natural gas combustion); • Adopt policies supporting infill development; • Create and enhance landscaped greenway, trail, and sidewalk connections between neighborhoods, commercial areas, activity centers, and parks; and • Ensure that proposed land uses are supported by a multi-modal transportation system and that the land uses themselves support the development of the transportation system.	Significant and Unavoidable

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Air Quality (cont.)			
AIR-LRDP-5 (cont.)		*Mitigation Measure AIR-LRDP-4 would not result in the 78% reduction necessary (for ROG) or 41% (for NOx) to reduce the impact to a less-than-significant level. This amount of traffic reduction exceeds the best reduction estimates for TDM programs (BAAQMD, 2012b). Assuming a conservative 12% reduction in vehicle miles travelled associated with TDM measures, emissions of ROG and NOx would still exceed thresholds. Consequently, development under the 2014 LRDP with implementation of feasible mitigation measures would still result in significant environmental effects on air quality and contribute substantially to an existing air quality violation (ozone precursors and particulate matter). Therefore, even with implementation of Mitigation Measure AIR-LRDP-4, the impact would remain significant and unavoidable for emissions of ROG and NOx.*	
AIR-LRDP-6: Implementation of the 2014 LRDP would result in increased emissions of toxic air contaminants that could increase health risks for nearby residents during demolition and construction activities.	Less than Significant	None required	Less than Significant
Biological Resources			
BIO-LRDP-1: Implementation of the 2014 LRDP could have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	Less than Significant	None required	Less than Significant
BIO-LRDP-2: Implementation of the 2014 LRDP would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.	Less than Significant	None required	Less than Significant
BIO-LRDP-3: Implementation of the 2014 LRDP would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	No Impact	None required	No Impact

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Biological Resources (cont.)			
BIO-LRDP-4: Implementation of the 2014 LRDP would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Potentially Significant	**BIO-LRDP-1: Bird-Safe Building Treatments.** • Employ glazing options such as use of either fritted glass, Dichroic glass, etched glass, translucent glass, or glass that reflects ultraviolet light in appropriate portions of the façade. • Minimize light and glare resulting from new buildings through the orientation of the building, use of landscaping materials and choice of primary facade materials. Design standards and guidelines to minimize light and glare shall be adopted for the new buildings, including: reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades.	Less than Significant
BIO-LRDP-5: Implementation of the 2014 LRDP would not conflict with any applicable policies protecting biological resources.	No Impact	None required	No Impact
BIO-LRDP-6: Implementation of the 2014 LRDP would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other applicable habitat conservation plan.	No Impact	None required	No Impact
BIO-LRDP-7: Implementation of the 2014 LRDP would not exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance.	Less than Significant	None required	Less than Significant
Cultural Resources			
CUL-LRDP-1: Implementation of the 2014 LDP could result in a substantial adverse change in the significance of historical resources as defined in CEQA Guidelines Section 15064.5.	Potentially Significant	**CUL-LRDP-1:** Before altering or otherwise affecting a building or structure 50 years old or older, the campus shall retain a qualified architectural historian to record it on a California Department of Parks and Recreation DPR 523 form. Its significance shall be assessed by a qualified architectural historian, using the significance criteria set forth for historic resources under CEQA Guidelines Section 15064.5. For historic buildings, structures or features that do not meet the CEQA criteria for historical resource, no further mitigation is required and the impact is less than significant. For a building or structure that qualifies as a historic resource, the architectural historian and UCSF shall consider measures that would enable the project to avoid direct or indirect impacts to the building or structure. These could include project redesign or other measures that would avoid altering the building. All rehabilitation work of an historic building or structure shall be conducted in compliance with the *Secretary of the Interior's*	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources (cont.)			
CUL-LRDP-1 (cont.)		*Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*, to the extent feasible. Alterations to cultural landscapes shall be conducted in compliance with the *Secretary of the Interior's Guidelines for Rehabilitating Cultural Landscapes*. *If it is not feasible to meet the Secretary's Standards, the impact could be a significant and unavoidable impact.*	
CUL-LRDP-2: Implementation of the 2014 LRDP could result in demolition of historical resources as defined in CEQA Guidelines Section 15064.5.	Significant	**CUL-LRDP-2:** If a significant historic building or structure is proposed for substantial alteration or demolition, UCSF shall ensure that a qualified architectural historian thoroughly documents the building and associated landscaping and setting. Documentation shall include still photography and a written documentary record of the building to the National Park Service's standards of the Historic American Building Survey or Historic American Engineering Record, including accurate scaled mapping and architectural descriptions. If available, scaled architectural plans will also be included. Photos include large-format (4"X5") black-and-white negatives and 8"X10" enlargements. Digital photography may be substituted for large-format negative photography if archived locally. The record shall be accompanied by a report containing site-specific history and appropriate contextual information. This information shall be gathered through site specific and comparative archival research, and oral history collection as appropriate. A copy of the record shall be archived with the UCSF archives, the History Room of the San Francisco Public Library, the Northwest Information Center at Sonoma State University, and the San Francisco Planning Department. UCSF shall install interpretive materials at or near the site to enhance public awareness in the form of a historical marker, kiosk, or other display that contains historical photos and text about the building's historical significance.	Significant and Unavoidable
CUL-LRDP-3: Implementation of the 2014 LRDP could result in a substantial adverse change to archaeological resources.	Potentially Significant	**CUL-LRDP-3:** Should an archaeological artifact be discovered during project construction and excavation, pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" shall be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and UCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the project, representatives of UCSF and the qualified archaeologist and/or paleontologist shall meet to	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources (cont.)			
CUL-LRDP-3 (cont.)		determine the appropriate avoidance measures or other appropriate mitigation (per CEQA Guidelines 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR44716)).	
CUL-LRDP-4: Implementation of the 2014 LRDP could result in a substantial adverse change to paleontological resources.	Potentially Significant	**CUL-LRDP-4:** If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find shall be halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with UCSF and in conformance with Society of Vertebrate Paleontology Guidelines (SVP, 1995; SVP, 1996).	Less than Significant
CUL-LRDP-5: Implementation of the 2014 LRDP could result in a substantial adverse change to human remains.	Potentially Significant	**CUL-LRDP-5:** If the discovery includes human remains, CEQA Guidelines 15064.5 (e)(1) shall be followed: In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken: (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and (B) If the coroner determines the remains to be Native American: (1) the coroner shall contact the Native American Heritage Commission within 24 hours. (2) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. (3) The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources (cont.)			
CUL-LRDP-5 (cont.)		(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. (B) The descendant identified fails to make a recommendation; or (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	
Geology, Soils and Seismicity			
GEO-LRDP-1: Implementation of the 2014 LRDP could result in adverse effects to people and structures resulting from geologic hazards.	Less than Significant	None required	Less than Significant
GEO-LRDP-2: Implementation of the 2014 LRDP could result in substantial soil erosion or loss of topsoil.	Less than Significant	None required	Less than Significant
Greenhouse Gas Emissions			
GHG-LRDP-1: Implementation of the 2014 LRDP would result in an increase in construction-related greenhouse gas emissions.	Potentially Significant	**GHG-LRDP-1: Construction-Related GHG Reduction Measures** The following BAAQMD-suggested measures shall be implemented during demolition and construction activities: • Use alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment where feasible; • Use locally sourced building materials for at least 10% of overall materials brought to site; and • Recycle or reuse at least 50% of construction waste or demolition materials.	Less than Significant
GHG-LRDP-2: Implementation of the 2014 LRDP would result in an increase in operational greenhouse gas emissions.	Less than Significant	None required	Less than Significant
GHG-LRDP-3: Implementation of the 2014 LRDP would not conflict with the AB32 Scoping Plan, the UCSF Climate Action Plan or the UCSF GHG Reduction Strategy.	Less than Significant	None required	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Hazards and Hazardous Materials			
HAZ-LRDP-1: Implementation of the 2014 LRDP could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions.	Potentially Significant	**HAZ-LRDP-1:** An Excavation Management Plan shall be prepared by a qualified consultant to include the California Air Resource Board (CARB) Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations to minimize naturally occurring asbestos through the application of best management practices for fugitive dust from construction, grading and excavation operations. Unless site specific testing by a certified laboratory can demonstrate the absence of encountering naturally occurring asbestos, construction specifications shall include implementation of this CARB ATCM.	Less than Significant
HAZ-LRDP-2: Implementation of the 2014 LRDP could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools.	Less than Significant	None required	Less than Significant
HAZ-LRDP-3: 2014 LRDP proposals are located on campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public.	Potentially Significant	**HAZ-LRDP-2:** Prior to development on the Mission Center campus site, a Soil Management Plan shall be prepared by a qualified environmental consulting firm to reflect current regulatory requirements and risk management protocols that are in accordance with Regional Water Quality Control Board oversight. The Plan shall include measures to address protocols for identifying, handling, and characterizing suspect contaminated soils. Notification and sampling requirements for adequate characterization shall be in accordance with the overseeing agency (RWQCB or SFDEH) and any additional removal or remediation work completed prior to occupancy of the new structure.	Less than Significant
HAZ-LRDP-4: Implementation of the 2014 LRDP would not result in a safety hazard for people residing or working in the vicinity of a private airstrip.	Less than Significant	None required	Less than Significant
HAZ-LRDP-5: Implementation of the 2014 LRDP would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)	Less than Significant	None required	Less than Significant
HAZ-LRDP-6: Implementation of the 2014 LRDP would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. (Less than Significant)	Less than Significant	None required	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Hydrology and Water Quality			
HYD-LRDP-1: Implementation of the 2014 LRDP could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.	Less than Significant	None required	Less than Significant
HYD-LRDP-2: Implementation of the 2014 LRDP would not substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.	Less than Significant	None required	Less than Significant
HYD-LRDP-3: Implementation of the 2014 LRDP would not generate runoff that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff.	Less than Significant	None required	Less than Significant
HYD-LRDP-4: Implementation of the 2014 LRDP would place housing within a 100-year flood hazard area, potentially impede flood flows and potentially expose people to a significant risk of loss, injury or death associated with flooding.	Less than Significant	None required	Less than Significant
HYD-LRDP-5: Implementation of the 2014 LRDP would expose people or structures to a significant risk of loss, injury or death due to tsunami, seiche or mudflow.	Less than Significant	None required	Less than Significant
HYD-LRDP-6: Implementation of the 2014 LRDP would expose people or structures to an increased risk of loss, injury or death due to flooding from sea level rise.	Less than Significant	None required	Less than Significant
Land Use and Planning			
LU-LRDP-1: Implementation of the 2014 LRDP would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required	Less than Significant
LU-LRDP-2: The 2014 LRDP would not be incompatible with the City of San Francisco land use regulations.	Less than Significant	None required	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Noise			
NOI-LRDP-1: Implementation of the 2014 LRDP would result in increased ambient noise levels during demolition and construction activities.	Potentially Significant	**NOI-LRDP-1a: Construction Noise Control Measures** UCSF contractors shall employ site-specific noise attenuation measures during construction to reduce the generation of construction noise. These measures shall be included in a Noise Control Plan that shall be submitted for review and approval by UCSF to ensure that construction noise is consistent with the standards set forth in the City's Noise Ordinance. Measures specified in the Noise Control Plan and implemented during project construction shall include, at a minimum, the following noise control strategies: • Equipment and trucks used for construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds. • Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dBA. Quieter procedures, such as use of drills rather than impact tools, shall be used where feasible. • Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or include other measures. **NOI-LRDP-1b: Construction Hours** Construction hours are restricted to the hours listed in the table below. In rare circumstances, work may need to occur outside of these work hour limits. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

<table>
<tr><th>Environmental Impact</th><th>Level of Significance Before Mitigation</th><th>Mitigation Measures</th><th>Level of Significance After Mitigation</th></tr>
<tr><td colspan="4">Noise (cont.)</td></tr>
<tr><td>NOI-LRDP-1 (cont.)</td><td></td><td>
<table>
<tr><th></th><th colspan="2">“Not Noisy” Work[1]</th><th colspan="2">Noisy Work</th></tr>
<tr><th></th><th>Regular hours</th><th>Extended hours[2]</th><th>Regular hours</th><th>Extended hours</th></tr>
<tr><td>Monday - Friday</td><td>7:00 am to 5:00 pm</td><td>5:00 pm to 8:00 pm</td><td>8:00 am to 5:00 pm</td><td></td></tr>
<tr><td>Saturday</td><td></td><td>8:00 am to 5:00 pm</td><td></td><td>9:00 am to 4:00 pm</td></tr>
<tr><td>Sunday</td><td></td><td>8:00 am to 5:00 pm</td><td></td><td></td></tr>
</table>
[1] “Not Noisy” work = 80 decibels or less at 100 feet; “Noisy” work = more than 80 decibels at 100 feet.
[2] Extended hours to be considered by UCSF Community and Government Relations with advance notice from the project manager.
</td><td></td></tr>
<tr><td>NOI-LRDP-2: Implementation of the 2014 LRDP would result in increased ambient noise levels during pile-driving activities.</td><td>Potentially Significant</td><td>NOI-LRDP-2: Pile Driving Noise-Reducing Techniques and Muffling Devices

Noise-reducing pile-driving techniques shall be employed during project construction. These techniques shall include:

• Installing cast in place concrete piles. Noise from auger drilling is 17 dBA less than an impact pile driver.

• Vibrating piles into place, and installing shrouds around the pile-driving hammer where feasible.

• Installing intake and exhaust mufflers on pile-driving equipment

• Implement “quiet” pile-driving technology (such as pre-drilling of piles and the use of more than one pile driver to shorten the total pile driving duration).

• Use cushion blocks to dampen impact noise. Cushion blocks are blocks of material that are used with impact hammer pile drivers. They consist of blocks of material placed atop a piling during installation to minimize noise generated when driving the pile. Materials typically used for cushion blocks include wood, nylon and micarta (a composite material).

• At least 48 hours prior to pile-driving activities, UCSF shall notify building owners and occupants within 600 feet of the project site of the dates, hours, and expected duration of such activities.</td><td>Significant and Unavoidable</td></tr>
</table>

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Noise (cont.)			
NOI-LRDP-2 (cont.)		*Mitigation Measure NOI-LRDP-2 would reduce the severity of noise generated by pile-driving activities and reduce the potential annoyance to nearby residents and others who could be disturbed by pile-driving to the extent feasible. If piles can be installed though drilling and cast in place measures then this mitigation measure would result in a less than significant impact.* *However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration, even after mitigation the noise level above the ambient noise level would likely exceed 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.*	
NOI-LRDP-3: Implementation of the 2014 LRDP would generate ground-borne vibration during demolition and construction activities.	Less than Significant	None required	Less than Significant
NOI-LRDP-4: Implementation of the 2014 LRDP could cause a long-term increase in ambient noise levels in the vicinity.	Less than Significant	None required	Less than Significant
NOI-LRDP-5: Implementation of the 2014 LRDP would result in exposure of persons (new residents) to noise levels in excess of standards established in the City of San Francisco General Plan.	Less than Significant	None required	Less than Significant
Population and Housing			
POP-LRDP-1: The 2014 LRDP would induce population growth in the San Francisco Bay area, which could create demand for housing outside the market area.	Less than Significant	None required	Less than Significant
Public Services			
PUB-LRDP-1: Implementation of the 2014 LRDP would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.	Less than Significant	None required	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Public Services (cont.)			
PUB-LRDP-2: Implementation of the 2014 LRDP would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities, need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.	Less than Significant	None required	Less than Significant
PUB-LRDP-3: Implementation of the 2014 LRDP would not result in substantial adverse physical impacts associated with the provision of new or physically altered public school facilities, need for new or physically altered public school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.	Less than Significant	None required	Less than Significant
Recreation			
REC-LRDP-1: Implementation of the 2014 LRDP would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	Less than Significant	None required	Less than Significant
REC-LRDP-2: The 2014 LRDP includes new recreational facilities, the construction of which could have an adverse impact on the environment.	Less than Significant	None required	Less than Significant
Transportation and Traffic			
TRAF-LRDP-1: Implementation of the 2014 LRDP would be consistent with the primary goals of the City and County of San Francisco (CCSF) with respect to transportation and would not fundamentally conflict with the CCSF's Transit First Policy because the 2014 LRDP demonstrates reasonable efforts to continue transportation services (e.g., the UCSF Shuttles) that encourage alternatives to use of single-occupant automobiles.	Less than Significant	None required	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Transportation and Traffic (cont.)			
TRAF-LRDP-2: Implementation of the 2014 LRDP could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities.	Potentially Significant	**TRAF-LRDP-1: Construction Coordination and Monitoring Measures.** ***Traffic Control Plan for Construction*** –In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the four campus sites, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and its construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (e.g. Parnassus Avenue (Parnassus Heights), Sutter Street (Mount Zion), etc.) and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the 2014 LRDP Projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets (the Blue Book), which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. 2 In addition to the regulations in the Blue Book, UCSF shall require the construction contractor(s) to comply with all state and federal codes, rules and regulations. In the event that the construction timeframes of the major phases and other development projects adjacent to UCSF overlap, such as the adjacent proposed development at Mission Bay Blocks 29-32, UCSF shall coordinate with City Agencies through the Transportation Advisory Staff Committee (TASC) and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures. ***Reduce SOV Mode Share for Construction Workers*** – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling and transit access to the campus sites by construction workers in the coordinated plan.	Less than Significant

2 The SFMTA Blue Book, 8th Edition (2012), is available online through SFMTA (sfmta.com).

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Transportation and Traffic (cont.)			
TRAF-LRDP-2 (cont.)		***Project Construction Updates for Adjacent Residents and Businesses*** – In order to minimize construction impacts on access for nearby residences, institutions and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.	
TRAF-LRDP-3: Implementation of the 2014 LRDP would result in temporary increases in traffic volumes on roadways in the vicinity of each of the four campus sites during demolition and construction activities.	Potentially Significant	Implement **TRAF-LRDP-1**	Less than Significant
TRAF-LRDP-4: Implementation of the 2014 LRDP would increase traffic (vehicles, transit ridership, pedestrian and bicycle volumes) on the roadway network that serves each of the four campus sites, as well as increase loading and parking demand.	Less than Significant	None required	Less than Significant
Utilities and Service Systems			
UTIL-LRDP-1: There would be sufficient water supplies available to serve the 2014 LRDP from existing entitlements and resources and no new or expanded water treatment facilities would be required.	Less than Significant	None required	Less than Significant
UTIL-LRDP-2: The wastewater treatment provider has adequate capacity to serve UCSF's projected demand resulting from implementation of the 2014 LRDP and no new or expanded wastewater treatment facilities would be required.	Less than Significant	None required	Less than Significant
UTIL-LRDP-3: Implementation of the 2014 LRDP would not exceed the wastewater treatment requirements of the Regional Water Quality Control Board.	Less than Significant	None required	Less than Significant
UTIL-LRDP-4: Implementation of the 2014 LRDP would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Less than Significant	None required	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF 2014 LRDP IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Utilities and Service Systems (cont.)			
UTIL-LRDP-5: UCSF be served by a landfill with sufficient permitted capacity to accommodate solid waste needs resulting from implementation of the 2014 LRDP and would comply with federal, state and local statutes and regulation related to solid waste.	Less than Significant	None required	Less than Significant
UTIL-LRDP-6: Implementation of the 2014 LRDP would not result in the wasteful, inefficient and unnecessary consumption of energy.	Less than Significant	None required	Less than Significant
UTIL-LRDP-7: Implementation of the 2014 LRDP could result in the construction of new electrical or natural gas facilities, which could cause significant environmental effects.	Less than Significant	None required	Less than Significant

TABLE 2-2
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures[3]	Level of Significance After Mitigation
Aesthetics			
AES-PH-1: The New Hospital Addition and faculty housing at the Proctor site and Fifth and Parnassus avenues at the Parnassus Heights campus site would not have a substantial adverse effect on a scenic vista.	Less than Significant	None required	Less than Significant
AES-PH-2: The New Hospital Addition, new faculty housing and the Parnassus Avenue Streetscape Plan at the Parnassus Heights campus site would not substantially degrade the existing visual character or quality of the site and its surroundings.	Less than Significant	None required	Less than Significant
AES-PH-3: Construction of the New Hospital Addition and faculty housing at the Parnassus Heights campus site could result in flood lighting sites during nighttime construction activities.	Potentially Significant	Implement **AES-LRDP-1**	Less than Significant
AES-PH-4: The New Hospital Addition and new faculty housing at the Parnassus Heights campus site could create new sources of substantial light or glare that would adversely affect day or nighttime views in the area.	Potentially Significant	Implement **AES-LRDP-2**	Less than Significant
AES-PH-5: The demolition of 8 existing buildings, including LPPI, and construction of the New Hospital Addition at the Parnassus Heights campus site would create street-level winds that could be hazardous to pedestrians in the area.	Potentially Significant	Implement **AES-LRDP-3**	Less than Significant
Air Quality			
AIR-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus site would result in increased emissions of criteria air pollutants during demolition and construction activities.	Potentially Significant	Implement **AIR-LRDP-1**, **AIR-LRDP-2**, and **AIR-LRDP-3**	Less than Significant
AIR-PH-2: Demolition and construction activities at the Parnassus Heights campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents.	Less than Significant	None required	Less than Significant
AIR-PH-3: Operations at the Parnassus Heights campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants.	Potentially Significant	Implement **AIR-LRDP-4**	Less than Significant
AIR-PH-4: Operations at the Parnassus Heights campus site under the 2014 LRDP would expose persons (new receptors) to substantial levels of TACs, which may lead to adverse health effects.	Less than Significant	None required	Less than Significant

[3] This table references the mitigation measures in Table 2-1, as well as additional mitigation measures that apply to the Parnassus Heights campus site.

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Air Quality (cont.)			
AIR-PH-5: Operations at the Parnassus Heights campus site under the 2014 LRDP would cumulatively expose persons (existing and new receptors) to substantial levels of TACs, which may lead to adverse health effects.	Less than Significant	None required	Less than Significant
Biological Resources			
BIO-PH-1: Demolition and construction activities at the Parnassus Heights campus site could have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.	Potentially Significant	**BIO-PH-1a: Preconstruction Surveys for Monarch Butterfly Winter Roosts and Avoidance.** Prior to demolition activities, a qualified biologist familiar with monarch butterfly aggregating behavior and habitat shall conduct a preconstruction survey for the presence of overwintering monarch butterfly aggregations. The survey shall be conducted in December or January during the period when overwintering aggregations appear. Should an overwintering aggregation be identified in trees adjacent to individual proposal sites within the Reserve, a 200-foot buffer shall be established around the occupied trees until the aggregation has dispersed. **BIO-PH-1b: Preconstruction Breeding Bird Surveys and Nest Avoidance.** Should construction activities associated with the new retaining wall, new trails, demolition of buildings, relocation, expansion, and replacement of the medical gas and diesel fuel tank storage, and construction of the new hospital addition within the Parnassus Heights campus site, commence during breeding bird season (February 15 – August 15) annually, UCSF shall retain a qualified biologist to conduct preconstruction nesting bird surveys in surrounding habitat for nesting birds. Specific measures to avoid and minimize impacts on nesting birds include, but are not limited to, those described below. • To avoid and minimize potential impacts on nesting raptors and other birds, preconstruction surveys shall be performed not more than two weeks prior to initiating vegetation removal and/or construction and demolition activities during the breeding season (i.e., February 15 through August 15). • To avoid and minimize potential impacts on nesting raptors and other birds, a no-disturbance buffer zone shall be established around active nests during the breeding season until the young have fledged and are self-sufficient, when no	Less than Significant

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Biological Resources (cont.)			
BIO-PH-1 (cont.)		further mitigation would be required. Typically, the size of individual buffers ranges from a minimum of 250 feet for raptors to a minimum of 50 feet for other birds but can be adjusted based on an evaluation of the site by a qualified biologist in cooperation with the USFWS and/or CDFW. • Birds that establish nests after construction starts are assumed to be habituated to and tolerant of the indirect adverse impacts resulting from construction noise and human activity. However, direct take of nests, eggs, and nestlings is still prohibited and an appropriate buffer must be established around the nest according to species and proximity to project activities in order to avoid nest abandonment or destruction. • If construction or demolition activities ceases for a period of more than two weeks, or vegetation removal is required after a period of more than two weeks has elapsed from the preconstruction surveys, then new nesting bird surveys must be conducted. **BIO-PH-1c: Avoidance and Minimization Measures for Special-Status Bats.** A qualified wildlife biologist shall conduct preconstruction special-status bat surveys of suitable roost sites in the vicinity of construction and demolition sites that abut the forest of Mount Sutro Open Space Reserve. If active day or night roosts are found, the wildlife biologist shall take actions to make such roosts unsuitable habitat before construction and demolition activities begin. A no-disturbance buffer of 100 feet shall be created around active bat roosts being used for maternity or hibernation purposes. Bat roosts that are established during active construction or demolition are presumed to be unaffected by these activities, and no buffer would be necessary. **BIO-PH-1d: Preconstruction Surveys for Special-Status Plants and Plant Avoidance.** Prior to construction activities, a qualified botanist shall conduct preconstruction surveys for special-status plants, coastal triquetrella and San Francisco gumplant, within the footprints of and in suitable habitat adjacent to locations of the new retaining wall, new trail alignments, and any access routes and staging areas to be used in support of these projects. Surveys for coastal	

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Biological Resources (cont.)			
BIO-PH-1 (cont.)		triquetrella can be conducted at any time of the year however surveys for San Francisco gumplant shall occur in the summer (June – September). Should special-status plant species be found during surveys, occurrences shall be marked in the field for avoidance during construction. **BIO-PH-1e: Relocation of Special-Status Plants.** If special-status plants are located within the retaining wall or new trails footprint and cannot be avoided, then a rare plant salvage and relocation plan shall be developed to relocate individuals to suitable habitat within the Reserve. A qualified botanist shall develop and implement the plan according to CDFW guidelines and in coordination with CDFW. At a minimum, the plan shall include collection of reproductive structures from affected plants, a full description of microhabitat conditions necessary for each affected species, seed germination requirements, restoration techniques for temporarily disturbed occurrences, assessments of potential transplant and enhancement sites, success and performance criteria, and monitoring programs, as well as measures to ensure long-term population viability. The mitigation methods shall include either salvage and transplantation or collection and propagation of seeds or other vegetative material. Any plant relocation shall be done under the supervision of a qualified restoration botanist.	
BIO-PH-2: Demolition and construction activities at the Parnassus Heights campus site could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Potentially Significant	**Implement BIO-LRDP-1: Bird-Safe Building Treatments** and **BIO-PH-2a: Night Lighting Minimization during Construction** Construction areas set up for nighttime activity and requiring lights shall implement the following measures as long as the safety of workers is not compromised: • All construction related lighting shall be fully shielded and focused down to ensure no significant illumination passes beyond the immediate work area. Lighting shall be positioned around the perimeter of the work area positioned toward activity and not surrounding habitat of the Reserve. • Yellow or orange light shall be used where possible. • Construction personnel shall reduce the amount of lighting to the minimum necessary to safely accomplish the work.	Less than Significant

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Biological Resources (cont.)			
BIO-PH-2 (cont.)		• Night construction near suitable habitat for nesting and migratory birds and bats (i.e. the Reserve forest and understory vegetation) shall be avoided during nesting season (February 15 – August 15). If night construction near these areas cannot be avoided, light shall not be allowed to shine directly into suitable habitat. • Construction areas set-up for night time activity are subject to all of the same preconstruction surveys for nesting birds and roosting bats listed in this section, above. **BIO-PH-2b: Operational Night Lighting Minimization.** In addition to minimizing night lighting during demolition and construction of the 2014 LRDP proposals, UCSF shall similarly ensure that the design and specifications for buildings implement design elements to reduce lighting usage, change light direction, and contain light. These include, but are not limited to, the following general considerations that shall be applied wherever feasible throughout 2014 LRDP proposals within the Parnassus Heights campus site to reduce night lighting impacts on avian and bat species: • Avoid installation of lighting in areas where not required for public safety. • Examine and adopt alternatives to bright, all-night, floor-wide lighting when interior lights would be visible from the exterior or when exterior lights must be left on at night, including: – Installing motion-sensitive lighting – Installing task lighting – Installing programmable timers – Installing fixtures that use lower-wattage, sodium, and yellow-red spectrum lighting (if compatible with personnel safety requirements). • Install strobe or flashing lights in place of continuously burning lights for any obstruction lighting that may be required. • Where exterior lights are to be left on at night, install fully shielded lights to contain and direct light away from the sky.	

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources			
CUL-PH-1: Demolition of seven buildings at the Parnassus Heights campus site would not result in a substantial adverse change in the significance of historical resources.	No Impact	None required	No Impact
CUL-PH-2: Demolition of the Surge building at the Parnassus Heights campus site would result in a substantial adverse change in the significance of an historical resource.	Potentially Significant	Implement **CUL-LRDP-2**	Significant and Unavoidable
CUL-PH-3: Renovation of Moffitt Hospital, UC Hall and Millberry Union towers at the Parnassus Heights campus site would not result in a substantial adverse change in the significance of historical resources.	Less than Significant	None required	Less than Significant
CUL-PH-4: Seismic rehabilitation of the historic Faculty Alumni House could result in a significant impact to this historic structure if not completed in accordance with the Secretary of the Interior's Standards.	Potentially Significant	**CUL-PH-4:** UCSF shall ensure that the proposed seismic upgrades to the Faculty Alumni House at 745 Parnassus Avenue would comply with the Secretary of the Interior's Standards for Rehabilitation. UCSF may need to hire a qualified professional architectural historian to review the proposed seismic upgrade plans for compliance with the Standards, and prepare a technical memorandum which describes any changes to the seismic design (if any) that may be needed to meet the Standards. Generally, under CEQA, projects that comply with the Secretary of the Interior's Standards are considered to have a less-than-significant impact on the environment.	Less than Significant
CUL-PH-5: Renovation of Saunders Court at the Parnassus Heights campus site could alter the features and spaces which convey its historic significance as a cultural landscape, which could result in a substantial adverse change in the significance of historical resources.	Potentially Significant	**CUL-PH-5:** Prior to undertaking any further designs for the renovation of Saunders Court, UCSF shall; 1) complete additional research at the UCSF Archives and the Robert R. Royston Collection (1946-1972) at the Environmental Design Library at UC Berkeley to determine the relative significance of this cultural landscape within Royston's overall body of work, 2) identify the character-defining features of the landscape itself (i.e., those features which convey its historic significance), and 3), hire a professional landscape architect and/or landscape historian to design the renovation project in a manner that is respectful of, and compatible with, the character-defining features of the landscape and is consistent with the *Secretary of the Interior's Guidelines for Rehabilitating Cultural Landscapes*.	Less than Significant
CUL-PH-6: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to archaeological resources.	Potentially Significant	Implement **CUL-LRDP-3**	Less than Significant

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources (cont.)			
CUL-PH-7: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to paleontological resources.	Potentially Significant	Implement **CUL-LRDP-4**	Less than Significant
CUL-PH-8: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to human remains.	Potentially Significant	Implement **CUL-LRDP-5**	Less than Significant
CUL-PH-9: Infrastructure and utilities improvements proposed at the Parnassus Heights campus site, including the Parnassus Avenue Streetscape Plan, would not result in a substantial adverse change in the significance of historical resources.	Potentially Significant	Implement **CUL-LRDP-3**, **CUL-LRDP-4**, and **CUL-LRDP-5**	Less than Significant
Geology, Soils and Seismicity			
Geology, soils and seismicity impacts at the Parnassus Heights campus site are included in evaluation of overall 2014 LRDP effects as discussed under **Impact GEO-LRDP-1** and **GEO-LRDP-2** (see Table 2-1).	Less than Significant	None required	Less than Significant
Greenhouse Gas Emissions			
GHG-PH-1: Development at the Parnassus Heights campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions.	Potentially Significant	Implement **GHG-LRDP-1**	Less than Significant
GHG-PH-2: Development at the Parnassus Heights campus site under the 2014 LRDP would result in an increase in operational GHG emissions.	Less than Significant	None required	Less than Significant
Hazards and Hazardous Materials			
HAZ-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions.	Potentially Significant	Implement **HAZ-LRDP-1**	Less than Significant
HAZ-PH-2: Implementation of the 2014 LRDP at the Parnassus Heights campus site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools.	Less than Significant	None required	Less than Significant
HAZ-PH-3: 2014 LRDP proposals located at the Parnassus Heights campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public.	Less than Significant	None required	Less than Significant

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Hazards and Hazardous Materials (cont.)			
HAZ-PH-4: Implementation of the 2014 LRDP at the Parnassus Heights campus would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	Less than Significant	None required	Less than Significant
Hydrology and Water Quality			
Hydrology and water quality impacts at the Parnassus Heights campus site are included in evaluation of overall 2014 LRDP effects as discussed under **Impact HYD-LRDP-1** through **HYD-LRDP-4** (see Table 2-1).	Less than Significant	None required	Less than Significant
Land Use and Planning			
LU-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required	Less than Significant
LU-PH-2: The proposed New Hospital Addition at the Parnassus Heights campus site would be compatible with adjacent land uses.	Less than Significant	None required	Less than Significant
LU-PH-3: The proposed renovations of Moffitt Hospital, UC Hall Millberry Union towers, and the Faculty Alumni House at the Parnassus Heights campus site would be compatible with existing City regulations.	Less than Significant	None required	Less than Significant
Noise			
NOI-PH-1: Demolition activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in a temporary increase in ambient noise levels.	Potentially Significant	Implement **NOI-LRDP-1** *Mitigation Measure NOI-LRDP-1 would reduce noise levels associated with demolition activities by 5 to 10 dBA. However it is likely that intermittent hoe-ram operations to break up concrete structures could result in noise levels at sensitive receptors in excess of 70 dBA during one to two weeks of the demolition of Proctor, even after mitigation. Consequently, this impact, although temporary, would be significant and unavoidable.*	Significant and Unavoidable
NOI-PH-2: Construction activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in increases in ambient noise levels over the term of the exterior construction activities.	Potentially Significant	Implement **NOI-LRDP-1** and **NOI-LRDP-2** *Mitigation Measures LRDP-NOI-1 and NOI-LRDP-2 would reduce the severity of noise generated by construction and pile-driving activities and reduce the potential annoyance to nearby residents*	Significant and Unavoidable

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Noise (cont.)			
NOI-PH-2 (cont.)		*and others who could be disturbed by pile-driving to the extent feasible. If piles can be installed though drilling and cast in place measures then these mitigation measures would result in a less than significant impact.* *However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration (up to about six weeks in total), even after mitigation the noise level would likely exceed ambient noise levels by 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.*	
NOI-PH-3: Demolition and construction and demolition activities proposed under the 2014 LRDP at the Parnassus Heights campus site could generate ground-borne vibration.	Less than Significant	None required	Less than Significant
NOI-PH-4: Operational noise generated by development under the 2014 LRDP at the Parnassus Heights campus site could cause a long-term increase in ambient noise levels in the campus vicinity.	Less than Significant	None required	Less than Significant
NOI-PH-5: Operations under the 2014 LRDP at the Parnassus Heights site would result in exposure of persons (new residents) to noise levels in excess of standards established in the general plan.	Less than Significant	None required	Less than Significant
Population and Housing			
No site-specific impacts			
Public Services			
No site-specific impacts			
Recreation			
No site-specific impacts			
Transportation and Traffic			
TRAF-PH-1: Implementation of the 2014 LRDP on the Parnassus Heights campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities.	Potentially Significant	Implement **TRAF-LRDP-1**	Less than Significant
TRAF-PH-2: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase traffic at intersections on the adjacent roadway network.	Less than Significant	None required	Less than Significant

TABLE 2-2 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – PARNASSUS HEIGHTS IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Transportation and Traffic (cont.)			
TRAF-PH-3: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase transit ridership demand.	Less than Significant	None required	Less than Significant
TRAF-PH-4: Implementation of the 2014 LRDP on the Parnassus Heights campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-PH-5: Implementation of the 2014 LRDP on the Parnassus Heights campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-PH-6: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase loading demand.	Less than Significant	None required	Less than Significant
TRAF-PH-7: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase parking demand.	Less than Significant	None required	Less than Significant
Utilities and Service Systems			
No site-specific impacts			

TABLE 2-3
SUMMARY OF 2014 LRDP PROPOSALS – MISSION BAY IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures[4]	Level of Significance After Mitigation
Aesthetics			
AES-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site would not have a substantial adverse effect on a scenic vista.	Less than Significant	None required	Less than Significant
AES-MB-2: Implementation of the 2014 LRDP at the Mission Bay campus site would not substantially degrade the existing visual character or quality of the site and its surroundings.	Less than Significant	None required	Less than Significant
AES-MB-3: Implementation of the 2014 LRDP at the Mission Bay campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area.	Potentially Significant	Implement **AES-LRDP-1**	Less than Significant
AES-MB-4: Implementation of the 2014 LRDP at the Mission Bay campus site could result in flood lighting during nighttime construction activities.	Potentially Significant	Implement **AES-LRDP-2**	Less than Significant
AES-MB-5: Implementation of the 2014 LRDP at the Mission Bay campus site could create street-level winds that could be hazardous to pedestrians in the area.	Potentially Significant	Implement **AES-LRDP-3**	Less than Significant
AES-MB-6: Implementation of the 2014 LRDP at the Mission Bay campus site could substantially reduce sunlight or significantly increase shadows in public open space areas or could shadow the potential school site on Block 14.	Less than Significant	None required	Less than Significant
Air Quality			
AIR-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site would result in increased emissions of criteria air pollutants during construction activities.	Potentially Significant	Implement **AIR-LRDP-1**, **AIR-LRDP-2**, and **AIR-LRDP-3**	Less than Significant
AIR-MB-2: Construction activities at the Mission Bay campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents.	Potentially Significant	**AIR-MB-1:** Obtain written verification from BAAQMD that the facility has been issued a permit from BAAQMD, if required by law, or that permit requirements do not apply to the facility. (Modified from *Mission Bay Subsequent EIR Mitigation Measure F.03*)	Less than Significant
AIR-MB-3: Operations at the Mission Bay campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants.	Potentially Significant	Implement **AIR-LRDP-4** *Mitigation Measure AIR-LRDP-4 would not result in the 59% reduction necessary (for ROG) or 27% (for NOx) to reduce the impact to a less-than-significant level. This amount of traffic reduction exceeds the best reduction estimates for TDM programs (BAAQMD, 2012b). Assuming a conservative 12% reduction in vehicle miles travelled*	Significant and Unavoidable

[4] This table references the mitigation measures in Table 2-1, as well as additional mitigation measures that apply to the Mission Bay campus site.

TABLE 2-3 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION BAY IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Air Quality (cont.)			
AIR-MB-3 (cont.)		*associated with TDM measures, operational emissions of ROG at the Mission Bay campus site would be reduced to 126.8 pounds per day and emissions of NOx would be reduced to 62.68 pounds per day. Consequently, 2014 LRDP development at the campus site with implementation of feasible mitigations would still result in significant environmental effects on air quality and contribute substantially to an existing air quality violation (ozone precursors and particulate matter). Therefore, even with implementation of Mitigation Measure AIR-MB-4, this impact would remain significant and unavoidable for emissions of ROG, NOx and PM_{10}.*	
AIR-MB-4: Operations at the Mission Bay campus site under the 2014 LRDP would expose persons (new receptors) to substantial levels of TACs, which may lead to adverse health effects.	Potentially Significant	**AIR-MB-4: Particulate Filtration Systems for Block 15 Housing and Child Care.** *Air Filtration and Ventilation Requirements for Sensitive Land Uses.* As part of the building design, UCSF shall include a ventilation plan for the proposed housing and day care building. The ventilation plan shall show that the building ventilation system removes at least 80% of the outdoor $PM_{2.5}$ concentrations from habitable areas and be designed by an engineer certified by ASHRAE, who shall provide a written report documenting that the system meets the 80% performance standard and offers the best available technology to minimize outdoor to indoor transmission of $PM_{2.5}$. *Maintenance Plan.* UCSF shall prepare a plan that ensures ongoing maintenance for the ventilation and filtration systems.	Less than Significant
AIR-MB-5: Operations at the Mission Bay campus site under the 2014 LRDP would cumulatively expose persons (existing and new receptors) to substantial levels of TACs, which may lead to adverse health effects.	Less than Significant	None required	Less than Significant
Biological Resources			
None			
Cultural Resources			
CUL-MB-1: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to archaeological resources.	Potentially Significant	Implement **CUL-LRDP-3**	Less than Significant
CUL-MB-2: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to paleontological resources.	Potentially Significant	Implement **CUL-LRDP-4**	Less than Significant

TABLE 2-3 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION BAY IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources (cont.)			
CUL-MB-3: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to human remains.	Potentially Significant	Implement **CUL-LRDP-5**	Less than Significant
Geology, Soils and Seismicity			
Geology, soils and seismicity impacts at the Mission Bay campus site are included in evaluation of overall 2014 LRDP effects as discussed under **Impact GEO-LRDP-1** and **GEO-LRDP-2** (see Table 2-1).	Less than Significant	None required	Less than Significant
Greenhouse Gas Emissions			
GHG-MB-1: Development at the Mission Bay campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions.	Potentially Significant	Implement **GHG-LRDP-1**	Less than Significant
GHG-MB-2: Development at the Mission Bay campus site under the 2014 LRDP would result in an increase in operational GHG emissions.	Less than Significant	None required	Less than Significant
Hazards and Hazardous Materials			
HAZ-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions.	Potentially Significant	Implement **HAZ-LRDP-1**	Less than Significant
HAZ-MB-2: Implementation of the 2014 LRDP at the Mission Bay site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools.	Less than Significant	None required	Less than Significant
HAZ-MB-3: 2014 LRDP proposals located at the Mission Bay campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public.	Less than Significant	None required	Less than Significant
HAZ-MB-4: Implementation of the 2014 LRDP at the Mission Bay campus would not result in a safety hazard for people residing or working in the vicinity of a private airstrip.	Less than Significant	None required	Less than Significant

TABLE 2-3 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION BAY IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Hydrology and Water Quality			
HYD-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.	Potentially Significant	**HYD-MB-1a:** Participate in the City's existing Water Pollution Prevention Program. UCSF shall facilitate implementation of the City's Water Pollution Prevention Program by providing and installing wastewater sampling ports in any building anticipated to have a potentially significant discharge of pollutants to the sanitary sewer, as determined by the Water Pollution Prevention Program of the San Francisco Public Utilities Commission's Bureau of Environmental Regulation and Management, and in locations as determined by the Water Pollution Prevention Program. (*Mission Bay Subsequent EIR Mitigation Measure K.02*). **HYD-MB-1b:** UCSF shall design and construct sewer improvements such that potential flows to the City's combined sewer system from the project do not contribute to an increase in the annual overflow volume as projected by the Bayside Planning Model by providing increased storage in oversized pipes, centralized storage facilities, smaller dispersed storage facilities, or detention basins, or through other means to reduce or delay stormwater discharges to the City system. (*Mission Bay Subsequent EIR Mitigation Measure K.03*). **HYD-MB-1c:** Implement alternative technologies or use other means to reduce settleable solids and floatable materials in stormwater discharges to China Basin Channel to levels equivalent to, or better than, City-treated combined sewer overflows. Such alternatives technologies could include one or more of the following: biofilter system, vortex sediment system, catch basin filters, and/or additional source control measures to remove particulates from streets and parking lots. (Modified from *Mission Bay Subsequent EIR Mitigation Measure K.04*).	Less than Significant
HYD-MB-2: Development of proposed housing on Block 15 at the Mission Bay campus site would place housing within a 100-year flood hazard area as mapped on the preliminary (2013) FIRM map for San Francisco, potentially impede flood flows, and potentially expose people to a significant risk of loss, injury, or death associated with flooding.	Less than Significant	None required	Less than Significant
HYD-MB-3: Development of 2014 LRDP proposals on the Mission Bay campus site would expose people or structures to a significant risk of loss, injury or death due to inundation by seiches or tsunamis.	Less than Significant	None required	Less than Significant
HYD-MB-4: Development of 2014 LRDP proposals on the Mission Bay campus site would expose people or structures to an increased risk of loss, injury or death due to flooding from sea level rise.	Less than Significant	None required	Less than Significant

TABLE 2-3 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION BAY IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Land Use and Planning			
LU-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required	Less than Significant
LU-MB-2: Implementation of the 2014 LRDP at the Mission Bay campus site would be compatible with existing land uses, density, and height and bulk restrictions.	Less than Significant	None required	Less than Significant
Noise			
NOI-MB-1: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels over the term of the exterior construction activities.	Potentially Significant	Implement **NOI-LRDP-1**	Less than Significant
NOI-MB-2: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels during pile-driving activities.	Potentially Significant	Implement **NOI-LRDP-2** *Mitigation Measure NOI-LRDP-2 would reduce the severity of noise generated by pile-driving activities and reduce the potential annoyance to nearby residents and others who could be disturbed by pile-driving to the extent feasible. If piles can be installed though drilling and cast in place measures then this mitigation measure would result in a less than significant impact.* *However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration, even after mitigation the noise level would likely exceed 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.*	Significant and Unavoidable
NOI-MB-3: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site could generate ground-borne vibration.	Less than Significant	None required	Less than Significant
NOI-MB-4: Operational noise generated by development under the 2014 LRDP at the Mission Bay campus site could cause a long-term increase in ambient noise levels in the campus vicinity.	Less than Significant	None required	Less than Significant
NOI-MB-5: Operations under the 2014 LRDP at the Mission Bay campus site would result in exposure of persons (new residents) to noise levels in excess of standards established in the general plan.	Less than Significant	None required	Less than Significant
Population and Housing			
No site-specific impacts			

TABLE 2-3 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION BAY IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Public Services			
No site-specific impacts			
Recreation			
No site-specific impacts			
Transportation and Traffic			
TRAF-MB-1: Implementation of the 2014 LRDP on the Mission Bay campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during construction activities.	Potentially Significant	Implement **TRAF-LRDP-1**	Less than Significant
TRAF-MB-2: Implementation of the 2014 LRDP on the Mission Bay campus site would increase traffic at intersections on the adjacent roadway network.	Less than Significant	None required	Less than Significant
TRAF-MB-3: Implementation of the 2014 LRDP on the Mission Bay campus site would increase transit ridership demand.	Less than Significant	None required	Less than Significant
TRAF-MB-4: Implementation of the 2014 LRDP on the Mission Bay campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-MB-5: Implementation of the 2014 LRDP on the Mission Bay campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-MB-6: Implementation of the 2014 LRDP on the Mission Bay campus site would increase loading demand.	Less than Significant	None required	Less than Significant
TRAF-MB-7: Implementation of the 2014 LRDP on the Mission Bay campus site would increase parking demand.	Less than Significant	None required	Less than Significant
Utilities and Service Systems			
The overall effects on utilities at the Mission Bay campus site are included in evaluation of 2014 LRDP effects as discussed under **Impact UTIL-LRDP-1** through **UTIL-LRDP-7** (see Table 2-1).	Less than Significant	None required	Less than Significant
UTIL-MB-1: There would be sufficient water supply infrastructure to serve 2014 LRDP development at the Mission Bay campus site.	Less than Significant	None required	Less than Significant

TABLE 2-3 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION BAY IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Utilities and Service Systems (cont.)			
UTIL-MB-2: There may be impacts related to wastewater infrastructure as a result of 2014 LRDP development at the Mission Bay campus site.	Potentially Significant	**UTIL-MB-1:** UCSF will monitor sanitary sewer flows to the P15 pump station in congruence with on-going monitoring conducted by the SFPUC. If the SFPUC determines that improvements are required to increase the capacity of the P15 pump station as a result of development within the pump station basin, including 2014 UCSF LRDP development at the Mission Bay campus site, UCSF will contribute its fair share to SFPUC for the potential required pump capacity improvements. UCSF will monitor sanitary sewer flows to the Mariposa Pump Station in congruence with on-going monitoring conducted by the SFPUC. If the SFPUC determines that improvements are required to increase the capacity of the Mariposa Pump Station as a result of development within the pump station basin, including 2014 UCSF LRDP development at the Mission Bay campus site, UCSF will contribute its fair share to SFPUC for the potential required improvements. *Because potential improvements are outside UCSF jurisdiction to implement, the impact is considered significant and unavoidable even with the incorporation of the above-noted mitigation measures.*	Significant and Unavoidable
UTIL-MB-3: There would be sufficient storm drainage infrastructure to serve 2014 LRDP development at the Mission Bay campus site.	Less than Significant	None required	Less than Significant

TABLE 2-4
SUMMARY OF 2014 LRDP PROPOSALS – MOUNT ZION IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures[5]	Level of Significance After Mitigation
Aesthetics			
AES-MZ-1: The proposed office/research building at the Mount Zion campus site would not substantially degrade the existing visual character or quality of the campus site and its surroundings.	Less than Significant	None required	Less than Significant
AES-MZ-2: The proposed office/research building at the Mount Zion campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area.	Potentially Significant	Implement **AES-LRDP-1**	Less than Significant
AES-MZ-3: Construction of the proposed office/research building at the Mount Zion campus site could result in flood lighting sites during nighttime construction activities.	Potentially Significant	Implement **AES-LRDP-2**	Less than Significant
AES-MZ-4: The proposed office/research building at the Mount Zion campus site would cast shadow on the Hamilton Recreation Center.	Potentially Significant	Implement **AES-LRDP-4**	Less than Significant
AES-MZ-5: The demolition of the three existing buildings and construction of the Office / Research building at the Mount Zion campus site would create street-level winds that could be hazardous to pedestrians in the area.	Potentially Significant	Implement **AES-LRDP-43**	Less than Significant
Air Quality			
AIR-MZ-1: Implementation of the 2014 LRDP at the Mount Zion campus site would result in increased emissions of criteria air pollutants during demolition and construction activities.	Potentially Significant	Implement **AIR-LRDP-1**, **AIR-LRDP-2**, and **AIR-LRDP-3**	Less than Significant
AIR-MZ-2: Demolition and construction activities at the Mount Zion campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents.	Less than Significant	None required	Less than Significant
AIR-MZ-3: Operations at the Mount Zion campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants.	Potentially Significant	Implement **AIR-LRDP-4**	Less than Significant
AIR-MZ-4: Operations at the Mount Zion campus site under the 2014 LRDP would increase emissions of TACs and increase health risks for nearby residents.	Less than Significant	None required	Less than Significant
Biological Resources			
None			

[5] This table references the mitigation measures in Table 2-1, as well as additional mitigation measures that apply to the Mount Zion campus site.

TABLE 2-4 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MOUNT ZION IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources			
CUL-MZ-1: Demolition of the Hellman building at the Mount Zion campus site would result in a substantial adverse change in the significance of an historical resource.	Potentially Significant	**CUL-MZ-1:** Typical mitigation for the demolition of a historic resource includes HABS-level photodocumention, as well as public interpretation. HABS-level photodocumentation was already completed in 2006. UCSF shall furnish copies of the report to local depositories of historical information to enhance public understanding and increase the availability of these materials for future research. Such depositories shall include the History Room of the San Francisco Public Library (Main Branch), San Francisco Heritage, and the Northwest Information Center at Sonoma State University. As part of the design for the proposed new office/research building to be constructed in this location, UCSF shall install interpretive materials at or near the site to enhance public awareness in the form of a historical marker, kiosk, or other display which contains historical photos and text about the Hellman building's historical significance. The contents of the display can be obtained from the HABS documentation effort.	Significant and Unavoidable
CUL-MZ-2: Renovation of the Main Hospital at the Mount Zion campus site would not result in a substantial adverse change in the significance of historical resources.	Less than Significant	None required	Less than Significant
CUL-MZ-3: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to historical resources.	Less than Significant	None required	Less than Significant
CUL-MZ-4: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to archaeological resources.	Potentially Significant	Implement **CUL-LRDP-3**	Less than Significant
CUL-MZ-5: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to paleontological resources.	Potentially Significant	Implement **CUL-LRDP-4**	Less than Significant
CUL-MZ-6: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to human remains.	Potentially Significant	Implement **CUL-LRDP-5**	Less than Significant
Geology, Soils and Seismicity			
Geology, soils and seismicity impacts at the Mount Zion campus site are included in evaluation of overall 2014 LRDP effects as discussed under **Impact GEO-LRDP-1** and **GEO-LRDP-2** (see Table 2-1).	Less than Significant	None required	Less than Significant

TABLE 2-4 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MOUNT ZION IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Greenhouse Gas Emissions			
GHG-MZ-1: Development at the Mount Zion campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions.	Potentially Significant	Implement **GHG-LRDP-1**	Less than Significant
GHG-MZ-2: Development at the Mount Zion campus site under the 2014 LRDP would result in an increase in operational GHG emissions.	Less than Significant	None required	Less than Significant
Hazards and Hazardous Materials			
HAZ-MZ-1: Implementation of the 2014 LRDP could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions.	Potentially Significant	Implement **HAZ-LRDP-1**	Less than Significant
HAZ-MZ-2: Implementation of the 2014 LRDP at the Mount Zion campus site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools.	Less than Significant	None required	Less than Significant
Hydrology and Water Quality			
Hydrology and water quality impacts at the Mount Zion campus site are included in evaluation of overall 2014 LRDP effects as discussed under **Impact HYD-LRDP-1** through **HYD-LRDP-3** (see Table 2-1).	Less than Significant	None required	Less than Significant
Land Use and Planning			
LU-MZ-1: Implementation of the 2014 LRDP at the Mount Zion campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required	Less than Significant
LU-MZ-2: Renovation of the Main Hospital at the Mount Zion campus site would be compatible with existing land uses, density, and height and bulk restrictions.	Less than Significant	None required	Less than Significant
LU-MZ-3: The proposed office/research building at the Mount Zion campus site would be compatible with adjacent land uses.	Less than Significant	None required	Less than Significant

TABLE 2-4 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MOUNT ZION IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Noise			
NOI-MZ-1: Demolition activities proposed under the 2014 LRDP at the Mount Zion campus site would result in a temporary increase in ambient noise levels.	Potentially Significant	Implement **NOI-LRDP-1** *Mitigation Measure NOI-LRDP-1 would reduce noise levels associated with demolition activities by 5 to 10 dBA. However, it is likely that intermittent hoe-ram operations to break up concrete structures could result in noise levels at sensitive receptors in excess of 70 dBA, even after mitigation. Consequently, this impact, although temporary, would be significant and unavoidable.*	Significant and Unavoidable
NOI-MZ-2: Construction activities proposed under the 2014 LRDP at the Mount Zion campus site would result in increases in ambient noise levels over the term of the exterior construction activities.	Potentially Significant	Implement **NOI-LRDP-1** and **NOI-LRDP-2** *Mitigation Measures NOI-LRDP-1 and 2 would reduce the severity of noise generated by construction and pile-driving activities and reduce the potential annoyance to nearby residents and others who could be disturbed by pile-driving to the extent feasible. If piles can be installed though drilling and cast in place measures then these mitigation measures would result in a less than significant impact.* *However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration (up to about six weeks in total), even after mitigation the noise level would likely exceed 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.*	Significant and Unavoidable
NOI-MZ-3: Demolition and construction activities proposed under the 2014 LRDP at the Mount Zion campus site could generate ground-borne vibration.	Less than Significant	None required	Less than Significant
NOI-MZ-4: Operational noise generated by development under the 2014 LRDP at the Mount Zion campus site could cause a long-term increase in ambient noise levels in the campus vicinity.	Less than Significant	None required	Less than Significant
Population and Housing			
No site-specific impacts			
Public Services			
No site-specific impacts			
Recreation			
No site-specific impacts			

TABLE 2-4 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MOUNT ZION IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Transportation and Traffic			
TRAF-MZ-1: Implementation of the 2014 LRDP on the Mount Zion campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities.	Potentially Significant	Implement **TRAF-LRDP-1**	Less than Significant
TRAF-MZ-2: Implementation of the 2014 LRDP on the Mount Zion campus site would increase traffic at intersections on the adjacent roadway network.	Less than Significant	None required	Less than Significant
TRAF-MZ-3: Implementation of the 2014 LRDP on the Mount Zion campus site would increase transit ridership demand.	Less than Significant	None required	Less than Significant
TRAF-MZ-4: Implementation of the 2014 LRDP on the Mount Zion campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-MZ-5: Implementation of the 2014 LRDP on the Mount Zion campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-MZ-6: Implementation of the 2014 LRDP on the Mount Zion campus site would increase loading demand.	Less than Significant	None required	Less than Significant
TRAF-MZ-7: Implementation of the 2014 LRDP on the Mount Zion campus site would increase parking demand.	Less than Significant	None required	Less than Significant
Utilities and Service Systems			
No site-specific impacts			

TABLE 2-5
SUMMARY OF 2014 LRDP PROPOSALS – MISSION CENTER IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures[6]	Level of Significance After Mitigation
Aesthetics			
AES-MC-1: The proposed office building and parking structure at the Mission Center campus site would not substantially degrade the existing visual character or quality of the campus site and its surroundings.	Less than Significant	None required	Less than Significant
AES-MC-2: The proposed office building and parking structure at the Mission Center campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area.	Potentially Significant	Implement **AES-LRDP-1**	Less than Significant
AES-MC-3: Construction of the proposed office building and parking structure at the Mission Center campus site could result in flood lighting sites during nighttime construction activities.	Potentially Significant	Implement **AES-LRDP-2**	Less than Significant
AES-MC-4: The proposed office building and parking structure at the Mission Center campus site could cast shadow on City park property protected by City Planning Code Section 295 or create street-level winds that could be hazardous to pedestrians in the area.	Less than Significant	None required	Less than Significant
Air Quality			
AIR-MC-1: Implementation of the 2014 LRDP at the Mission Center campus site would result in increased emissions of criteria air pollutants.	Potentially Significant	Implement **AIR-LRDP-1, AIR-LRDP-2**, and **AIR-LRDP-3**	Less than Significant
AIR-MC-2: Construction activities at the Mission Center campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents.	Less than Significant	None required	Less than Significant
AIR-MC-3: Operations at the Mission Center campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants.	Potentially Significant	Implement **AIR-LRDP-4**	Less than Significant
AIR-MC-4: Operations at the Mission Center campus site under the 2014 LRDP would increase emissions of TACs and increase health risks for nearby residents.	Less than Significant	None required	Less than Significant
Biological Resources			
None			

[6] This table references the mitigation measures in Table 2-1, as well as additional mitigation measures that apply to the Mission Center campus site.

TABLE 2-5 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION CENTER IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources			
CUL-MC-1: Construction of the proposed office building at the Mission Center campus site would not result in a substantial adverse change in the significance of a historical resource.	Less than Significant	None required	Less than Significant
CUL-MC-2: Construction of the proposed office building at the Mission Center campus site could cause substantial adverse changes to archaeological resources.	Potentially Significant	**CUL-MC-1: Archaeological Testing Program.** Based on a reasonable presumption that archeological resources may be present within the Mission Center campus site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried archaeological resources. UCSF shall retain the services of an archaeological consultant that meets Secretary of Interior standards for archaeology, and has knowledge of California prehistory and historical archaeology. The archeological consultant shall perform sufficient archival and background research to determine if an archeological testing program is appropriate. The archeological consultant shall prepare an archeological testing plan (ATP). The ATP shall identify the property types of the expected archeological resource(s) that potentially could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program will be to determine to the extent possible the presence or absence of archeological resources and to identify and to evaluate whether any archeological resource encountered on the site constitutes an historical resource under CEQA. If required, an archeological testing program shall be conducted in accordance with the approved ATP. After the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings. If based on the archeological testing program the archeological consultant finds that significant archeological resources may be present, the archeological consultant shall determine if additional measures are warranted. If feasible, the proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource. If avoidance is not feasible, additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. These measures would be undertaken to reduce to a less than significant level any potential effects on a significant archeological resource as defined in CEQA Guidelines Sect. 15064.5 (a)(c).	Less than Significant

TABLE 2-5 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION CENTER IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources (cont.)			
CUL-MC-2 (cont.)		**CUL-MC-2: Consultation with Descendant Communities.** On discovery of an archeological site associated with a specific Native American or other descendant group, an appropriate representative of the descendant group shall be contacted. Topics may include archeological field investigations, appropriate archeological treatment of resources, and, if applicable, interpretative treatment of the associated archeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group. **CUL-MC-3: Archaeological Monitoring.** The ATP (Mitigation Measure CUL-MC-1) will determine the need for archaeological monitoring. Should it be required before or after archaeological testing and/or data recovery, an archaeologist that meets the Secretary of the Interior's Standards and Guidelines for professional archaeologists will monitor ground-disturbing activities in areas proposed for ground disturbing activities associated with the building construction. The monitor will be empowered to temporarily halt construction in the immediate vicinity of a discovery while it is evaluated for significance. With the archaeologist's approval, work may continue on other portions of the site. If the discovery proves to be significant, additional measures will be implemented; these may include avoidance, capping beneath a layer of sterile soil, or data recovery through archaeological excavation. Should an archaeological artifact be discovered at the Mission Center campus site during project construction and excavation, pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" shall be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and UCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the project, representatives of UCSF and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate avoidance measures or other appropriate	

TABLE 2-5 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION CENTER IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cultural Resources (cont.)			
CUL-MC-2 (cont.)		mitigation (per CEQA Guidelines 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (Per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR44716)). Whether or not significant archeological resources are encountered during monitoring, the archeological consultant shall submit a written report of the findings.	
CUL-MC-3: Construction of the proposed office building at the Mission Center campus site could cause substantial adverse changes to paleontological resources.	Potentially Significant	Implement **CUL-LRDP-4**	Less than Significant
CUL-MC-4: Construction of the proposed office building at the Mission Center campus site could cause substantial adverse changes to human remains.	Potentially Significant	Implement **CUL-MC-1**, **CUL-MC-2**, and **CUL-LRDP-5**	Less than Significant
Geology, Soils and Seismicity			
Geology, soils and seismicity impacts at the Mission Center campus site are included in evaluation of overall 2014 LRDP effects as discussed under **Impact GEO-LRDP-1** and **GEO-LRDP-2** (see Table 2-1).	Less than Significant	None required	Less than Significant
Greenhouse Gas Emissions			
GHG-MC-1: Development at the Mission Center campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions.	Potentially Significant	Implement **GHG-LRDP-1**	Less than Significant
GHG-MC-1: Development at the Mission Center campus site under the 2014 LRDP would result in an increase in operational GHG emissions.	Less than Significant	None required	Less than Significant
Hazards and Hazardous Materials			
HAZ-MC-1: Implementation of the 2014 LRDP at the Mission Center campus site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools.	Less than Significant	None required	Less than Significant

TABLE 2-5 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION CENTER IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Hazards and Hazardous Materials (cont.)			
HAZ-MC-2: 2014 LRDP proposals located at Mission Center campus sites are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public.	Potentially Significant	Implement **HAZ-LRDP-1**	Less than Significant
Hydrology and Water Quality			
Hydrology and water quality impacts at the Mission Center campus site are included in evaluation of overall 2014 LRDP effects as discussed under **Impact HYD-LRDP-1** through **HYD-LRDP-3** (see Table 2-1).	Less than Significant	None required	Less than Significant
Land Use and Planning			
LU-MC-1: Implementation of the 2014 LRDP at the Mission Center campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required	Less than Significant
LU-MC-2: The proposed new office building at the Mission Center campus site would be compatible with height and bulk restrictions established by the City for this site.	Less than Significant	None required	Less than Significant
Noise			
NOI-MC-1: Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels over the term of the exterior construction activities.	Potentially Significant	Implement **NOI-LRDP-1**	Less than Significant
NOI-MC-2: Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels during pile-driving activities.	Potentially Significant	Implement **NOI-LRDP-2** *Mitigation Measure NOI-LRDP-2 would reduce the severity of noise generated by pile-driving activities and reduce the potential annoyance to nearby residents and others who could be disturbed by pile-driving to the extent feasible. If piles can be installed though drilling and cast in place measures then these mitigation measures would result in a less than significant impact.* *However, if geotechnical conditions exist such that impact or vibratory pile driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration, even after mitigation the increase in ambient noise level would likely exceed 10 dBA during pile-driving activities, resulting in a significant and unavoidable impact.*	Significant and Unavoidable

TABLE 2-5 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION CENTER IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Noise (cont.)			
NOI-MC-3: Construction activities proposed under the 2014 LRDP at the Mission Center campus site could generate ground-borne vibration.	Less than Significant	None required	Less than Significant
NOI-MC-4: Operational noise generated by development under the 2014 LRDP at the Mission Center campus site could cause a long-term increase in ambient noise levels in the campus vicinity of.	Less than Significant	None required	Less than Significant
Population and Housing			
No site-specific impacts			
Public Services			
No site-specific impacts			
Recreation			
No site-specific impacts			
Transportation and Traffic			
TRAF-MC-1: Implementation of the 2014 LRDP on the Mission Center campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during construction activities.	Potentially Significant	Implement **TRAF-LRDP-1**	Less than Significant
TRAF-MC-2: Implementation of the 2014 LRDP on the Mission Center campus site would increase traffic at intersections on the adjacent roadway network.	Less than Significant	None required	Less than Significant
TRAF-MC-3: Implementation of the 2014 LRDP on the Mission Center campus site would increase transit ridership demand.	Less than Significant	None required	Less than Significant
TRAF-MC-4: Implementation of the 2014 LRDP on the Mission Center campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-MC-5: Implementation of the 2014 LRDP on the Mission Center campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant
TRAF-MC-6: Implementation of the 2014 LRDP on the Mission Center campus site would increase loading demand.	Less than Significant	None required	Less than Significant

TABLE 2-5 (Continued)
SUMMARY OF 2014 LRDP PROPOSALS – MISSION CENTER IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Transportation and Traffic (cont.)			
TRAF-MC-7: Implementation of the 2014 LRDP on the Mission Center campus site would increase parking demand.	Less than Significant	None required	Less than Significant
Utilities and Service Systems			
No site-specific impacts			

CHAPTER 3
Project Description

3.1 Introduction

The University of California, San Francisco (UC San Francisco or UCSF) is one of ten campuses in the University of California (UC) system, and is the only UC campus devoted solely to the health sciences. UCSF's mission is to advance health worldwide through innovative health sciences education, research and patient care.

In support of its mission, UCSF is preparing a new Long Range Development Plan (LRDP) to guide future campus growth and development over a 20+ year planning horizon through the year 2035. UCSF currently occupies 8.04 million gross square feet[1] (gsf) in owned and leased space (excluding 1.62 million gsf in structured parking) in San Francisco. The LRDP plans for projected campus growth of approximately 2.39 million gsf by 2035. Phase 2 of the Medical Center at Mission Bay is not included in the total anticipated development under the LRDP because the 793,500 gsf Phase 2 Medical Center is anticipated to be constructed after the LRDP horizon year of 2035; however, the impacts associated with its construction and operation are evaluated in this EIR in order to provide a conservative analysis of future development of the entire Mission Bay campus site. Therefore, the projected campus growth analyzed in the EIR is approximately 3.18 million gsf. The main objectives of the LRDP are to:

- respond to the City and community context;
- accommodate UCSF's growth through 2035;
- ensure UCSF's facilities are seismically safe;
- promote environmental sustainability; and
- minimize facility costs.

3.2 Purpose of the LRDP

Each UC campus is required to periodically prepare a LRDP to guide campus growth and future physical development. The 2014 LRDP is a comprehensive physical land use plan and policy document that articulates a long-term development strategy for achieving the academic, clinical and research missions of UCSF through the year 2035. It contains objectives to guide decisions for future facilities to meet needs over the next 20 years and projects the quantities and uses of new building space needed during this time frame. Future individual construction projects will be

[1] Gross square feet (gsf), as used for UC facilities, is the sum of all floor areas, finished and unfinished, on all floors of an enclosed structure. It excludes spaces such as attics without flooring, mezzanines, exterior courts, and balconies.

evaluated for general conformity with the LRDP and considered for approval following a community process and any additional environmental analysis and public review required under CEQA. A project is generally found to be in general conformance with the LRDP if the proposed land use is consistent with the functional zones for that campus site and the LRDP objectives. The 2014 LRDP also includes *Community Planning Principles* which were produced in collaboration with the UCSF Community Advisory Group. These *Principles* formalize UCSF's commitment to communicate with neighbors regarding its space needs and potential future development, in order to identify potential community concerns that may arise from UCSF's physical development prior to the time that individual projects are brought forward for approval.

These are intended to aid UCSF in both complementing and advancing the planning priorities of the City and of its campus neighbors. The planning process for the 2014 LRDP is an opportunity for UCSF to assess its needs, establish goals for the future and provide a forum to discuss issues of mutual concern to UCSF, the City and County of San Francisco (City) and the communities surrounding UCSF's main campus sites. The LRDP serves as UCSF's request to the Regents for approval of proposed land use designations, program square footage and population growth during the LRDP planning horizon.

Land use designations are described in the LRDP using functional zones, which provide guidance for where certain types of uses are best located based on desired land use adjacencies and other geographic considerations. The LRDP includes six categories of functional zones: research, clinical, support, housing, open space, and parking. Functional zone maps are provided for the three main campus sites (Parnassus Heights, Mission Bay, and Mount Zion) to guide the location of future capital construction and infrastructure development.

The *1996 LRDP* focused on the acquisition of, and planning for, a major new site, which led to the development of the Mission Bay campus site, toward which UCSF has directed most of its capital resources in the intervening years. The 2014 LRDP contemplates investment in existing facilities and older sites, along with further development at Mission Bay.

In addition to land use designations, program square footage and population growth, the 2014 LRDP includes proposals, two of which would affect the campus as a whole – a Greenhouse Gas Reduction Strategy and an enhanced Transportation Demand Management Program; and a number of development proposals described in this chapter. The 2014 LRDP and its proposals are analyzed at a program level in this EIR, except as noted for those proposals that are analyzed at a project level for CEQA purposes.

This Draft EIR has been prepared in accordance with CEQA to analyze potential environmental impacts that could result from implementing the LRDP. Following public review, the EIR and LRDP will be finalized and submitted to the Regents for their review and approval. Upon adoption by the Regents, this LRDP will replace UCSF's 1996 LRDP, as amended.

3.3 Campus and Context

UCSF is an urban institution with campus sites throughout the City and some locations beyond the city limits comprising a total of approximately 198 acres, 61 of which make up the Mount Sutro Open Space Reserve at the Parnassus Heights campus site. UCSF occupies more than 8.04 million gsf of building space (excluding 1.62 million gsf of structured parking) in both owned and leased buildings. In addition to the three primary campus sites of Parnassus Heights, Mission Bay and Mount Zion, UCSF owns buildings at Mission Center (1855 Folsom Street), Laurel Heights (3333 California Street) and 654 Minnesota Street, which are predominately offices; animal care and research facilities at Hunters Point (830 and 831 Palou Street); a materiel management facility at Oyster Point (616 Forbes Boulevard in South San Francisco); and the Buchanan Dental Center (100 Buchanan Street). UCSF also leases more than a million square feet of space for a variety of purposes at numerous locations in San Francisco. **Figure 3-1** shows the main locations of UCSF-owned and leased sites in San Francisco.

UCSF has long-standing affiliations with San Francisco General Hospital and Trauma Center (SFGH), operated by the City; the San Francisco Veterans Affairs Medical Center (SFVAMC), operated by the U.S. Department of Veteran Affairs, where UCSF faculty provide patient care and conduct professional teaching and research programs; and with research entities such as the J. David Gladstone Institutes. While UCSF leases or otherwise occupies space in exchange for services at SFGH, UCSF does not lease or otherwise control any of the space at the SFVAMC. The remaining UCSF locations outside its main campus sites provide a variety of program space in buildings that are owned or leased by UCSF. UCSF also operates the UCSF Fresno Center for Medical Education and Research in the Central San Joaquin Valley, which provides training for doctors and other health professionals.

Unlike other UC campuses, UCSF has no undergraduate students, but instead has a small population of graduate and medical school students exclusively in health science related fields. The four schools are Dentistry, Medicine, Nursing and Pharmacy. UCSF also offers interdisciplinary graduate programs and numerous postdoctoral programs. UCSF's research enterprise conducts basic research in biology, biochemistry, and other disciplines related to health and disease; carries out translational medicine studies in epidemiology, behavioral, and social sciences; studies health care policies; and provides training in each of these fields. UCSF's clinical enterprise consists of the UCSF Health System—the UCSF Medical Center (the hospitals plus all clinics and physician practices operated by the Medical Center and the School of Medicine and UCSF Benioff Children's Hospital—and the UCSF Dental Center. The UCSF Medical Center is recognized as a world leader in health care. It consists of existing inpatient facilities at Parnassus Heights and Mount Zion, three new specialty hospitals under construction at Mission Bay (the new UCSF Benioff Children's Hospital facility at Mission Bay, plus the UCSF Betty Irene Moore Women's Hospital and the UCSF Bakar Cancer Hospital), and outpatient clinics at these sites and at numerous other locations throughout the City. UCSF Benioff Children's Hospital also entered into an affiliation agreement in January 2014 with Children's Hospital and Research Center Oakland (CHRCO), expanding UCSF's pediatric

SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-1

UCSF Main Locations

network in the Greater Bay Area. Mount Zion will become UCSF's outpatient hub by 2015 when existing Mount Zion inpatient uses will relocate to Mission Bay.

Support facilities are designed for staff, students and visitors, and include campus housing, retail, child care, recreation and fitness facilities and parking.

As an urban institution with multiple campus sites, UCSF is located in neighborhoods of highly varied building use, density and design. UCSF facilities and property adjoin residential, neighborhood commercial, research and development, industrial and mixed use districts. All campus sites lie within the urban framework of the city and are served by the city's street network in well-established neighborhoods. The surrounding urban character influences how UCSF buildings and open spaces respond to their context and contribute to the public realm.

In addition, UCSF influences and is influenced by the city in a number of other ways. For example, UCSF maintains a network of shuttles that use city streets to transport faculty, staff, students, patients and patient family members, and formal guests among the campus sites. The amount of parking and housing provided on campus sites affects off-site traffic and off-site housing demand. Many of UCSF's facilities, such as recreation and fitness, child care and conference centers, as well as all of its outdoor areas, are available for public use. Consequently, UCSF works closely with both neighbors and city staff when planning development.

3.4 LRDP Objectives

UCSF's 2014 LRDP contains five main campus-wide objectives to guide UCSF's physical development. The campus-wide objectives are discussed below, followed by campus site-specific objectives.

3.4.1 Campus-Wide Objectives

1. Respond to the City and Community Context

A. Coordinate with City agencies in areas of mutual interest

B. Acknowledge and respond to local zoning and height and bulk limitations to the extent possible

C. Design new buildings to be sensitive to the surrounding neighborhood and landscape, taking into account use, scale, and density

D. Incorporate pedestrian-friendly urban design principles to relate campus buildings to surrounding streetscape and neighborhoods

E. Consult with neighbors in proximity to UCSF's sites, guided by *Community Planning Principles* (see below).

F. Consider neighborhood and city-wide impacts related to UCSF's physical growth

2. Accommodate UCSF's Growth Through 2035

A. Meet physical needs for growth in research, clinical, and instructional programs at appropriate locations

B. Address the need for campus housing for students, postdoctoral scholars, house staff and junior and incoming faculty at main campus sites by constructing an adequate number of new units while taking into account financial feasibility and physical site constraints

C. Provide additional amenities such as retail, permanent child care facilities, recreation and fitness facilities, improved outdoor areas, and other support services to the extent feasible, to enhance the quality of campus life and the public realm

D. Locate programs and activities at campus sites where they are suitable and compatible with UCSF's missions, and best foster collaboration, accommodate interdependent programs and reinforce academic and operational relationships

E. Locate buildings in accordance with campus site-specific objectives, functional zones, and other LRDP elements related to open space, transportation, and utilities

F. Site and design buildings and develop open space in accordance with the universal planning and design principles contained in UCSF's *Physical Design Framework*

3. Ensure UCSF's Facilities are Seismically Safe

A. Ensure inpatient facilities meet state seismic requirements, as set forth in the *Alquist Seismic Safety Act* (SB 1953), by constructing and maintaining modern, seismically safe hospitals and facilities that will remain operational in the event of a major earthquake

B. Plan new facilities and implement improvements to comply with UC's *Seismic Safety Policy*, to ensure a seismically safe environment for UCSF patient, visitors, physicians and staff

C. Designate buildings for renovation, demolition, and replacement as warranted

4. Promote Environmental Sustainability

A. Optimize the use of existing facilities, sites and campus space through repurposing, renovation, densification and consolidation where appropriate

B. Reduce commute travel by providing additional campus housing

C. Reduce the number of UCSF remote locations by consolidation of owned and leased sites, thereby reducing travel between sites

D. Enhance the Transportation Demand Management program by developing adequate facilities and transportation demand reduction policies, to emphasize transportation alternatives that will lessen auto traffic in and around campus sites and to meet changing needs consistent with the City's *Transit First* policy

E. Continue to prioritize scarce parking for use by patients and essential healthcare providers

F. Facilitate growth in an environmentally responsible manner while reducing UCSF's greenhouse gas emissions in compliance with the UC *Sustainable Practices Policy*

and the goals of Assembly Bill 32 (AB32), the California Global Warming Solutions Act.[2]

5. Minimize Facility Costs

A. Invest in existing facilities to reduce future maintenance costs

B. Optimize use of existing space to forestall the construction of new buildings

C. Consolidate leases at owned facilities when appropriate and cost-effective

D. Eliminate remote campus sites

E. Target site expansion in areas that strengthen programmatic relationships, allowing resources and support to be shared

3.4.1.1 Objective 1: Respond to the City and Community Context

UCSF's owned and leased facilities are dispersed throughout San Francisco, a dense urban area with over 825,000 residents living in roughly 49 square miles. Because UCSF facilities are physically integrated into the fabric of the city, and UCSF provides clinical and research services that complement City services (e.g., community clinics) or are in facilities owned by the City (e.g., SFGH), there is close collaboration between the two entities. In 1987, the City and UCSF entered into a *Memorandum of Understanding*, or MOU to foster harmonious relations between the City and UCSF regarding the growth and development of UCSF facilities within the City's boundaries. The MOU describes the responsibilities of the City and UCSF for the oversight of their respective land uses and of the development, maintenance, and use of physical facilities, including methods of communication and consultation regarding UCSF's development.

UCSF consults with the City when planning new development, especially if improvements are being proposed within City rights-of-way adjacent to campus sites. The City coordinates with UCSF whenever changes are being planned in the public streets that run through or adjacent to campus sites. UCSF coordinates on a regular basis with the City of San Francisco Planning Department, Municipal Transportation Agency, Department of Public Works and Office of Community Investment and Infrastructure, among other departments and agencies.

It is UCSF's intent to adhere, to the extent practicable, to City zoning codes related to building use, height, and bulk limitations; floor area ratios; and parking requirements or restrictions. At Mission Bay, campus development is subject to agreements that were negotiated by UCSF with the City and the developer as part of the *Mission Bay Redevelopment Area North and South Plans*.[3] UCSF also works closely with surrounding community members in acknowledgement that UCSF affects neighbors in both positive and negative ways.

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2 UCSF is required to develop a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the California Global Warming Solutions Act of 2006 (AB32).

3 North plan: www.sfredevelopment.org/Modules/ShowDocument.aspx?documentid=775
South plan: www.sfredevelopment.org/Modules/ShowDocument.aspx?documentid=777

3.4.1.2 Objective 2: Accommodate UCSF's Growth Through 2035

To achieve UCSF's mission over the next 20 years, the LRDP proposes an additional 2.39 million gsf in owned and leased buildings, for a total of 11.56 million gsf across all of UCSF's sites. For the purposes of the EIR analysis, total campus growth in 2035 assumes that the Phase 2 Medical Center at Mission Bay at 793,500 gsf would be constructed during the LRDP horizon. Therefore, the projected campus growth analyzed in the EIR is 3.18 million gsf.

The largest proportion of the LRDP increase in capacity is proposed as clinical space, closely followed by research and campus housing space. A substantial amount of support space is proposed, along with a minor amount of instruction space. The LRDP proposes to accommodate most of this growth in new buildings at the Mission Bay campus site, where there is undeveloped land available and infrastructure planned that will support such growth. Additional space in new buildings is proposed at the Parnassus Heights, Mount Zion, and Mission Center campus sites. At Parnassus Heights and Mount Zion, some existing buildings would need to be demolished to allow for new uses.

New clinical space would be distributed among the Parnassus Heights, Mission Bay, and Mount Zion campus sites as appropriate to maintain or improve operational efficiency and enhance adjacencies with related research programs.

New research space would be developed at Mission Bay and at Mount Zion. The LRDP proposes clinical expansion at the Mount Zion campus site, as well as the demolition of several older buildings. A new research building is being considered at SFGH to provide seismically safe research areas for UCSF employees.[4] Didactic instruction is expected to remain primarily at Parnassus Heights, and new instruction space is expected there, as well as at Mission Bay and Mount Zion, to support overall growth. New campus housing would be developed at Parnassus Heights and at Mission Bay.

3.4.1.3 Objective 3: Ensure UCSF's Facilities are Seismically Safe

Many of the LRDP proposals for building renovation and demolition are in response to UCSF's need to ensure that its facilities are seismically safe.

UC Seismic Safety Policy

The purpose of the UC *Seismic Safety Policy*[5] is to provide an acceptable level of earthquake safety, to the maximum extent feasible by present earthquake engineering practice and university resources, for students, employees and the public who occupy university buildings and other facilities. Feasibility is determined by weighing practicality and the cost of protective measures against severity and probability of injury resulting from seismic occurrences.

[4] Although the new building is discussed in the LRDP, UCSF does not currently own any space at SFGH, and environmental review for the new building at SFGH would occur separately from the LRDP EIR.

[5] http://policy.ucop.edu/doc/3100156/SeismicSafety3100155

In 2012, UCSF updated the seismic evaluations of buildings that had already been assessed, and evaluated those that had not, using a new rating system. This system has seven levels of earthquake damageability, with level V being "Serious," level VI "Severe," and level VII "Dangerous." The highest-priority buildings (those rated level V and above) identified for seismic retrofit, removal, or other appropriate action are:

- **Parnassus Heights:** 735 and 374 Parnassus Avenue, which have since been removed; Clinical Sciences, for which retrofit plans are underway; and UC Hall and the Faculty Alumni House (745 Parnassus Avenue), which are proposed to be retrofitted
- **Mount Zion:** the Hellman and Brunn buildings which are planned for demolition, and the building at 2255 Post Street which is proposed to be retrofitted or demolished
- **SFGH:** five City-owned buildings in which UCSF leases space; UCSF is considering a replacement building

California Senate Bill 1953

In 1994, Senate Bill (SB) 1953 was passed by the California legislature as an amendment to the *Alquist Seismic Safety Act*. The law was in direct response to the Northridge earthquake, which damaged many hospitals in the Los Angeles area. SB 1953 requires hospitals to meet progressively higher levels of seismic safety by retrofitting or replacing facilities that do not meet the newer standards. The intent of the law is to ensure that hospitals are structurally sound and are able to offer uninterrupted service after an earthquake.

Moffitt Hospital and the hospital at Mount Zion have a Structural Performance Category (SPC) rating of SPC-2.[6] These buildings do not significantly jeopardize life, but may not be repairable or functional following strong ground motion. To comply with SB 1953, UCSF is building a new hospital at Mission Bay (opening in February 2015), into which inpatient facilities from both Mount Zion and some from Parnassus Heights will relocate. To meet the 2030 deadline, rather than undergoing an extensive, expensive, and extremely disruptive retrofit of Moffitt Hospital, the UCSF Medical Center plans to build a New Hospital Addition to Long Hospital, which does comply with the higher seismic standards, and to decommission Moffitt Hospital for clinical uses. This addition would be built on the site of the Langley Porter Psychiatric Institute, which is proposed to be demolished.

3.4.1.4 Objective 4: Promote Environmental Sustainability

The University of California has expressed a commitment to responsible stewardship of its physical resources and to demonstrating leadership in sustainable practices. To that end, the UC President has adopted a detailed *Sustainable Practices Policy*[7] that establishes goals for the individual campuses in nine areas of sustainable practices: green building, clean energy,

6 Buildings with SPC-2 ratings must be brought into compliance with the structural provisions of the Alquist Hospital Facilities Seismic Safety Act, its regulations or its retrofit provisions by January 1, 2030, or be removed from acute care service. http://www.oshpd.ca.gov/FDD/seismic_compliance/SB1953/SeisPerfRatings-v3-2.html#SPC2

7 policy.ucop.edu/doc/3100155/Sustainable%20Practices

transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice and sustainable water systems. In addition, UCSF is striving to reduce the generation of hazardous materials and the use of toxic cleaning and other products. UCSF's Living Green program is intended to inform and engage the campus and medical center community to act more sustainably.

As part of implementing the UC *Sustainable Practices Policy*, UCSF has developed a Climate Action Plan, a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the *California Global Warming Solutions Act of 2006* (AB 32),[8] and also achieving climate neutrality as soon as possible thereafter.

In 2007, UCSF signed the *American College and University President's Climate Commitment* (ACUPCC)[9] to complete an emissions inventory, set target dates and interim milestones for becoming climate-neutral,[10] take steps to reduce GHG emissions and prepare public progress reports. UCSF GHG emissions reduction goals pertain to emissions of the six Kyoto greenhouse gasses originating from sources specified in the ACUPCC.[11] The sustainability policy specifies that these goals will be pursued while maintaining the primary research and education mission of the University.

As part of the LRDP, UCSF is updating its portfolio of GHG reduction strategies (see Appendix D). These strategies include the following: campus infrastructure improvements, renewable energy facilities construction, renewable energy purchase, equipment retrofits, operational energy efficiencies, new construction energy efficiency and measures that can be applied to individual projects with the goal of incrementally reducing UCSF's overall GHG emissions over the LRDP horizon.

The UC President has set a goal for UC to become a zero net energy consumer by 2025 and use only clean energy.[12] UC is now working on the President's initiative to be the first university to achieve net energy and carbon neutrality.

To grow as sustainably as possible, UCSF will minimize new development by reinvesting in existing facilities and utilizing them more efficiently. This will be accomplished by implementing a new campus space policy to ensure optimal use of space, and by increasing the density of occupants.

To promote sustainable transportation and minimize traffic impacts, UCSF proposes to seek opportunities to consolidate its campus population to fewer locations by terminating leases (or vacating spaces upon expiration of leases) and vacating sites in more remote locations, which will

8 www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf
9 www.presidentsclimatecommitment.org/about/commitment
10 Climate neutrality for UCSF is defined as the University having a net-zero impact on the Earth's climate; it will be achieved by minimizing GHG emissions as much as possible and using carbon offsets or other measures to mitigate the remaining GHG emissions (*UCSF Climate Action Plan*, December 2009).
11 The six greenhouse gases identified in the Kyoto Protocol/ACUPCC are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons.
12 http://sustainability.universityofcalifornia.edu/documents/carbon-neutrality2025.pdf

reduce the amount of private vehicle and UCSF shuttle traffic throughout the day between campus sites. In addition, UCSF proposes to build additional campus housing at the Parnassus Heights and Mission Bay campus sites to reduce commute travel; implement more robust Transportation Demand Management (TDM) measures; reduce truck deliveries to campus sites; prioritize scarce parking for use by patients and essential healthcare providers; and keep parking-space-to-building-space ratios low.

3.4.1.5 Objective 5: Minimize Facility Costs

UCSF proposes to control maintenance costs by investing in existing facilities; limit new construction by using existing and future space more efficiently; minimize the cost of building leases by moving programs into UCSF-owned buildings and consolidating leases; and avoid expensive investment and operational costs by reducing the number of remote campus sites.

3.4.2 Campus Site-Specific Objectives

1. Parnassus Heights

A. Continue to promote excellence and leadership in health science education, maintaining the Parnassus Heights campus site as the central location for classroom instruction.

B. Ensure that adequate space is provided to foster collaboration and to facilitate the inter-dependence and connectivity for operational efficiency and effectiveness of instruction, clinical, research and support uses in close physical proximity to each other.

C. Ensure that Long Hospital and the New Hospital Addition have adequate clinical and administrative support and are aligned with education, research and specialized care programs and support that remain at the campus site.

D. Provide additional campus housing and improve campus life amenities including outdoor space.

E. Strive to better achieve the remaining unfulfilled components of the 1976 Regents' Resolution by reducing space, minimizing population growth, and improving transportation-related programs.

F. Preserve the Mount Sutro Open Space Reserve as permanent open space, and serve as the steward of the Reserve by maintaining and expanding the trail system and by ensuring the safety of visitors and neighboring structures.

2. Mission Bay

A. Accommodate the majority of UCSF's growth through the LRDP horizon.

B. Allow for the consolidation of some of UCSF's leased and remote sites to Mission Bay to reduce operating and occupancy costs.

C. Continue UCSF's commitment to excellence, innovation and collaboration as the university grows and expands the research and education programs at Mission Bay, and continue to support the new UCSF Medical Center at Mission Bay.

D. Strategically expand the existing North Campus at Mission Bay by maximizing the development capacity under the 2014 LRDP while increasing efficiency by aligning and locating interdependent research and clinical teams and joint endeavors at the Mission Bay campus site.

E. Complete Phase 1 of the Medical Center on the South Campus and consolidate specialized services associated with women's, children's and cancer services.

F. Expand campus housing and child care on the North Campus and continue to develop the campus site with new other campus life amenities, such as retail, and outdoor recreation and fitness facilities.

G. Relocate programs from Parnassus Heights to Mission Bay, if they complement programs already located at Mission Bay and are not required to be at Parnassus Heights to function efficiently.

3. Mount Zion

A. Convert the Mount Zion campus site into a patient-friendly ambulatory care center to meet existing and future projected outpatient needs.

B. Address seismically compromised and obsolete buildings.

C. Develop new facilities to accommodate programmatic needs.

3.5 Plan Elements

The four required elements of an LRDP are: (1) land use, (2) open space, (3) circulation, transportation, and parking, and (4) utilities and other infrastructure. The land use element includes functional zone maps that illustrate the general location of proposed uses, which serves to guide future decisions as to where to locate buildings and uses. The open space element indicates the locations of open space, and how it relates to campus buildings and the campus as a whole. The circulation and transportation element considers how people get to and from and around campus sites using various modes of travel, and includes parking. The utilities and other infrastructure element addresses significant utility system or infrastructure facilities needed to accommodate growth. These elements are described in general terms below.

3.5.1 Land Use

UCSF building space is occupied for various institutional uses according to the following major categories:

- **Instruction**, including classrooms, teaching laboratories, seminar rooms, and academic offices
- **Research**, including research conducted in laboratories and offices
- **Clinical**, including space for services provided to patients in hospitals or clinics such as inpatient rooms, surgical rooms, radiation services, diagnostic laboratories, and treatment rooms, and for functions that directly support patient care such as nursing stations, administrative offices, and conference rooms

- **Support**, consisting of the following types of uses:
  - *Academic Support*, including library and animal care space
  - *Academic and Campus Administration*, including all administrative space at the department, school, and campus levels: deans' and directors' offices, conference rooms, copying facilities, etc., as well as non-academic support space such as police, personnel, and accounting offices
  - *Campus Community*, including campus amenities such as recreation, fitness, child care, conference centers, food service, and retail
  - *Logistics*, including space devoted to the delivery of materials and physical plant space such as machine shops, service yards, laundry services, utilities, and storage
- **Housing,** including residential facilities for students, postdoctoral scholars, clinical residents, and faculty

3.5.1.1 Functional Zones

Land use designations are described in the LRDP using functional zones, which provide guidance on where certain types of uses are best located, based on desired land use adjacencies and other geographic considerations. The LRDP includes six categories of functional zones: research, clinical, support, housing, open space, and parking. For program and operational efficiencies, clinical and research functional zones tend to cluster in an area. For circulation reasons, parking functional zones are typically situated on campus edges. To create an active and inviting campus setting, housing, open space and support zones are located throughout the campus sites. **Table 3-1** describes the land use functional zones for UCSF's main campus sites at Parnassus Heights, Mission Bay, and Mount Zion, and the predominant and secondary uses that are permitted within each zone. The space categories above are generally consistent with these functional zones, except instruction space, which is distributed throughout the research, clinical, and support zones.

3.5.2 Open Space

UCSF's open spaces vary widely in size and character. The Mission Bay campus site has a great deal of open space, including Koret Quad and open space plazas at all building entrances; open space and connectivity has been integral to every plan and design for the campus site. The Fourth Street Public Plaza, which is under construction at the UCSF Medical Center at Mission Bay campus site, will include landscaped areas, seating, an amphitheater, multi-use promenade, and bicycle paths. The 61-acre Mount Sutro Open Space Reserve (Reserve), an urban forest under the stewardship of UCSF, is located at the Parnassus Heights campus site and is open to the public; it includes a popular trail system for hiking and biking. The Recreation and Open Space Element of the *San Francisco General Plan* discusses the Green Connections Network, which identifies two trail systems—the Crosstown Trail and the Ridge Trail—that incorporate some of the trails of the Reserve. Otherwise, however, UCSF's open spaces are mainly limited to relatively small courtyards and plazas surrounded by campus buildings, and some tree-lined streets and landscaped areas. These open spaces and landscaped areas complement and provide valuable opportunities for people to relax, socialize, eat lunch, study, play, heal, or otherwise be outdoors.

TABLE 3-1
PREDOMINANT AND SECONDARY USES IN FUNCTIONAL ZONES

Functional Zone	Predominant Use	Secondary Uses
Research	• Research activities	• Offices • Clinics • Instruction space • Support uses • Open space • Parking
Clinical	• Clinical activities	• Offices • Research activities • Instruction space • Support uses • Open space • Parking
Support	• Offices • Food services • Retail • Child care • Recreation and fitness • Conference space • Library • Police services • Animal care • Utilities	• Instruction space • Housing • Open space • Parking
Housing	• Campus housing	• Support uses • Open space • Parking
Open Space[1]	• Major open space areas	• Recreation and fitness • Retail • Parking
Parking	• Structured parking	• Support uses • Open space • Surface Parking

[1] The area designated as Mount Sutro Open Space Reserve shall be kept free of any permanent structures or facilities except footpaths and appropriate landscape construction intended to enhance its use as a natural area.

Under the 2014 LRDP, UCSF is committed to improving existing open space and creating new open space areas as part of new building proposals. These will be improved or developed in accordance with the universal planning and design principles in the UCSF 2010 *Physical Design Framework.* Because of the lack of outdoor recreation and fitness facilities, one priority is a sports field, which can best be accommodated at the Mission Bay campus site.

3.5.3 Circulation, Transportation and Parking

UCSF proposes to continue to enhance its TDM program and encourage its faculty, staff and students to use alternative modes of travel to driving alone to campus sites. Growth would require some additional parking, but consistent with UCSF's parking policy, parking would be prioritized for patients and essential healthcare providers. The LRDP also proposes to reduce congestion and truck deliveries to campus sites through transportation improvement measures. A critical transportation goal is to reduce UCSF's greenhouse gas emissions.

Direct, aesthetic, and experiential pedestrian connectivity is stressed in the UCSF 2010 *Physical Design Framework* and will be considered as buildings and open space are developed. The needs of pedestrians on public streets that pass through campus sites and have UCSF shuttle and Muni stops, particularly Parnassus Avenue at Parnassus Heights, Fourth Street at Mission Bay, and Sutter and Divisadero Streets at Mount Zion, would be given the greatest consideration.

3.5.4 Utilities and Other Infrastructure

Under the 2014 LRDP, UCSF intends to invest considerable financial resources in improving and expanding its infrastructure. This would include utilities within and between existing buildings, as well as utilities to serve new structures. A goal of the LRDP is to shift away from equipping new buildings at the Mission Bay campus site with utilities that could be incorporated more efficiently in a central utility plant, and to install redundant utility loops at the Mission Bay and Parnassus Heights campus sites to increase service reliability.

3.6 Projected Growth

As explained in detail below, this LRDP would provide for an additional 2.39 million gsf of space through 2035 if all the planned capacity were to be developed within that time frame. As noted above, for the purposes of the EIR analysis, campus growth includes the 793,500 gsf Phase 2 Medical Center at Mission Bay. Thus, the total projected campus growth analyzed in the EIR is 3.18 million gsf.

The LRDP is intended to serve as a general guide to the physical development of the campus. The LRDP does not propose a commitment to any specific project, construction schedule or funding priority.

3.6.1 Existing Space and Buildings Under Construction

UCSF currently occupies approximately 8.04 million gsf in owned and leased space at all of its campus sites in San Francisco, excluding approximately 1.62 million gsf in structured parking. In addition to this, approximately 1.13 million gsf of new construction is underway at Mission Bay: the Phase 1 UCSF Medical Center at Mission Bay, scheduled for completion in 2015, and Mission Hall, scheduled for completion in 2014.

Figure 3-2 shows the allocation of all existing UCSF-owned and leased space at all sites in San Francisco among the major space categories. As can be seen in Figure 3-2, there are substantial amounts of support, research and clinical space, with the remaining space divided roughly equally between instruction and housing.

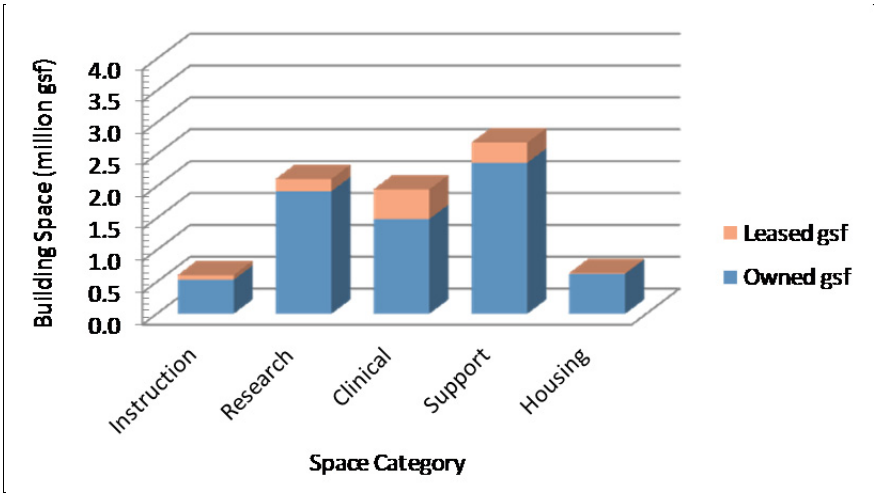

Figure 3-2
Existing Space at All Sites in 2014

3.6.2 LRDP Proposed Space Program

The LRDP proposes an additional 2.39 million gsf, for a total of 11.56 million gsf, in owned and leased buildings across all of UCSF's sites through 2035. The allocation of this space between instruction, clinical, research and support uses is described below. All square footage proposed under the LRDP is subject to funding availability and CEQA evaluation as individual projects arise for consideration.

Although a major portion of the additional space would be accommodated in new buildings on campus sites, some of the need for space would be met by improving utilization of existing vacant or underutilized space, consolidating existing functions or leases, converting existing space to other uses to meet changing priorities (e.g., converting office space at the Parnassus Heights campus site to housing and renovating Moffitt Hospital to provide hospital support areas after 2030).

3.6.2.1 Instruction

The proposed LRDP space program for instruction space is approximately 104,000 gsf over the existing amount of 608,000 gsf. This number is based on projected student enrollment, UCSF's financial ability to renovate academic space to accommodate the increase in the number of students, current classroom utilization rates and other factors.

Figure 3-3 illustrates the number of students projected to be enrolled in each of the four UCSF schools between 2013 and 2035. A total increase of 13% in enrollment is expected by 2025. For purposes of the LRDP, it is assumed that enrollment after 2025 would remain relatively flat because enrollment projections beyond 2025 would be highly speculative.

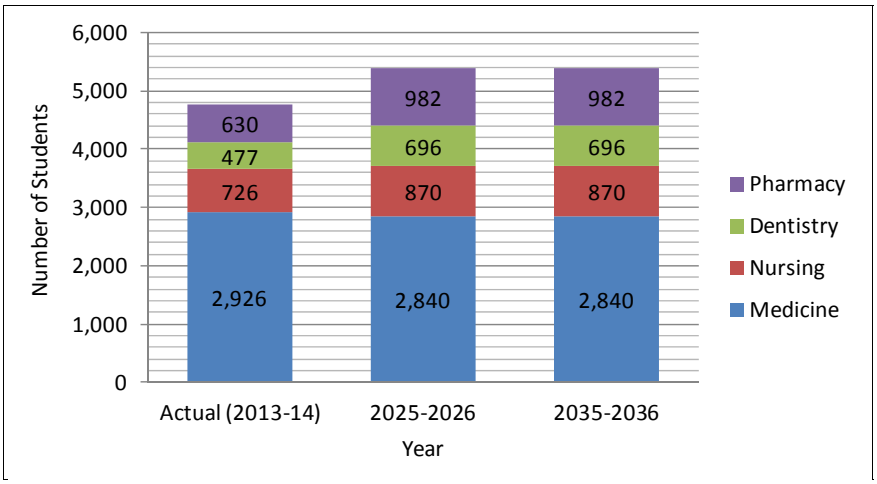

Figure 3-3
Existing and Projected Enrollment

3.6.2.2 Research

The existing amount of research space is about 2,116,800 gsf. The proposed LRDP research space[13] program is 951,500 gsf over the existing amount, for a 2035 total of 3.07 million gsf. This includes space for wet and dry research laboratories, translational research, clinical trials and administrative and technology support. It is assumed that growth in research space need would be met in existing facilities through 2021. Between 2021 and 2030, an annual growth rate of 2.5% in research space need is assumed. Due to the uncertainty in funding, and due to industry trends that could affect research space needs and configurations, it is too speculative to assume additional space or faculty growth beyond 2030. It is assumed that research growth would occur at Mission Bay, both in support of the existing research programs and where future programs would align with the new Medical Center that is currently under construction. Also, additional research space could be developed at Mount Zion.

3.6.2.3 Clinical

The existing amount of clinical space is about 1,952,000 gsf. Driving the need for additional clinical space, the inpatient space need is expected to increase by 23% by 2035. This projection is based on the current hospital average daily census, historical growth, and staff estimates for growth in pediatric, obstetric and other adult programs. It reflects plans to backfill space vacated by moves to Mission Bay in Moffitt Long Hospital at Parnassus Heights and the hospital at Mount Zion after the new Medical Center at Mission Bay opens in early 2015, as well as in the new hospital addition planned at Parnassus Heights by 2030 to respond to the seismic deadline for inpatient facilities. Clinical space growth is expected to be highest in the near term with the opening of the Medical Center at Mission Bay, followed by less growth thereafter with the construction of the new hospital addition at Parnassus Heights by 2030. Between 2030 and 2035,

[13] Research space does not include 18,000 gsf of research support functions and 79,200 gsf for animal care space that are included in the academic support category.

the inpatient average daily census is projected to grow by about 4% and would be accommodated in the new hospital addition at Parnassus Heights and the Medical Center at Mission Bay. Due to the financial resources that will be needed to complete the new hospital addition at Parnassus Heights, it is most likely that the Phase 2 Medical Center at Mission Bay will be built after 2035, beyond the LRDP Horizon. However, for purposes of the EIR analysis, it is assumed that it would be constructed prior to 2035. Outpatient volume is expected to grow by 72% by 2035.[14] Including both inpatient and outpatient space, and assuming the Phase 2 Medical Center is constructed prior to 2035, the total increase in the clinical space[15] program at LRDP horizon is 1,869,600 gsf.

3.6.2.4 Support

The proposed LRDP support space program is projected to be about 709,400 gsf. This growth includes plans to expand child care, retail, recreation and fitness and conference space but excludes structured parking.[16]

3.6.2.5 Housing

The projected LRDP growth of 667,600 gsf for housing is based on the potential capacity for new housing at Parnassus Heights and Mission Bay, and non-residential uses that could be converted to housing at Parnassus Heights.

3.6.2.6 Parking

Surface parking is proposed to be accommodated within each functional zone as an allowable secondary use. Structured parking (i.e., garages) is proposed in the Parking functional zone and is generally proposed to be located at the periphery of main campus sites to enable easier pedestrian movement within the campus core. Smaller garages would be allowed in non-parking zones if built as part of a larger structure such as faculty housing. A summary of existing and proposed parking facilities is shown in Table 4-18 of the Transportation Impact Study (Appendix G).

3.6.2.7 Total Space at LRDP Horizon

Total UCSF owned and leased space across all UCSF sites if all projects in the 2014 LRDP were implemented would be about 11.56 million gsf by 2035, which includes 1.13 million gsf of building space currently under construction at the Mission Bay campus site. This would be an increase of about 3.52 million gsf over the existing 8.04 million gsf; therefore, future growth under the LRDP by 2035 would be 2.39 million gsf.

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14 This projection is based on compound annual growth rates of 3% through 2020, 2% from 2021 to 2030 and 1% from 2031 to 2035.

15 Clinical space includes 308,000 gsf of new inpatient space at Parnassus Heights, 172,700 gsf of new outpatient space at Parnassus Heights and Mount Zion, and 169,300 gsf of new academic office space at Parnassus Heights (150,100 gsf in UC Hall and CSB) and Mount Zion (19,200 gsf). Not included in Clinical space are office and outpatient space need at Mission Bay that will be accommodated in Mission Hall and in the Medical Center outpatient building to be built by 2015 and 2020, respectively.

16 Some of this space need was determined by applying multipliers to base space needs (e.g., research), or by assuming a constant ratio to the amount of existing space (e.g., logistics).

As assumed for purposes of the EIR, construction of the 793,500 gsf Phase 2 Medical Center at Mission Bay during the LRDP horizon would result in total space of about 12.36 gsf by 2035.

The distribution of total projected space in 2035 is shown in **Figure 3-4** below. **Figures 3-5** and **3-6** compare the existing and future distributions of building space by use category.

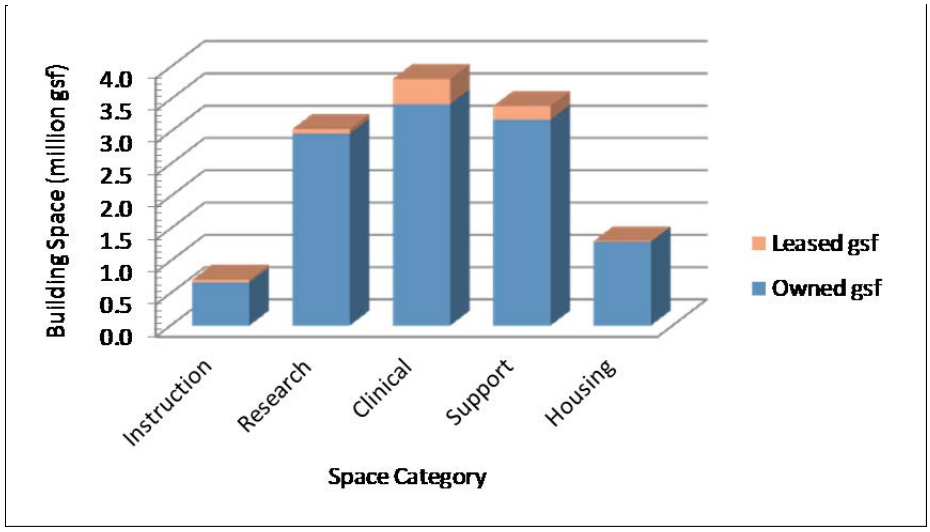

Figure 3-4
Proposed Space at All Sites in 2035

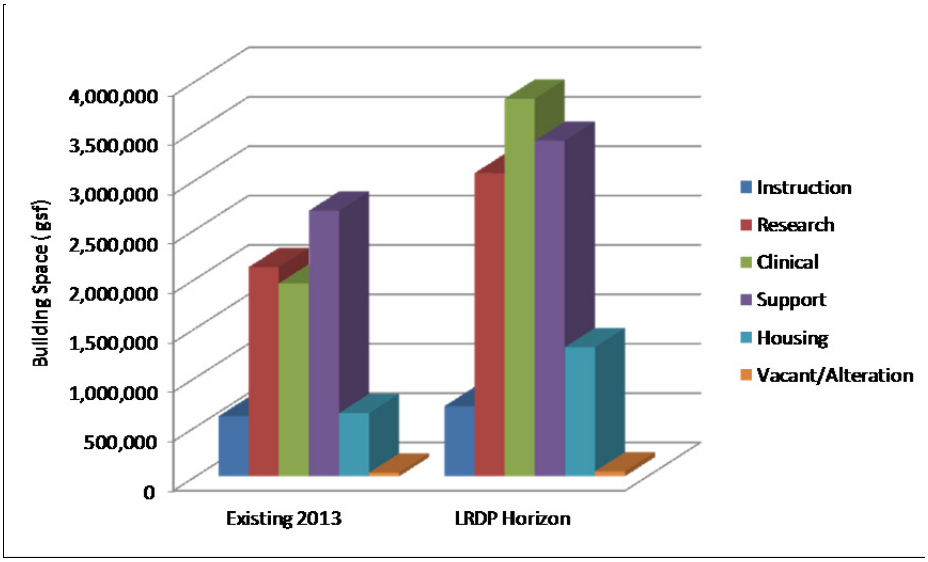

Figure 3-5
Space by Use Category,
Existing and LRDP Horizon

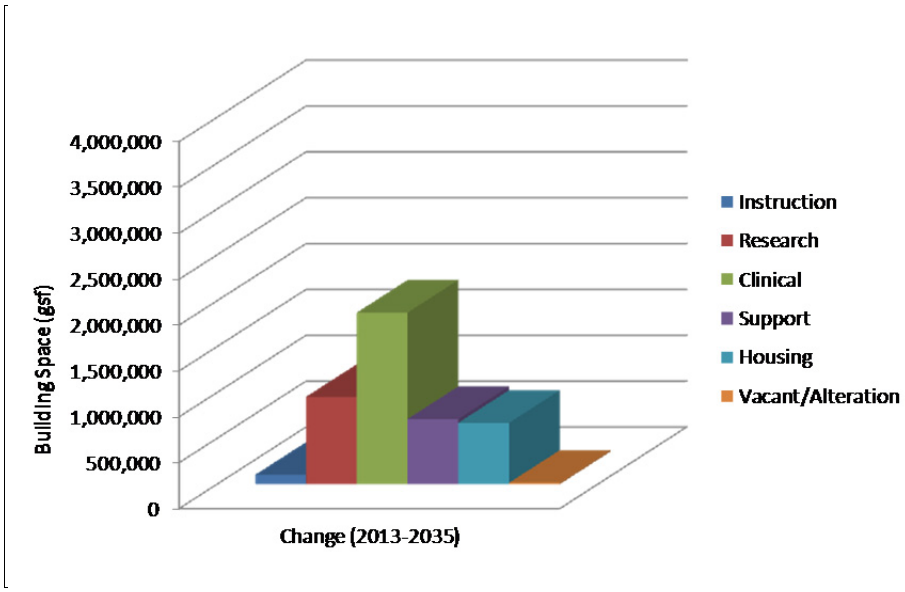

Figure 3-6
Change in Space by Use Category,
Existing to LRDP Horizon

The summary of existing and total projected gsf at LRDP horizon in 2035 is shown below in **Table 3-2**.

TABLE 3-2
SUMMARY OF TOTAL UCSF EXISTING AND LRDP HORIZON GSF

Type of Space	Existing[1,2] Total gsf	LRDP Horizon 2035 Total gsf
Instruction	607,500	708,800
Research	2,116,800	3,068,300
Clinical	1,952,000	3,821,600
Support		
Academic Support	414,400	569,600
Academic/Campus Admin	1,487,000	1,790,800
Campus Community	385,000	473,700
Logistics	400,300	562,600
Support Subtotal	2,687,300	3,396,700
Housing	638,500	1,306,100
Vacant/Alteration	36,200	49,700
Total	**8,038,300**	**12,351,200**

1 Excluding 1,618,100 gsf of structured parking (653,700 gsf at Parnassus Heights; 176,500 gsf at Mount Zion; 680,500 gsf at Mission Bay; and 107,400 at Laurel Heights)
2 Total leased space assumed to be reduced by approximately 300,000 gsf from 1,049,000 gsf at LRDP horizon
3 Includes the 793,500 gsf Phase 2 Medical Center at Mission Bay.
4 Includes Mission Hall and the Phase 1 Medical Center at Mission Bay, both of which are currently under construction on the Mission Bay campus site.

3.6.3 Existing and Projected Population

The estimated UCSF population across all sites in 2013, and upon full implementation of the LRDP space program, is shown below in **Table 3-3**. The projected population at LRDP horizon includes growth associated with the Phase 2 Medical Center at Mission Bay. The total population across all campus sites, including patients and visitors, would increase by approximately 17,000.

TABLE 3-3
EXISTING AND PROJECTED UCSF POPULATION

	Existing (2013)	Projected Population at LRDP Horizon (2035)[8]	Total Change
Students[1]	4,760	5,390	630
Faculty[2]	3,170	4,460	1,290
Staff[3]	16,440	25,530	9,090
Unpaid Faculty[4]	4,920	5,340	420
Postdoctoral Scholars[5]	1,550	1,550	--
Patients[6]	3,560	6,050	2,490
Visitors[7]	5,020	8,100	3,080
Total	**39,420**	**56,420**	**17,000**

1 Students as of Fall 2013; includes all Clinical Residents
2 Does not include volunteer faculty and community health providers
3 Full-time equivalent staff as of Fall 2013
4 The majority of unpaid faculty not physically present on campus daily
5 Includes clinical fellows
6 Average daily inpatient population and outpatient visits to outpatient care clinics, private practice physicians, dental clinics and other referred visits.
7 Includes visitors to patients, faculty, students and staff; conference center visitors; participants in continuing education and recreation programs; volunteers; children at child care facilities; and vendors.
8 Includes population associated with Mission Hall and both Phase 1 and Phase 2 of the Medical Center at Mission Bay.

3.7 LRDP Proposals

The following campus-wide proposals are part of an ongoing planning process conducted by UCSF for the LRDP. Revisions and/or additions to these programs may be made during the LRDP planning process.

3.7.1 Greenhouse Gas Reduction Strategy

The University of California is committed to responsible stewardship of its physical resources and to demonstrating leadership in sustainable practices. To that end, the Regents have adopted a detailed Policy on Sustainable Practices.[17] As part of implementing the policy, UCSF prepared a Climate Action Plan, a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the California Global Warming Solutions Act of 2006 (AB 32).

17 http://policy.ucop.edu/doc/3100155

As an intermediate target, UCSF also has the goal of reducing GHG emissions to 2000 levels by 2014; and intends to achieve climate neutrality[18] as soon as possible after achieving the 2014 and 2020 reduction targets.[19] UCSF GHG emissions reduction goals pertain to Scope 1 and Scope 2 emissions[20] of the six Kyoto greenhouse gasses originating from sources specified in the American College and University Presidents Climate Commitment[21] as well as Scope 3 emissions[22] from business airline travel and commuting by UCSF staff and students. The Regents Policy specifies that these goals will be pursued while maintaining the primary research and education mission of the University.

UCSF has included its proposed GHG Reduction Strategy in the LRDP to provide CEQA analysis of the GHG Reduction Strategy and future development activities under the LRDP, pursuant to the streamlining provisions of CEQA Guidelines Section 15183.5. The GHG Reduction Strategy updates UCSF's portfolio of GHG reduction strategies in categories that pertain to physical development under the LRDP. These categories include the following: campus infrastructure improvements, renewable energy facilities construction, renewable energy purchase, equipment retrofits, operational energy efficiencies, and measures that can be applied to individual projects with the goal of incrementally reducing UCSF's overall GHG emissions over the LRDP horizon. UCSF has prepared and previously published comprehensive emissions inventories covering Scope 1 and 2 for the 1990 baseline, 2000 interim year, year 2008, year 2011, year 2012 and future projections (2014 and 2020).

UCSF reported its 2012 Scope 1 and Scope 2 emissions to The Climate Registry (TCR). Past inventories for 1990 and 2008 were revised during the development of the GHG Reduction Strategy due to discovered data errors (1990) and a change in the UCSF inventory organizational boundary starting in 2012.[23] UCSF total emissions (including Scope 3 emissions from business air travel and commuting) were 109,817 metric tons of carbon dioxide equivalents (CO_2e) in 1990; 156,339 metric tons CO_2e in 2008; and 150,258 metric tons CO_2e in 2012. UCSF's 2012 emissions make up about 2.8% of the City of San Francisco's estimated total emissions of 5.3 million metric tons of CO_2e/year.

18 Climate neutrality is defined as the University having a net zero impact on the Earth's climate, and will be achieved by minimizing GHG emissions as much as possible and using carbon offsets or other measures to mitigate the remaining GHG emissions (UCSF Climate Action Plan, December 2009).

19 CA Executive Order S-3-05 calls for reducing GHG emissions to 80% below 1990 levels by 2050.

20 Scope 1 (Direct Emissions), includes stationary combustion such as boilers, hydrofluorocarbon (HFC) refrigerant use, or combustion of fuels in UCSF-owned vehicles; Scope 2 (Indirect Emissions) includes emissions from purchased electricity for UCSF facilities (UCSF Climate Action Plan, December 2009).

21 The six greenhouse gases identified in the Kyoto Protocol/ACUPCC are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons.

22 Scope 3 emissions are indirect emissions (other than those associated with purchased electricity or steam) that are a consequence of the activities of UCSF, but occur from sources not owned or controlled by UCSF.

23 As explained in the GHG Reduction Strategy, starting with the 2012 GHG inventory reported to TCR, UCSF delineates its organizational boundary using the financial control criterion. Under financial control, UCSF reports emissions from facilities and sources that are wholly-owned, and from facilities and sources that are partially-owned but where UCSF retains financial control (e.g., through a capital or financial lease, or where majority ownership establishes management control). Due to this organizational boundary change, the boundaries of inventories pre-dating 2012 were adjusted to enable direct comparison with current and future inventories. Essentially, emissions associated with leased facilities were removed from the pre-2012 inventories.

The California Air Resource Board has proposed an efficiency threshold of 4.6 metric tons of CO_2e /year per service population (residents plus employees) for the State in order to meet the year 2020 goal of AB 32. UCSF per capita emissions for 2013 were 5.5 metric tons of CO_2e/year, slightly lower than the 6.5 metric tons of CO_2e/year per capita emissions for the City of San Francisco.

UCSF currently has one facility – the Parnassus Central Utility Plant – that is subject to Cap-and-Trade rules under AB 32. UCSF has pre-purchased Cap-and-Trade allowances for this facility for future years. UCSF has also committed to purchasing additional offsets to meet its 2014 interim Sustainable Practices policy goal. Despite the addition of significant space and population over the life of the LRDP, UCSF anticipates meeting its 2020 emissions goals.

The UC President has set a goal for UC to become "carbon neutral" by 2025 and purchase only clean energy. UC is now working on the President's initiative to be the first major research university to achieve net energy and carbon neutrality.[24]

3.7.2 Transportation Demand Management Program

UCSF currently manages a robust campus-wide TDM program with the goal of reducing single-occupant vehicle (SOV) trips to all of the campus sites. The details of this program are presented in Section 5.14, *Transportation and Traffic*. To minimize traffic generated by UCSF current and planned facilities, UCSF proposes to implement more robust TDM measures. These measures were developed as part of an internal planning process to identify feasible TDM measures that could reasonably result in a reduction in UCSF-generated SOV trips, given UCSF's already low SOV rate.[25] To accomplish this, UCSF would implement some or all of the following in the 2014 LRDP:

- Expand UCSF Vanpool Program (add new vanpools and subsidize costs to attract new riders);
- Develop more robust UCSF Carpool Matching and convert additional parking spaces to carpool only;
- Enhance existing City CarShare pods on campus sites and participate in the city's new Medical Center Rideshare program;
- Increase supply and access to bicycle parking and showers/lockers;
- Enhance shuttle system with Wifi and Next Bus;
- Limit parking for non-faculty tenants in new housing;
- Gradually increase cost of employee parking, over time; and
- Promote flexible work schedules, as possible.

[24] President Janet Napolitano in an address to the UC Board of Regents, November 2013.
[25] At present, less than 35% of all UCSF-generated trips are by single-occupant vehicle.

As a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP, would continue to do so in particular at the four UCSF campus sites where development is proposed. As the campus sites develop, UCSF would monitor vehicle traffic conditions, transit operations, shuttle ridership, adequacy of pedestrian and bicycle facilities, and loading and parking conditions within and surrounding the campus sites. The results of monitoring would inform when and whether UCSF would implement these additional TDM strategies, enhance shuttle service, or make other operational improvements to ensure transportation facilities are sufficient and safe.

3.8 Campus Site Locations and Proposed Physical Development Plans

The following development plans are part of an ongoing planning process conducted by UCSF for the LRDP. Revisions and/or additions to these programs may be made during the LRDP planning process.

3.8.1 Parnassus Heights

The Parnassus Heights campus site is the oldest and largest of the UCSF campus sites, occupying about 107 acres of land at the base of Mount Sutro, in the Inner Sunset mixed-use neighborhood. The campus site is bounded by Carl and Irving Streets to the north, Fifth Avenue to the west and Clarendon Avenue, Christopher Drive and Crestmont Drive to the south. The eastern boundary abuts the Cole Valley neighborhood and the City's Interior Greenbelt Natural Area. UCSF's facilities are concentrated at the north end of the campus site where Moffitt and Long Hospitals, the four schools, clinics, research, auxiliary services, housing, parking and other support uses are located. The 61-acre Mount Sutro Open Space Reserve (Reserve) occupies the central and southern portion of the campus site, up to 400 feet in elevation above Parnassus Avenue. The Reserve is designated by the Regents as permanent open space and is available for public use. Adjacent to the Reserve are three small office and support buildings, Environmental Health and Safety, Aldea Housing (formerly the Aldea San Miguel apartment complex), and a community center. These buildings are accessible via Medical Center Way, a narrow, two-lane campus road.

Parnassus Heights is the primary UCSF campus site for providing instruction, a role that is expected to continue through the 20+ year planning horizon of the LRDP. The population of the campus site consists of students, faculty and staff, patients, visitors and residents of UCSF housing. The total population of Parnassus Heights is not expected to grow substantially over the life of the LRDP. Changes in population, however, will reflect changes in the types and uses of space at the site. As of 2013, approximately 80% of UCSF's 4,760 students are educated at Parnassus Heights. The majority of the projected growth in student enrollment is expected to occur here. An additional 630 students are expected at Parnassus Heights. There are currently over 8,300 UCSF faculty and staff employed at the Parnassus Heights campus site, which is not expected to increase under the LRDP. 560 residents currently reside in UCSF housing at Parnassus Heights. This number could grow to 980 residents with the proposed new housing and with the future conversion of existing program space into housing. Over 256,000 outpatient visits per year are currently seen at clinics at

Parnassus Heights. Depending on the future mix of services, this number could grow to 340,000 outpatient visits per year during the life of the LRDP.

3.8.1.1 1976 Regents' Resolution

In the 1976 Regents' Resolution[26], that was adopted to address potential impacts associated with development of the Parnassus Heights campus site, the Regents' designated the Mount Sutro Open Space Reserve as a permanent open space[27]; defined campus boundaries to prohibit further property acquisition (by purchase, condemnation or gift) and leasing of private residential properties outside this area by UCSF; directed that the houses acquired and occupied by UCSF on Third Avenue, Fifth Avenue, Parnassus Avenue, Irving Street and Kirkham Street be returned to residential use, and that some be sold; and adopted a limit on the amount of built space of 3.55 million gsf, commonly referred to as the "space ceiling", within the newly designated campus site boundaries. The space ceiling applies to all building space, including parking structures, but excludes residential uses in UCSF buildings on Third, Fourth, Fifth, and Parnassus Avenues and Kirkham and Irving Streets. The space ceiling was intended to limit environmental impacts such as traffic and parking impacts on the neighborhoods surrounding the Parnassus Heights campus site by limiting UCSF's square footage. Currently, Parnassus Heights contains approximately 3.845 million gsf of space, approximately 295,000 gsf or 8.3% above the space ceiling limit. The LRDP identifies strategies to reduce the space ceiling overage over the life of the LRDP.

The 1976 Regents' Resolution also recognized the principle of limiting the average daily population at Parnassus Heights to be substantially in accordance with the level projected in the 1976 LRDP EIR (13,400 persons). The 1982 LRDP limited use of the Parnassus Heights campus site to purely academic and clinical functions and called for the relocation of most campus-wide administrative functions to other sites that subsequently had to be purchased or leased. The 1996 LRDP established a new goal to limit the average daily population to 16,000 persons. Currently, the average daily population at Parnassus Heights is estimated at approximately 17,950 persons.

3.8.1.2 Proposed Update to the 1976 Regents' Resolution

UCSF proposes to ask the Regents to update the 1976 Regents' Resolution to:.

- Reaffirm continuing commitments, including 1) maintaining the designation of the Mount Sutro Open Space Reserve as permanent open space; 2) continuing to respect the Parnassus Heights campus boundary established in 1976; and 3) continuing to adhere to the expansion restriction area within which UCSF would not acquire property or lease residential property.

- Remove references to aspects of the 1976 Regents' Resolution that have already been fulfilled, including 1) the conversion of office space in houses on Third, Fifth, and Parnassus Avenues back to residential use; 2) the sale of certain parcels on Third Avenue; and 3) the allocation of funds for traffic studies related to the 1976 LRDP.

[26] The 1976 Regents' Resolution was incorporated in the 1976 LRDP and all subsequent EIRs.

[27] The reserve on Mount Sutro was designated as open space for a 25-year period by the Regents in 1975. In the 1976 Regents' Resolution, the Regents increased the Mount Sutro Open Space Reserve from 52 acres to 58 acres and made the open space designation permanent. The 1996 LRDP updated the boundaries of the Reserve to reflect the results of a survey which found that the Reserve contained an additional three acres, for a total of 61 acres.

- Modify the way space and population are monitored at the Parnassus Heights campus site by 1) excluding all housing from the calculation of space subject to the Parnassus Heights space ceiling, and 2) tying the average daily population goal for the Parnassus Heights campus site to population projections contained in the LRDP EIR, as it may be updated from time to time. Both of these proposed modifications are discussed further below.

The 2014 LRDP proposes to exclude all residential space within the Parnassus Heights campus site boundaries from the space ceiling calculation, regardless of where it is located, to help meet UCSF's housing goals and support city-wide housing goals. With this change, the three older Aldea Housing buildings and University House, which together contain approximately 132,400 gsf, would be removed from the space ceiling calculation. The proposed modification to exclude all residential space from the space ceiling calculation recognizes the importance of campus housing in supporting Citywide housing goals, improving UCSF's jobs-housing balance, lessening traffic impacts, and enhancing campus vitality and focuses the monitoring of space on non-residential space. This proposed change also recognizes the growing community sentiment that UCSF should provide on-campus housing, and this is something to be fostered, not penalized. All non-residential space[28] would continue to be included in the space ceiling calculation.

The exclusion of all residential space from the space ceiling calculation, plus all of the physical proposals for the Parnassus Heights campus site described in the 2014 LRDP and analyzed in this EIR, would decrease the amount of space subject to the space ceiling to approximately 3.61 million gsf by the LRDP horizon of 2035, or approximately 60,000 gsf (1.7%) above the 3.55 million gsf space ceiling limit.

With the proposed modification to the *1976 Regents' Resolution*, described above, to remove all residential space from the space ceiling calculation, the three older Aldea Housing buildings (which contain a total of 42 one-bedroom units) previously planned for demolition are proposed to be retained, due to the current demand for housing in San Francisco and the scarcity of affordable housing options for UCSF population groups; retention of the units would provide much needed housing for UCSF students and personnel. The 2014 LRDP and update to the *1976 Regents' Resolution* would supersede the Aldea Agreements[29] to reflect this change.

As described above, the principle of administering the Parnassus Heights campus site in accordance with average daily population projections contained in the LRDP EIR was included in the *1976 Regents' Resolution*. The 2014 LRDP reaffirms this principle, and proposes to tie average daily population projections for the Parnassus Heights campus site to the then-current LRDP EIR, as updated from time to time and approved by the Regents. The 2014 LRDP EIR projects an average daily population for the Parnassus Heights campus site of approximately 18,600 persons in 2035.

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28 Non-residential space subject to the space ceiling is measured using Basic Gross Area, which is the sum of all area, finished and unfinished, on the floors of the building included within the outside face of the environmentally controlled envelope for all stories or areas which have floor surfaces. Basic Gross Area includes garages, lobbies and other such spaces, but excludes all open to the weather spaces, such as light wells, courts, balconies, plazas, etc.

29 The Aldea Agreements are a series of agreements related to the occupancy/demolition of the remaining older Aldea Housing buildings. For information, please see the Draft 2014 LRDP, p. 53.

3.8.1.3 Proposed Functional Zones

The existing functional zones of the Parnassus Heights campus site is depicted in **Figure 3-7**. Proposed functional zones are shown in **Figure 3-8**. These zones reflect the desired predominant land uses through 2035. Other uses may occur in these zones as indicated in Table 3-1.

Under the 2014 LRDP, the Housing zone would be enlarged to capture UC Hall and Proctor, which are proposed for housing[30], from the Instruction and Research zone (which would be reclassified as Research). The Kirkham Child Care Center would be reclassified from Housing to Support. The Environmental Health and Safety Annex and the Mechanical Annex (formerly known as Emergency Fire Water Pumphouse and Ammonia Tank) on Parnassus Avenue would be newly classified as Support. The former Campus Community and Logistical Support functional zones would be combined into a single Support zone, with a new, separate Parking zone for structured parking. The footprints of the Environmental Health and Safety, Surge and Woods buildings proposed for demolition would be reclassified as Open Space and would become part of the Reserve.

3.8.1.4 Proposed Plan

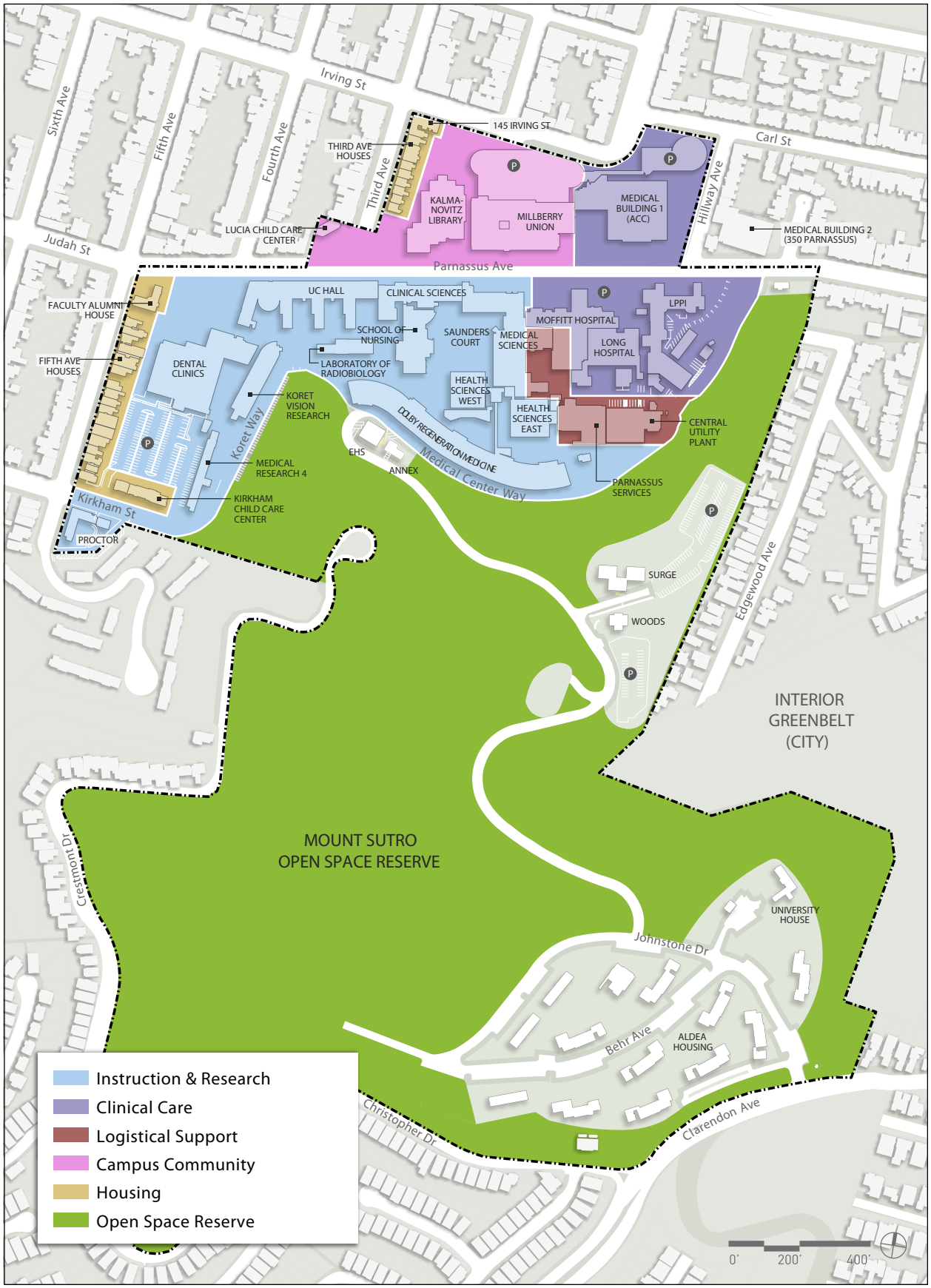
With the goal of reducing the space ceiling overage, the LRDP proposes to: 1) convert some existing office space (in UC Hall and Millberry Union towers) to residential use, and 2) demolish a number of buildings and either move occupants and programs to other campus sites or absorb them into other buildings at Parnassus Heights.

UCSF would also implement additional TDM measures beyond those that have already been implemented to further help reduce traffic impacts on neighbors. In addition, high-volume clinics may be relocated to other campus sites. Many of these actions are proposed for implementation before the New Hospital Addition would be built by 2030. The proposed New Hospital Addition is driven by a State mandate to address seismically vulnerable buildings in compliance with SB 1953 by 2030. UCSF currently plans to comply with this legislation by decommissioning Moffitt Hospital for acute care use and constructing a New Hospital Addition physically connected to Long Hospital (which does comply with SB 1953) after demolishing the Langley Porter Psychiatric Institute building.

Because UCSF proposes to backfill Moffitt Hospital with outpatient facilities, hospital support and other campus uses after the New Hospital Addition is constructed, the overall gross square feet at Parnassus Heights campus site would increase and other actions would need to be considered to offset the net new space both before and after the New Hospital Addition is built.

LRDP proposals at the Parnassus Heights campus site are discussed below and depicted on **Figure 3-9**.

30 The Proctor site could instead become open space.

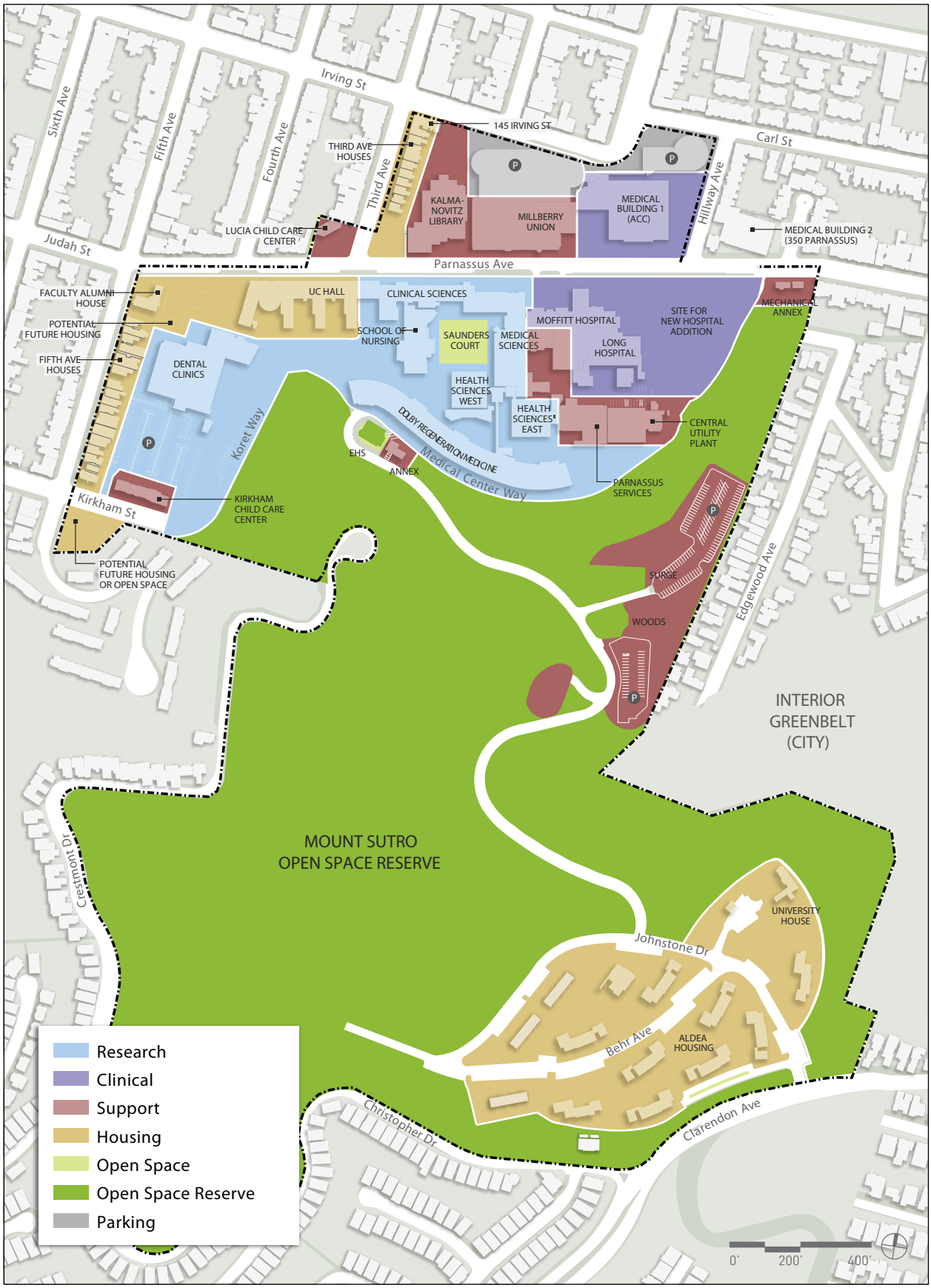


SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-7

Parnassus Heights-Existing Functional Zones



SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-8

Parnassus Heights-Proposed Functional Zones

SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-9

Parnassus Heights-Proposed Plan

3.8.1.5 2014 LRDP Proposals at the Parnassus Heights Campus Site

The following proposals fulfill the 2014 LRDP site-specific objectives at the Parnassus Heights campus site:

Land Use

Demolish the Laboratory of Radiobiology, Medical Research 4, Surge, Woods, Environmental Health and Safety (EHS), Langley Porter Psychiatric Institute (LPPI), Koret Vision Research (Koret), and Proctor buildings.

In order to reduce the space ceiling overage, the 1996 LRDP proposed to demolish seven small buildings, five of which have not yet been demolished: the Laboratory of Radiobiology, Medical Research 4, Surge, Woods, and the Proctor building (735 and 374 Parnassus Avenue have been demolished). Together, these five buildings contain about 55,600 gsf. None of the small buildings are potentially eligible for the CRHR or the NRHP, with the exception of the Surge building, which was constructed in 1966 and would likely be eligible for the CRHR and NRHP when it reaches 50 years of age in 2016.[31]

After demolition of the Laboratory of Radiobiology and the Medical Research 4 buildings, their sites would be used for construction staging for the renovation of the Clinical Sciences building and UC Hall, and would subsequently be developed to provide additional surface parking. The Clinical Sciences building is scheduled to be renovated in mid-2014 and is not included as part of the LRDP proposals. The Medical Research 4 site may also be developed with an expanded outdoor play yard space for the nearby Kirkham Child Care Center. The Surge and Woods building sites would be restored to open space and incorporated into the Reserve, though their existing parking areas would remain.

The two-story 6,200 gsf EHS building is located south and uphill of the Dolby Regeneration Medicine building across Medical Center Way on the northern edge of the Reserve. The occupants would be moved into other buildings on the campus site and the building demolished before the construction of a New Hospital Addition. The site would be restored as open space and added to the Reserve, though the existing parking area would remain. The building was constructed in 1971. It was determined to be ineligible for inclusion in the CRHR or the NRHP and is not listed on a local register. Hence, it is not considered to be a historic resource. The adjacent Annex building would remain.

LPPI is located on the east side of the campus site on Parnassus Avenue and Medical Center Way. The seven-story 104,800 gsf LPPI building houses psychiatric inpatient and outpatient uses, as well as instruction, research and administrative space. LPPI and three small support structures are planned to be demolished to allow for construction of a New Hospital Addition. The LPPI building, constructed in 1941, and the three small support buildings have been determined to be ineligible for inclusion in the CRHR and the NRHP. They are not identified on any local registers or surveys and are not considered historic resources.

Located behind the Dental Clinics building and UC Hall on Koret Way, the four-story Koret Vision Research building contains approximately 43,000 gsf. The Koret Vision

31 Carey & Company, Inc., *UCSF Historic Resources Survey*, February 8, 2011, p. 49.

Research building would be demolished toward the end of the LRDP horizon, after the New Hospital Addition is built and Moffitt Hospital is renovated and can accommodate Koret Vision Research occupants and programs. The demolition would help UCSF reduce the space ceiling overage. The site may be developed with parking or open space. Constructed in 1986, this building will be 49 years old by 2035. It has not yet been evaluated for its historic significance.

Because the Proctor building was constructed with funds donated by the Proctor family for use by the foundation for its clinical, research and teaching functions, UCSF is obligated to provide the Proctor Foundation with comparable replacement space or funds to construct equivalent new space. Such obligations must be met before the building is vacated and demolished; therefore, demolition of the Proctor building is likely to occur toward the end of the LRDP horizon.

Construct a New Hospital Addition building on the LPPI site. In order to comply with the requirements of the *Alquist Seismic Safety Act*, as amended, a New Hospital Addition, containing approximately 308,000 gsf and connected to Long Hospital is proposed on the LPPI site, to replace inpatient facilities currently in Moffitt Hospital. Construction would take about four years, ending by 2030. The New Hospital Addition would contain up to 140 beds and would be seven stories or about 110 feet in height, excluding rooftop mechanical equipment which could add up to an additional 17 feet. The building has not yet been designed, but is proposed to be set back from Parnassus Avenue to include a loop driveway for passenger drop-off/pick-up, parking and loading, and exiting directly across from Hillway Avenue. When the building is designed in the future, some of the current loading areas may be redesigned or repurposed to provide additional loading space off of Medical Center Way. During the LRDP planning process, desirable building features were identified for the hospital addition design. It is important that the New Hospital Addition have an attractive appearance and pedestrian scale along Parnassus Avenue, and the upper portion of the building be designed to minimize shade on the street. As the eastern gateway to the campus site, the building would be designed to be architecturally prominent.

Renovate and reuse Moffitt Hospital with non-acute care uses. After the addition to Long Hospital is constructed, the inpatient uses currently in Moffitt Hospital would be moved to a New Hospital Addition. The decommissioned Moffitt Hospital would be renovated and repurposed for outpatient, hospital support and other non-acute care uses. The existing circular driveway along Parnassus Avenue, which would no longer be needed for patient drop-off and pick-up, would be repurposed and could be used for commercial loading, shuttle loading or open space.

Renovate and reuse UC Hall. Built in 1917, UC Hall is one of the oldest buildings on the Parnassus Heights campus site. It is potentially eligible for the California Register of Historical Resources (CRHR) and the National Register of Historic Places (NRHP). This seven-story building is located on Parnassus Avenue, at the west end of the campus site, and constitutes approximately 148,300 gsf. UC Hall was identified for demolition in the 1996 LRDP and 1982 LRDP in order to reduce the space ceiling overage. However, UCSF now proposes to retain, seismically retrofit, renovate and reuse UC Hall for housing and offices by 2019. This would allow UCSF to preserve an historic resource, help meet campus housing goals, and reduce the overage of program space that counts against the space ceiling, by reusing UC Hall for housing which is exempt from the space ceiling calculation. In Phase 1, it is proposed that the top three floors be renovated for student housing and the lower three

floors for offices. Retail, meeting, housing, office, and storage space could be located on the ground floor, along with a new loading dock at the west end of the building. In Phase 2, it is proposed that the three floors with offices be converted to housing; this would occur after Moffitt Hospital is decommissioned, renovated, and available for other uses, including the office use displaced from UC Hall. With the completion of Phase 2, it is estimated that the building would contain approximately 210 beds in about 170 units. UCSF retained the firm of Page & Turnbull, an architectural firm specializing in historic preservation, to make preliminary recommendations regarding alterations to the exterior of UC Hall that would be consistent with the Secretary of the Interior's Standards for Rehabilitation. UCSF would follow those recommendations to ensure that, in carrying out the renovation project, the Secretary of the Interior's Standards for Rehabilitation are met.

Convert Millberry Union towers from office to residential use. The Millberry Union towers, used as office space, constitute about 47,100 gsf. UCSF proposes to convert the upper levels to student housing (the original use of the towers). Preliminary studies indicate that up to 83 studio and one-bedroom units could be provided. This conversion is expected to occur toward the end of the LRDP horizon after Moffitt Hospital is vacated and renovated, so that the office occupants in the Millberry Union towers could be relocated into Moffitt. The support uses on Millberry Union's ground floor and the levels below, which are mostly retail, office and a limited amount of outpatient space, are expected to continue.

Construct faculty housing at Fifth Avenue and Parnassus Avenue. UCSF may propose to build faculty housing next to the Faculty Alumni house at 745 Parnassus Avenue. UCSF is currently conducting a feasibility analysis for constructing five units of housing on the 1414 Fifth Avenue site and up to 40 units on the former site of 735 Parnassus for a total of up to 45 units and about 48,400 gsf in an L-shape configuration around the Faculty Alumni House.

Construct faculty housing on the Proctor site. The Proctor site may be developed with housing if it is not developed as open space. The Proctor site may be developed with up to 32 residential units.

Complete the Conversion of Fifth Avenue houses to faculty housing. UCSF owns 17 houses along Fifth Avenue between Parnassus Avenue and Kirkham Street, of which approximately two-thirds are used as faculty housing. Over the LRDP horizon, UCSF proposes to continue to convert the remaining houses on Fifth Avenue to faculty housing.

Seismically retrofit the Faculty Alumni House. UCSF proposes to retrofit the Faculty Alumni House at 745 Parnassus Avenue to meet seismic standards.

Open Space

Continue to manage the Mount Sutro Open Space Reserve as permanent open space, and create new/restored trails. To enhance and improve access throughout the Reserve for the enjoyment of visitors three new trails are proposed in the Mount Sutro Reserve: 1) a trail on the north side of the Reserve connecting the Historic Trail to the campus, allowing for ease of access to/from the campus (Sunset Trail). This trail would begin near the Koret Vision Research building and connect with Medical Center Way before continuing to the Historic Trail; 2) a trail connecting the South Ridge and Quarry Road Trails to Christopher Drive, allowing for easier public access from the south side of the Reserve (Christopher

Trail); and 3) an extension of this trail to Clarendon Avenue, which also would provide access to trails in the Interior Greenbelt (on City-owned land) located southeast of the Reserve (Clarendon Trail). The proposed trail alignments are approximate and have not yet been designed. Creating these new trails will require minimal vegetation removal, minor amounts of grading and new trail markers. (See **Figure 3-10**)

Renovate Saunders Court and enhance the pedestrian spine. The LRDP proposes to renovate Saunders Court to improve its functionality for general use and special events, to make it more attractive and engaging, and to provide greater connectivity to Parnassus Avenue through Clinical Sciences. Improvements may include an expansion of the pavement, seating and tables at the north end to accommodate more people without compromising pedestrian movement between Medical Sciences and School of Nursing buildings; a new diagonal walkway with historic information about UCSF, which would cut through the center of the courtyard; conversion of part of the lawn to a different surface material; new plants; features that minimize windy conditions; and better access for the disabled and for fire trucks. (See **Figure 3-11**)

An existing walkway between the Schools of Dentistry and Nursing and extending to the south past the Koret Vision Research building is referred to as the campus pedestrian spine. As adjacent buildings are renovated or demolished, UCSF would consider additional landscaping, seating nodes, better lighting, higher quality paving, and weather protection to enhance the pedestrian experience and to encourage more social interaction.

Circulation, Transportation and Parking

Implement Parnassus Avenue Streetscape Plan. As UCSF renovates the Clinical Sciences and UC Hall buildings, and builds new faculty housing near the Fifth and Parnassus Avenue intersection, UCSF proposes to begin implementing the Parnassus Avenue Streetscape Plan. This plan calls for improvements that make crossing the street safer and more convenient for pedestrians; increase bicycle safety; reorganize and improve transit and UCSF shuttle operations; create more usable outdoor space; strengthen UCSF's identity; and enhance the public realm as called for in the *Physical Design Framework*. Improvements may include new paving, street furniture, lighting and street trees, as well as sidewalk and crosswalk widening and better defined campus gateways. These improvements are proposed to occur in phases starting on the south side of Parnassus Avenue, at the west end at Fifth Avenue, and moving through the campus core of the campus site and along the front of the New Hospital Addition, finishing at Medical Center Way.

Reduce congestion through parking and loading improvements. To reduce congestion on Parnassus Avenue, UCSF proposes to develop more off-street parking and loading and increase parking enforcement to reduce competition for on-street parking. UCSF proposes new loading areas accessible from Parnassus Avenue, and new parking areas, accessible through the Fifth and Kirkham intersection. Most of the new parking will be designated as contractor parking, which generates less traffic throughout the day than patient or visitor parking. In addition, some loading areas would be removed as a result of proposed building demolitions.

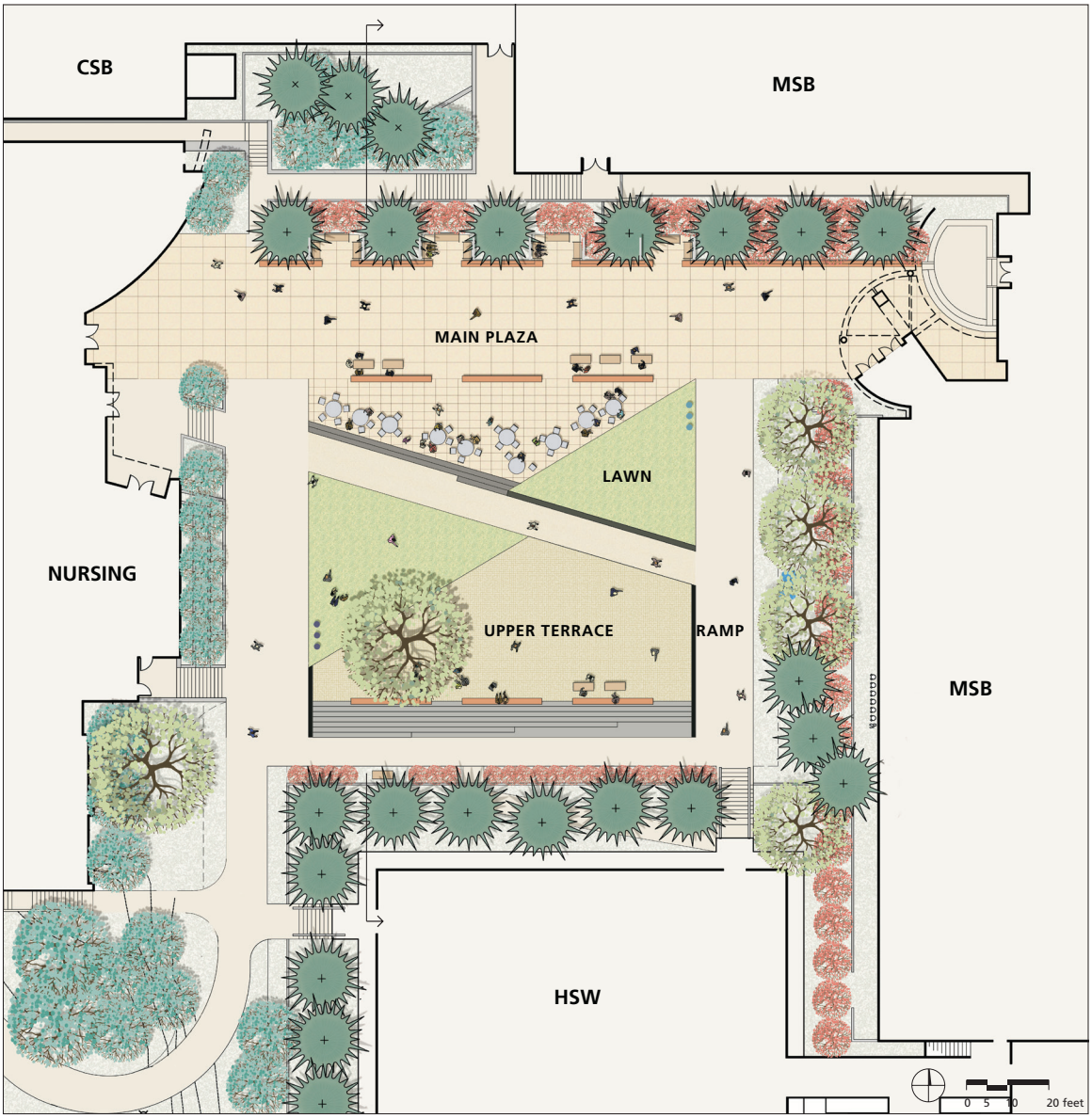
In order to improve loading and delivery operations, UCSF proposes to implement a cross-docking model where vendors deliver goods to Oyster Point and goods are consolidated onto UCSF vehicles for delivery, limiting the number of individual deliveries to this and other campus sites. Oyster Point houses UCSF's Distribution and Storage warehouse,

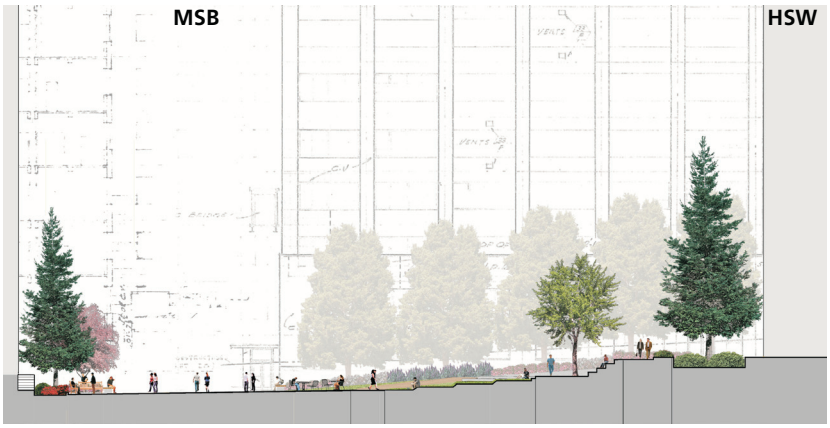
SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-10

Parnassus Heights-Proposed Open Space Plan





UPPER TERRACE
Conceived as a quiet alternative to the more active main plaza, the upper terrace offers seating for small groups and open areas for larger events. The surface of sand-set stone pavers is punctuated by a single sculptural tree. Stairs form a simple backdrop and provide additional seating.

MAIN PLAZA
The enlarged plaza captures the sunniest portion of the court. Seatwalls finished with wood line the plaza. Pocket spaces with benches offer a sunny yet sheltered place for pause, conversation, or lunch. Tables and benches allow flexible gathering as the weather permits. Wood seating units in the center of the plaza are movable to allow for large events.

WALKWAYS & RAMPS
The eastern walkway, connecting to HSW, is graded to be accessible. Required fire truck access is provided by 20 foot lanes- often accomplished with planted paver strips.

LAWN
Lawn areas are used purposefully to green the courtyard and provide sloped seating during special events.

SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-11

Parnassus Heights-Saunders Court Conceptual Design

which provides distribution, storage, and mail services to UCSF campus sites. Should Oyster Point be relinquished as part of UCSF's strategy to consolidate its remote sites, a suitable site and relocation plan would need to be identified in order to accommodate these functions. UCSF also proposes to reconfigure the existing Central Receiving area, located at the back of Moffitt and Long Hospitals; station a dockmaster; and implement a scheduling system to restrict on-site delivery times and vehicle sizes. These loading and delivery improvements would reduce campus congestion, creating a more safe, attractive, and efficient campus.

Utilities and Other Infrastructure

Relocate and expand utility lines and replacement of gas and fuel storage tanks. UCSF is planning to relocate and expand medical gas storage tanks in the vicinity of Medical Center Way near the hospital. However, no location has been identified at this time. In addition, existing underground diesel fuel storage tanks in Medical Center Way and underground lines connecting the tanks to Long Hospital must be replaced to meet State and local codes. Current plans anticipate phased replacement of these tanks in their current location. The closure of Medical Center Way for several months could be required during construction.

Construct retaining wall. Landslides have occurred along the northern slope of the Reserve just south of the Dolby Regeneration Medicine building. UCSF proposes to construct a retaining wall to shore up the hillside to prevent future landslides. Additionally, if it is determined that the Mechanical Annex at Parnassus Avenue and Medical Center Way is no longer needed, the building site would be reconfigured to allow for the widening of Medical Center Way. This action would facilitate better circulation, and ideally would be developed in conjunction with the New Hospital Addition.

3.8.2 Mission Bay

The 56.4 acre UCSF Mission Bay campus site is generally bounded by Mission Bay Boulevard South to the north, Owens Street to the west, Mariposa Street to the south and Third Street to the east. The campus site is within the Mission Bay South Redevelopment area which is part of the larger 303-acre Mission Bay Redevelopment Area in the Mission Bay neighborhood north of the Potrero Hill and Dogpatch neighborhoods. It is approximately 3.8 miles east of the Parnassus Height campus site and 3.6 miles southeast of the Mount Zion campus site. As UCSF's primary location for basic science research, it is home to programs in biological sciences, biochemistry and biophysics, cellular and molecular pharmacology, the Center for Brain Development, the Cardiovascular Research Institute, and the Neurosciences Center, among others.

The campus site comprises the original 42 acres north of Sixteenth Street (North Campus, formerly known as the Research Campus) and the 14.4 acres south of Sixteenth Street (South Campus) subsequently acquired for the Medical Center at Mission Bay. UCSF also leases space for research and clinical purposes in the nearby China Basin building at 185 Berry Street, at 1500 Owens Street, and at 499 Illinois Street; and owns an office building at 654 Minnesota Street.

The north and south portions of the campus site are separated by Sixteenth Street, a city street that serves as the primary gateway from the west into the Mission Bay area. The North Campus is bifurcated by Fourth Street, a city street that connects the campus site to the area further north. When Fourth Street is completed through the South Campus, it will transition into a large public pedestrian plaza and bicycle route, which will serve the UCSF Medical Center, scheduled to open in 2015, and the broader community. Fourth Street and several private campus streets help disperse traffic, reinforce the urban pattern of the area, and provide view corridors.

The population of the Mission Bay campus site consists of students, faculty and staff, patients, visitors and residents of UCSF housing. Reflecting the growth in space, the total population of Mission Bay is expected to grow substantially over the life of the LRDP. Currently, the daily population is more than 4,800, including students, faculty, staff and campus housing occupants. With the inclusion of UCSF employees in nearby leased and owned sites, the total daily population is more than 5,000. With the completion of construction currently in progress and implementation of the LRDP proposals for the North, South, and East campuses, this number could grow to nearly 22,000 by 2035. UCSF housing at Mission Bay is currently home to over 900 residents, some of whom work or study at the Mission Bay campus site. This number could grow to 1,900 residents in the future through the construction of additional campus housing. Approximately 70,000 annual outpatient visitors are currently seen at UCSF clinics at Mission Bay in owned and nearby leased space. This number is projected to grow to 450,000 annual outpatient visits during the life of the LRDP, primarily due to the new Medical Center at Mission Bay, including both Phase 1 and 2.

As described below, new construction totaling approximately 1.13 million gsf is currently underway at the Mission Bay campus site and is scheduled for completion in fall 2014 and February 2015. Approximately 1.46 million gsf of new space is proposed under the LRDP, all of which would be located on the North Campus. In addition, the cancer outpatient building (Part of Phase 1 of the Medical Center) and the Phase 2 Medical Center are assumed to be constructed prior to 2035 for purposes of the EIR analysis, although the LRDP assumes that the Phase 2 Medical Center would be constructed after 2035. These two projects combined are approximately 918,000 gsf.

Under the 1996 LRDP and the 1998 *Mission Bay South Redevelopment Plan*, the North Campus was entitled for 2.65 million gsf for research, instruction, and support uses (excluding structured parking). Of the 2.65 million gsf entitlement, 1.92 million gsf, representing 73% of the 1996 LRDP approved entitlement, has been built: six research buildings, a campus community center (known formally as the William J. Rutter Center, or simply as the Rutter Center) on Owens Street, and 430 units of housing between Third and Fourth Streets. Research is currently the dominant use of space at Mission Bay. Housing was not in the original space program, but approximately 400,000 gsf of housing was substituted for other previously planned uses in *LRDP Amendment #1* to help meet UCSF demand, and to minimize pressure on neighborhood housing demand and traffic impacts. A child care center temporarily housed in a modular building on Block 18 is excluded from the square footage because it is expected to move into a permanent facility. There are also two parking structures on Owens and Third Streets with a total of approximately 1,300 parking spaces, and a minor amount of vacant space that could be developed for retail or offices.

Mission Hall, an academic office building of 264,800 gsf at the northeast corner of Fourth and Sixteenth Streets, is expected to open in late 2014. Upon its completion, the total development on the North Campus will be approximately 2.2 million gsf, or about 83% of the existing allowable entitlement of 2.65 million gsf. Approximately 458,400 gsf of this entitlement will remain to accommodate substantial unmet academic needs that could benefit from a presence at Mission Bay. Existing built space at this campus site has been developed at a higher density than originally anticipated so the remaining undeveloped land on the North Campus has additional development capacity.

Since the original Mission Bay campus site was envisioned, clinical programs have been introduced and an additional 14.4 acres of adjacent land (the South Campus) was acquired for the UCSF Medical Center at Mission Bay. The 2008 *LRDP Amendment #3* included 1,787,000 gsf of clinical uses for the South Campus. Phase 1 of the UCSF Medical Center at Mission Bay is expected to open in 2015. Located on the east side of the South Campus, Phase 1 comprises the future UCSF Benioff Children's Hospital, UCSF Betty Irene Moore Women's Hospital, and UCSF Bakar Cancer Hospital, which together form a 289-bed hospital complex; a future outpatient cancer building (sometimes called Phase 1B); and an energy center – a total of 869,000 gsf, or 49 percent of the South Campus entitlement. Over 1,000 parking spaces will be provided in a surface lot and existing garage. Phase 2 of the Medical Center at Mission Bay will be constructed across the Fourth Street Public Plaza, likely sometime after 2035. Development of these UCSF Medical Center facilities will result in the integration of patient care into the Mission Bay research community.

In summary, a total of approximately 1.14 million gsf is currently under construction at the Mission Bay campus site. When completed, there will be approximately three million gsf of UCSF-occupied space, excluding structured parking and the temporary child care center.

In December 2012, UCSF issued a Request for Qualifications to property owners and developers to identify opportunities for acquisition of a site for office use near UCSF's Mission Bay campus site. The site would serve as a consolidation location for both owned and leased properties to reduce operating and occupancy costs, improve efficiency and collaboration and provide programmatic flexibility among its campus sites. UCSF is in advanced discussions to acquire Mission Bay Blocks 33 and 34, a 3.83-acre parcel directly across Third Street from the South Campus. UCSF hopes to complete the acquisition in the summer of 2014. Therefore, the potential further expansion of the Mission Bay campus site to include Blocks 33-34 is analyzed in this EIR.

Under the 2014 LRDP, the Mission Bay campus site boundaries would be expanded to include Blocks 33 and 34, which would be known as the East Campus. In connection with the pending acquisition of Blocks 33 and 34, UCSF anticipates entering into a Memorandum of Understanding with the Successor Agency to the San Francisco Redevelopment Agency (also known as the Office of Community Investment and Infrastructure) regarding UCSF's financial obligations, including contributions towards the construction of public infrastructure, affordable housing, maintenance of the open space system throughout Mission Bay, and agreement to follow the *Mission Bay South Redevelopment Area Plan "Design for Development"* regarding building height, bulk, setbacks, maximum tower floorplate and other design matters for buildings on the

East Campus. UCSF also anticipates entering into an Infrastructure Agreement with the infrastructure developer for Mission Bay (FOCIL-MB, LLC) regarding UCSF's contribution towards public infrastructure.

3.8.2.1 Proposed Functional Zones

The existing functional zones of the Mission Bay campus site is depicted in **Figure 3-12**. Proposed functional zones are shown in **Figure 3-13**. These zones reflect the desired predominant land uses through 2035. Functional zones on the North Campus reflect the organizational structure of the original *Mission Bay Master Plan and Design Guidelines*, which were prepared in 1999 to guide campus site growth and envisioned research buildings clustered to the north and south of a network of large open space areas, with parking at the periphery along Owens and Third streets. The large areas in the Research functional zone would also contain smaller amounts of secondary uses such as instruction, administration, retail, and other support space. The existing Rutter Center is in the Support functional zone, and existing campus housing between Third and Fourth streets is in the Housing zone. A second Housing functional zone is proposed on the northern edge of the North Campus on Block 15, identified for future housing use because of its proximity to off-site residential development under construction north of the campus site, and proximity to on- and off-site open space and a potential public school site on Block 14.

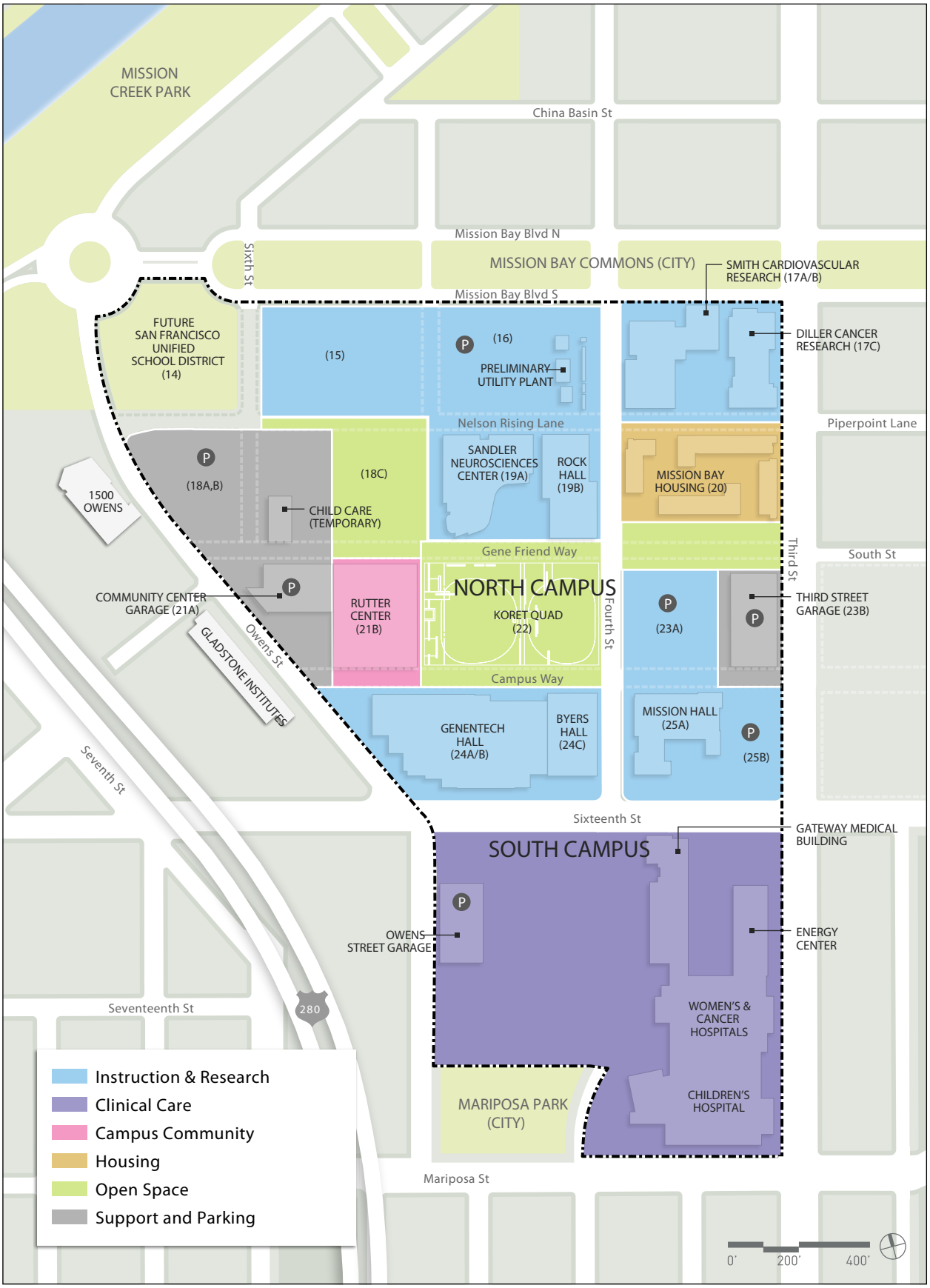
The majority of clinical uses are expected to be located on the South Campus in the Clinical functional zone, in support of the UCSF Medical Center at Mission Bay. However, several clinics have been developed as a secondary use within the Research functional zone in cases where there is a close functional relationship between clinical and research programs, and this is likely to continue in the future.

Parking functional zones are located near the periphery of the campus site so as to minimize vehicular traffic within the campus site. The two parking zones on Owens Street provide for parking expansion when it is needed to support future program growth.

The East Campus (Blocks 33 and 34) is functionally zoned for research and parking use, shown as a striped pattern on Figure 3-13 because the exact footprints for those uses have not yet been determined. When the locations of specific uses on the parcel are identified, the functional zones for the East Campus will be updated accordingly.

3.8.2.2 Proposed Plan

The 2014 LRDP proposes to increase the square footage of the North Campus by 1,450,300 gsf, which includes 458,500 gsf of existing remaining entitlement plus 991,800 gsf of new entitlement, sized to make efficient use of the land while avoiding traffic and city-wide infrastructure impacts. This increase would help UCSF meet its space needs through the LRDP horizon of 2035, but is unlikely to accommodate all of UCSF's programmatic needs at Mission Bay. Development of the North Campus for research and other uses will depend on funding that may or may not fully materialize during the LRDP horizon.



SOURCE: UCSF

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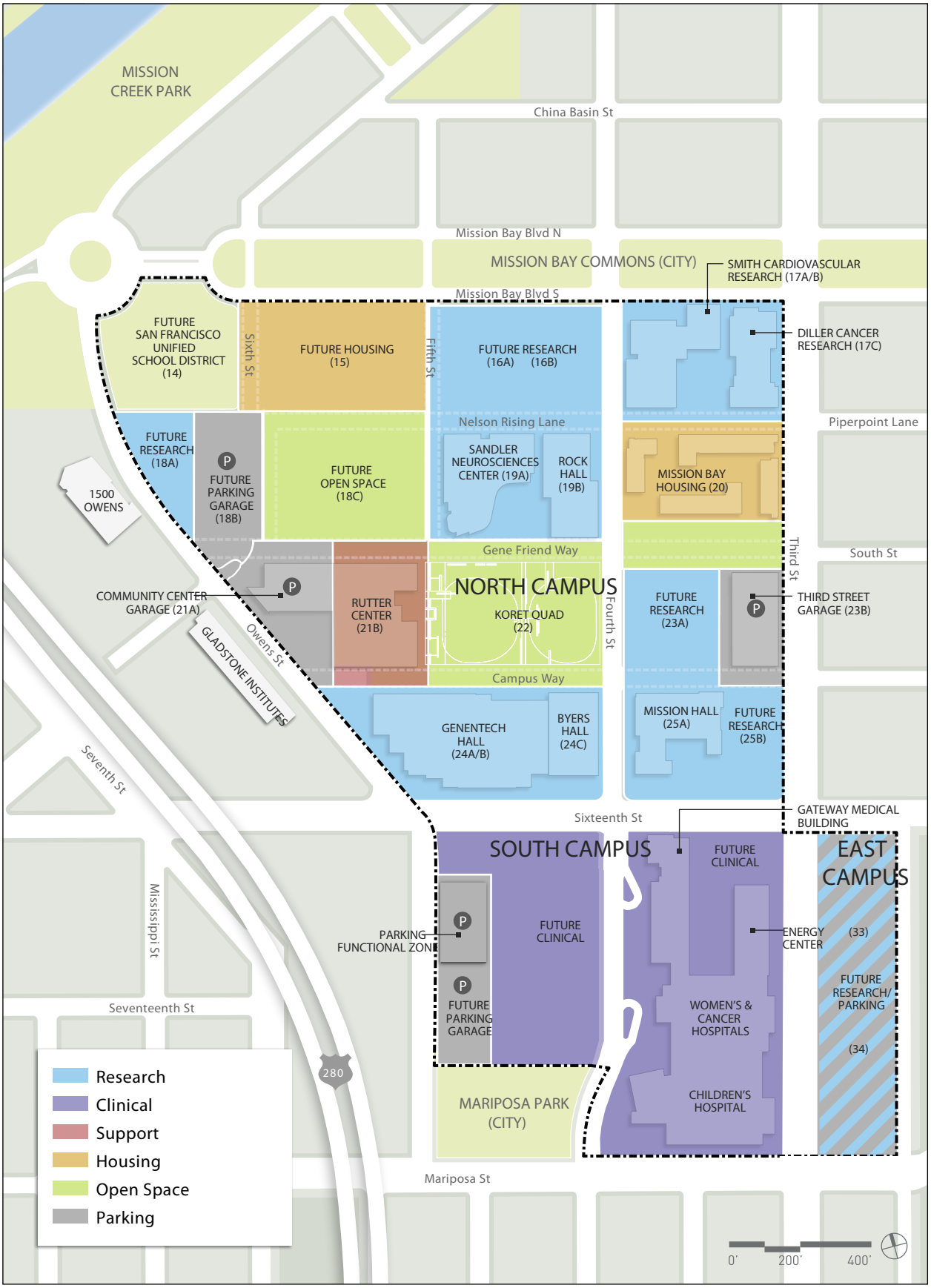
Figure 3-12

Mission Bay-Existing Functional Zones



SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-13

Mission Bay-Proposed Functional Zones

With the 991,800 gsf of new entitlement described above, under this LRDP the development capacity for the North Campus is proposed to increase from 2,650,000 gsf to 3,641,800 gsf. Although housing was not included in the original entitlement for the Mission Bay campus site (it was added in 2002 with LRDP Amendment #1), 786,100 gsf of the total capacity will be devoted to housing (387,400 gsf of existing housing on Block 20 and 398,700 gsf of new housing on Block 15).

On the South Campus, construction of a 124,500-gsf cancer outpatient building is anticipated prior to 2035, which will complete Phase 1 of the UCSF Medical Center at Mission Bay. This will bring the total space for Phase 1 to 993,500 gsf. Phase 2 facilities will be located on the west side of the South Campus, across the Fourth Street Public Plaza. Phase 2 Medical Center at Mission Bay is planned for after 2035 as a 261-bed hospital with additional outpatient space, totaling 793,500 gsf.

Development of the East Campus would accommodate 500,000 gsf. As a result, the total anticipated development through 2035 with the proposed expansion of the Mission Bay campus site (North, South, and East campuses) would be 5,135,400 gsf.

Under the 2014 LRDP, Phase 2 of the Medical Center at Mission Bay is assumed to occur after 2035, beyond the LRDP horizon. Therefore, the anticipated development of Phase 2 of the Medical Center at Mission Bay, about 793,500 gsf of additional hospital and outpatient space, is not included in the LRDP. However, it is evaluated in this EIR to provide a conservative analysis of potential impacts.

The preferred development on each block at the Mission Bay campus site is summarized below and shown on **Figure 3-14**.

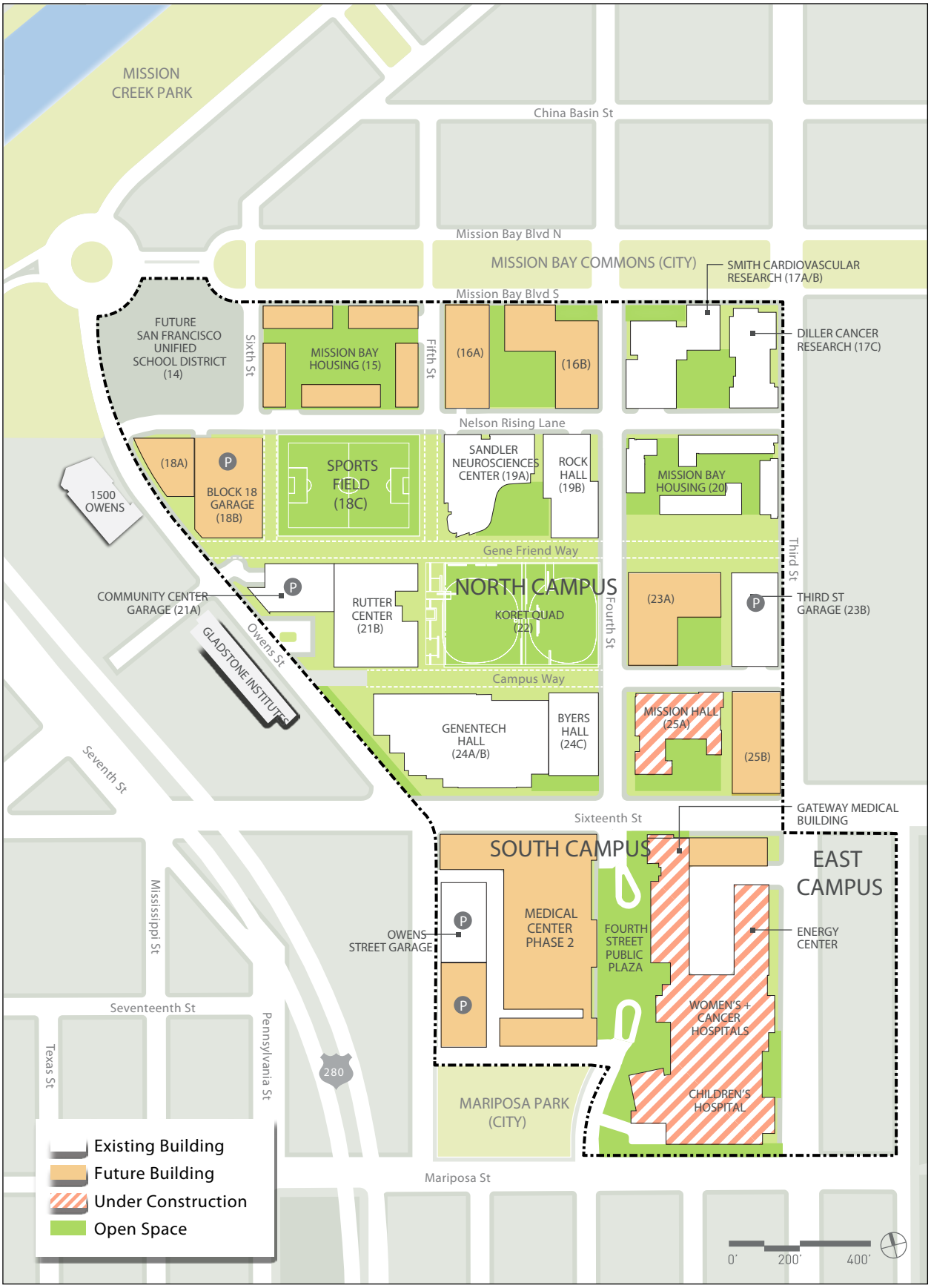
3.8.2.3 2014 LRDP Proposals at the Mission Bay Campus Site

The following proposals fulfill the 2014 LRDP site-specific objectives at the Mission Bay campus site:

Land Use

Develop Additional Research Capacity (Blocks 16, 18A, 23A, and 25B). Develop approximately 1,037,200 gsf of additional research capacity on Blocks 16, 18A, 23A, and 25B. Building heights would be within the parameters described in the *Contribution Agreement* with Catellus, and designed to minimize shading on open space areas. The tallest buildings (up to 160 feet, exclusive of rooftop mechanical equipment) would be located along major arterials (18A on Owens Street, and 25B at the corner of Third and Sixteenth streets). In accordance with the *Mission Bay Campus Master Plan and Design Guidelines*, buildings along Mission Bay Boulevard South (Block 16) would include a 30-foot step-back from the property line above 55 feet.

Block 16. One research and/or office building and a central utility plant totaling approximately 289,000 gsf, or alternatively two research buildings totaling up to 377,400 gsf may be built on Block 16. The current plan is to build a 53,000 gsf central utility plant, but the funding for this facility may not be realized, or may not



SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-14

Mission Bay-Proposed Plan

be available soon enough to be cost effective if too many buildings that it would have served are already built, each with their own utility systems, by the time funding for the central plant becomes available. The height of the buildings would be similar in height to other research buildings on the campus site, but would have a setback of 30 feet at the 55-foot height along Mission Bay Boulevard South in accordance with the *Mission Bay Campus Master Plan and Design Guidelines*. Building footprint configurations would be flexible, but the building on the east side of the block must preserve and respond to the north gateway area. If the central utility plant is constructed, a centralized Environmental Health & Safety facility could be located within the building, along with a Facilities Management landscape yard between the two buildings. Trucks would enter from Nelson Rising Lane and exit onto Mission Bay Boulevard South.

Block 18. An office and/or research building (possibly with clinics) with up to 193,000 gsf in a building up to 160 feet in height could be built on this block. To the east of it, a separate or attached eleven-story (110 feet in height) parking garage with approximately 1,540 spaces could be built. The ground floor of the garage would be sized to accommodate about 60 UCSF shuttles. A portion of the garage may be used for storage by Facilities Services. Garage entrances/exits would be on Nelson Rising Lane and mid-block on Owens Street to avoid conflicts with Gene Friend Way, which is a pedestrian corridor. A full-size, multi-purpose sports field would be developed on the eastern portion of the block, providing outdoor recreation and fitness space between the existing community center and future housing. Pedestrian connectivity through the block and to and from the garage would be facilitated in the layout of the facilities and landscape yard.

Block 23. An 85-foot tall 232,200 gsf research building would be constructed on the western side of the block in an "L" shape configuration along Fourth Street and the plaza, across from Koret Quad. This building may also contain clinics, classrooms, offices and retail uses, as well as police space not provided on the Block 15 site as part of the housing project, or elsewhere. A south-oriented courtyard would also be developed on the block between the existing Third Street Garage and the new building. If the child care center is developed on this block, part of the courtyard would be dedicated as an outdoor play yard. This building would relate to the public street, plaza and Koret Quad at the ground level with transparent facades, active uses and accessibility features.

Block 25. A research/office building, possibly with clinics and retail uses, would be developed on the eastern side of the block. Mission Hall is currently under construction on the western side of the block. All or a portion of the building may be constructed up to 160 feet in height and may contain up to 323,300 gsf. With its visually prominent location at the southeast corner of the research campus along Third and Sixteenth streets, it would be an architecturally important building that would be designed with sensitivity to the public realm and connect with the courtyard currently under construction.

Develop New Housing (Block 15). A housing complex of approximately 418,200 gsf (which includes 398,700 gsf of housing and 19,500 gsf of support), with approximately 774 beds in 523 units, is proposed on Block 15. The complex would be comprised of five or fewer buildings framing an interior courtyard. The buildings' heights would range from 55 feet in height along Mission Bay Boulevard South, 85 feet along Sixth Street and Nelson Rising Lane and up to 120 feet along Fifth Street, and would be designed to minimize shading on open space areas. In accordance with the *Mission Bay Campus Master Plan and*

Design Guidelines, development along Mission Bay Boulevard South would include a 30-foot step-back from the property line above 55 feet. The complex could include a 20,000 gsf child care center with about 200 child care slots. If the child care center is developed, approximately 15,000 square feet of the courtyard would be dedicated as an outdoor play yard. If child care is located elsewhere, approximately 12 additional units could be added to the housing program on Block 15. In addition, approximately 1,500 square feet could be considered on this block (or Block 23) for UCSF police.

Complete Phase 1 of the Medical Center (South Campus). The UCSF Medical Center proposes to build a 124,500-gsf cancer outpatient building at Third and Sixteenth streets, which would physically adjoin the hospital structure currently under construction and due to open in 2015. The outpatient cancer building would be the final building planned as part of Phase 1 of the UCSF Medical Center at Mission Bay.

Phase 2 of the Medical Center (South Campus). Phase 2 of the Medical Center at Mission Bay is planned to include a 261-bed hospital with additional outpatient space, totaling 793,500 gsf. While it is anticipated to be constructed after the LRDP horizon year of 2035, the impacts associated with its construction and operation are evaluated in this EIR in order to provide a conservative analysis of future development of the entire Mission Bay campus site.

Expand the Mission Bay campus site to include Blocks 33 and 34 (East Campus). The East Campus would be developed with up to 500,000 gsf and 500 parking spaces, and as part of the 2014 LRDP, the site would be functionally zoned for research and parking use. When the locations of specific uses on the parcel are identified, the functional zone for the East Campus will be updated accordingly. No specific UCSF programs have been identified yet to relocate to the site, and no specific building design is proposed. Proposed development would follow the *Mission Bay South Redevelopment Area Plan "Design for Development"* regarding building height, bulk, setbacks, maximum tower floorplate and other design matters. The site is within Height Zone 5 (HZ-5). Based on the *Design for Development* standards for the site, a building up to 90 feet in height (excluding rooftop mechanical equipment) may be developed on Block 34, with no bulk restrictions. On Block 33, a building with a base height of 90 feet (excluding rooftop mechanical equipment) may be developed, and a tower may be constructed up to a height of 160 feet (excluding mechanical equipment) with a maximum floorplate of 20,000 sq. ft. Development on the site would be setback 5 feet from Third Street. A minimum of 70% of block length frontage would be developed for streetwalls along Third Street and along Sixteenth Street.

> ***LRDP Variant*:** UCSF is considering the development of clinical uses for a portion of the 500,000 gsf on the Block 33 and 34 site. The amount of clinical space that may be developed has not yet been determined, but up to about 250,000 gsf of clinical space could be developed, with the remainder 250,000 gsf as research/office use. Clinical uses are a "secondary use" under the *Mission Bay South Redevelopment Plan* and would require a finding of consistency with the plan by the San Francisco Office of Community Investment and Infrastructure.

Open Space

Develop additional open space (Blocks 15, 16, and 23A). When Blocks 15, 16, and 23A are developed, courtyards are to be considered on those blocks to provide additional open space. If a child care center is included as part of proposed housing on Block 15, an

estimated 15,000 square feet of the courtyard could be dedicated as an outdoor play yard for the child care center, unless designated at another nearby location. If a central utility plant is built on a portion of Block 16, a portion of the courtyard may be needed by Facilities Services for outdoor storage and other support uses, or alternatively that function could be accommodated elsewhere.

Develop outdoor recreation space (Block 18C). A regulation-sized sports field for soccer and other games is under consideration on the eastern portion of the block, providing outdoor recreation and fitness space between the Rutter Center and future campus housing on Block 15.

Circulation, Transportation and Parking

Develop additional structured parking (Block 18B, 33/34, and 38). To support the future growth of the campus site and as existing surface parking lots are replaced by buildings, new structured parking is proposed on Block 18B, just east of the proposed research building on Block 18A. It would be constructed in two phases and may contain approximately 1,540 total parking spaces. The ground floor of the garage may be sized to accommodate about 60 UCSF shuttles. Garage entrances and exits would be proposed on Nelson Rising Lane and mid-block on Owens Street to avoid conflicts with Gene Friend Way, a pedestrian corridor. A portion of the garage may be used for storage by Facilities Services. In addition, up to 500 parking spaces could be developed on Blocks 33 and 34. Additional structured parking is anticipated on Block 38 on the Medical Center at Mission Bay site that could include up to 1,300 parking spaces.

Complete the street network. On the North Campus, Nelson Rising Lane (from Owens Street to the Sandler Neurosciences Center) and one-block segments of Fifth and Sixth streets (between Nelson Rising Lane and Mission Bay Boulevard South) is proposed for development. Nelson Rising Lane would continue to serve as a loading street for future buildings located there. Once these campus streets are completed, UCSF shuttle routes and stops may change in order to provide more direct access to these new buildings.

Increase bicycle and motorcycle parking capacity. As Mission Bay is further developed, UCSF plans to continue to add bicycle and motorcycle parking around new buildings, in the proposed garage on Block 18B, and in open space areas.

Utilities and Other Infrastructure

Block P15 pump station upgrade. UCSF is proposing to upgrade the Block P15 pump station in order to provide additional pumping capacity to accommodate 2014 LRDP development at the Mission Bay campus site. Potential upgrades proposed by UCSF include the replacement of existing pumps at the pump station with larger horsepower pumps required to serve increased University flow. Pre-existing deficiencies with the pump station as observed by SFPUC will not be corrected by UCSF.

Consider a central utility plant (Block 16). UCSF is considering a central utility plant on a portion of Block 16, potentially using cogeneration technology, as well as a redundant utility distribution loop for steam, chilled water, and high-temperature hot water, to help ensure that utility supplies to future buildings on the North Campus are not interrupted should a break or power outage in existing lines occur. If a central utility plant is determined not to be needed, as discussed previously, the site would be developed with research capacity.

3.8.3 Mount Zion

The UCSF Mount Zion campus site is approximately 7.6 acres on six contiguous city blocks in the Western Addition neighborhood of San Francisco. It is located approximately two miles northeast of the Parnassus Heights campus site and one mile east of the Laurel Heights campus site. The Mount Zion campus site is generally bounded by Bush Street to the north, Scott Street to the east, Post Street to the south and Broderick Street to the west. UCSF-owned buildings are concentrated on a 'main block' bounded by Sutter, Scott, Post, and Divisadero streets.

The Mount Zion campus site is located in the commercial district of a mixed-use neighborhood, and is fully integrated with the city street grid. Most non-UCSF buildings along Divisadero Street consist of residential and office uses above ground floor retail. Also, in the vicinity of the campus site are private medical office buildings that are not affiliated with UCSF. Kaiser Permanente Medical Center is located on Geary Boulevard, one block to the southwest. Residential uses are widespread to the north and west, as well as directly across Scott Street to the east of the main block.

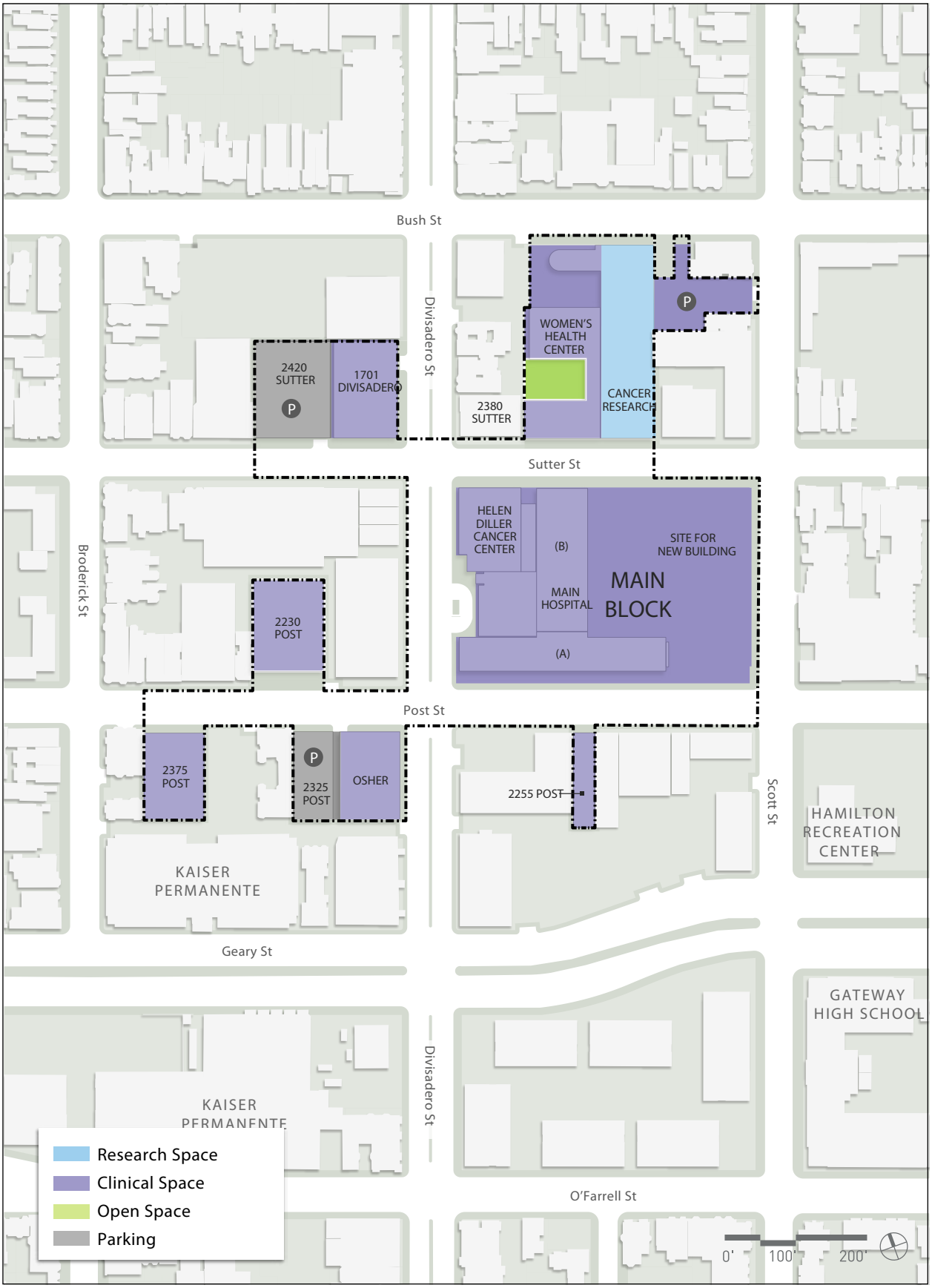
Clinical uses are predominant on the campus site. UCSF owns buildings at Mount Zion comprising 776,200 gsf and leases another 45,300 gsf of space within a quarter-mile of the site, for a total of 821,500 gsf. The UCSF Medical Center at Mount Zion is home of the Helen Diller Family Comprehensive Cancer Center, with 91 licensed inpatient beds and an average daily census of 50 patients; the UCSF Women's Health Center, Northern California's only nationally designated Center of Excellence in Women's Health; the Osher Center for Integrative Medicine; the Pain Management Center, Sleep Disorders Center, and Dialysis Center; and other outpatient programs. Cancer research is conducted in a building on Sutter Street.

About 1,840 UCSF faculty and staff are located at the Mount Zion campus site. There are about 1,300 daily and 314,000 annual visits to its outpatient facilities. It is estimated that Mount Zion has a daily population of nearly 4,760 employees, students, patients, and visitors. Based on the Medical Center's outpatient projections, the annual number of outpatient visits may rise to over 420,000 with the implementation of the 2014 LRDP. An additional 600 UCSF faculty and staff would be needed to support this increase in outpatient visitors, for a total of up to 2,400 employees.

To support these programs, UCSF owns and operates three parking garages and one parking lot with a total of 475 parking spaces. Other garages, lots and street parking are available nearby. Because parking in the vicinity is in high demand, patients and essential healthcare providers are given priority access to parking under UCSF's control.

3.8.3.1 Proposed Functional Zones

Currently, there is no functional zone map for the Mount Zion campus site. **Figure 3-15** illustrates the proposed campus boundary and functional zones. The proposed boundary encompasses only those buildings owned by UCSF. A majority of the site is proposed as Clinical, consistent with the predominance of inpatient and outpatient uses. The cancer research building is designated as Research. Support areas include structured parking controlled by UCSF.



SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-15

Mount Zion-Proposed Functional Zones

3.8.3.2 Proposed Plan

The Mount Zion campus site was identified as an outpatient hub in *LRDP Amendment #2*, which proposed the elimination of inpatient facilities at this site after relocation to the UCSF Medical Center at Mission Bay or Parnassus Heights. Accordingly, development at the Mount Zion campus site is expected to be for clinical use driven by the demand for outpatient space, in addition to addressing seismically compromised buildings. The hospital at the Mount Zion campus site will be repurposed as an ambulatory care center. Vacated space will be backfilled with growth of the cancer program, expansion of outpatient treatments, new clinics, and support spaces.

Approximately 75,500 gsf of additional outpatient space is proposed at the Mount Zion campus site through 2035. In addition, it is anticipated that some clinical programs at the Parnassus Heights campus site would eventually be relocated to the Mount Zion campus site, and nearby leased space would be consolidated into owned space in one or more new buildings on the main block.

The LRDP proposes to demolish the Hellman, Harold Brunn Institute, and Dialysis Center buildings (totaling approximately 85,000 gsf) and construct a new office/research building (see **Figures 3-16** and **3-17**). In addition, 2255 Post Street (7,450 gsf) is also proposed for retrofit or demolition. The new office/research building would be approximately 257,300 gsf; should 2255 Post Street be demolished, it would result in a net increase at the Mount Zion campus site of about 164,850 gsf or 172,300 gsf if the building was to remain and be retrofitted. UCSF currently has no plans to acquire additional property in the vicinity or expand the campus boundary.

3.8.3.3 2014 LRDP Proposals at the Mount Zion Campus Site

The following proposals fulfill the 2014 LRDP site-specific objectives at the Mount Zion campus site:

Land Use

Demolish the Hellman, Harold Brunn Institute, and the Dialysis Center buildings. These three buildings are located on the east side of the main block along Scott Street between Sutter and Post Streets. The Hellman and Brunn buildings are seismically compromised, and both of these building, as well as the Dialysis Center building, are considered obsolete. The LRDP proposes to demolish these three buildings, which total approximately 85,000 gsf. The occupants and programs would be relocated into the repurposed hospital buildings or located elsewhere. Demolition of the Hellman building is proposed to occur in 2016-2017, and the other two buildings would be demolished then as well, or at a later date when the building sites are needed for other purposes. In 2003, the Hellman building was determined to be potentially eligible for the CRHR. The Harold Brunn Institute and Dialysis Center buildings are not eligible for the NRHP or CRHR.

Construct new clinical and/or research space and additional parking. One or more buildings (or a phased building) may be built on the east side of the main block where the Hellman, Harold Brunn Institute, and Dialysis Center buildings are currently located. Such a building(s) may accommodate up to 257,000 gsf of space for clinical and/or research uses. A new building along Scott Street may be constructed up to 65 feet in height. To minimize the

SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-16

Mount Zion-Proposed Demolition

SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-17

Mount Zion-Proposed Building

building scale at the street level, it would be designed with a 20-foot step back at the 40-foot height level. It may also be set back from Post Street to align with the existing hospital building for a prominent landscaped entrance. A building on Sutter Street may be built up to 105 feet in height with a 20-foot setback along Sutter and Scott Streets. Although not subject to the City's height and bulk restrictions, a building designed in this manner would comply with the City's height limit, but not the bulk limit. Up to 185 parking spaces could be constructed in two levels underground, if not developed off-site. Streetscape improvements would be made along the affected street frontages.

Renovate and reuse the existing hospital. The inpatient facilities at the Mount Zion campus site are provided in two interconnected buildings. Neither building will meet SB 1953 requirements after January 1, 2030, so both will require decommissioning as inpatient facilities by that date. Subsequent to the opening of the UCSF Medical Center at Mission Bay in 2015, the inpatient uses at the Mount Zion campus site will be relocated to the Mission Bay campus site. UCSF proposes to repurpose the hospital as an ambulatory care center with ambulatory surgery. Vacated space would be backfilled with growth of the cancer program, expansion of outpatient services and support space. The decommissioned hospital may also accommodate program space and clinics displaced from buildings proposed for demolition, and from nearby leased space if and when leases are not renewed.

Retrofit or demolish the building at 2255 Post Street. The 7,450 gsf building at 2255 Post Street is seismically compromised, and would be retrofitted or demolished.

Open Space

Develop open space. When the new building(s) are constructed on the main block, a central courtyard could be developed for both campus and public use. The courtyard, which could be open-air or covered, would provide pedestrian access through the block.

Circulation, Transportation and Parking

Provide additional parking. When planning new building(s) on the main block, the need for additional parking should be considered, which could be provided in the building, underground, or off-site. Parking demand would be assessed when new development is pursued, and the community's input would be sought at that time. Patients and essential healthcare providers would continue to be given parking priority.

3.8.4 Mission Center

The three-acre Mission Center campus site is located at 1855 Folsom Street on the southern half of the block bounded by Fourteenth, Harrison, Fifteenth and Folsom streets. The site is in the northeast portion of San Francisco's mixed-use Mission District; it is located approximately three miles east of Parnassus Heights, 1.25 miles west of Mission Bay, and one mile northeast of San Francisco General Hospital.

The Mission Center campus site has only one building that is six stories tall and constitutes 291,700 gsf. The building fronts on Folsom Street, but may also be entered from the 207-space parking lot, which makes up the rest of the site, and which can be accessed from Harrison and Fifteenth streets. Approximately 800 employees work in the building in various departments

primarily consisting of Campus and Medical Center administrative units. The building also contains a small amount of research space as well as a cafe.

The existing building would remain under the proposed LRDP, and no changes in use are planned. As of 2014, UCSF has not identified any programmatic or space need at Mission Center. However, UCSF has evaluated options for developing this campus site should it be determined by UCSF in the future that such a need exists for additional program space. The capacity study analyzed the potential size and location of a new building and parking structure, and took into consideration urban design elements that would preserve the existing outdoor plaza, create additional open space, enhance the public realm and improve shuttle circulation, while also respecting the City's height and bulk limits. Because the new building would be constructed on an existing surface parking lot, the study also determined that a parking structure would need to be built first so that some parking on the site would be available for the displaced spaces.

3.8.4.1 2014 LRDP Proposals at the Mission Center Campus Site

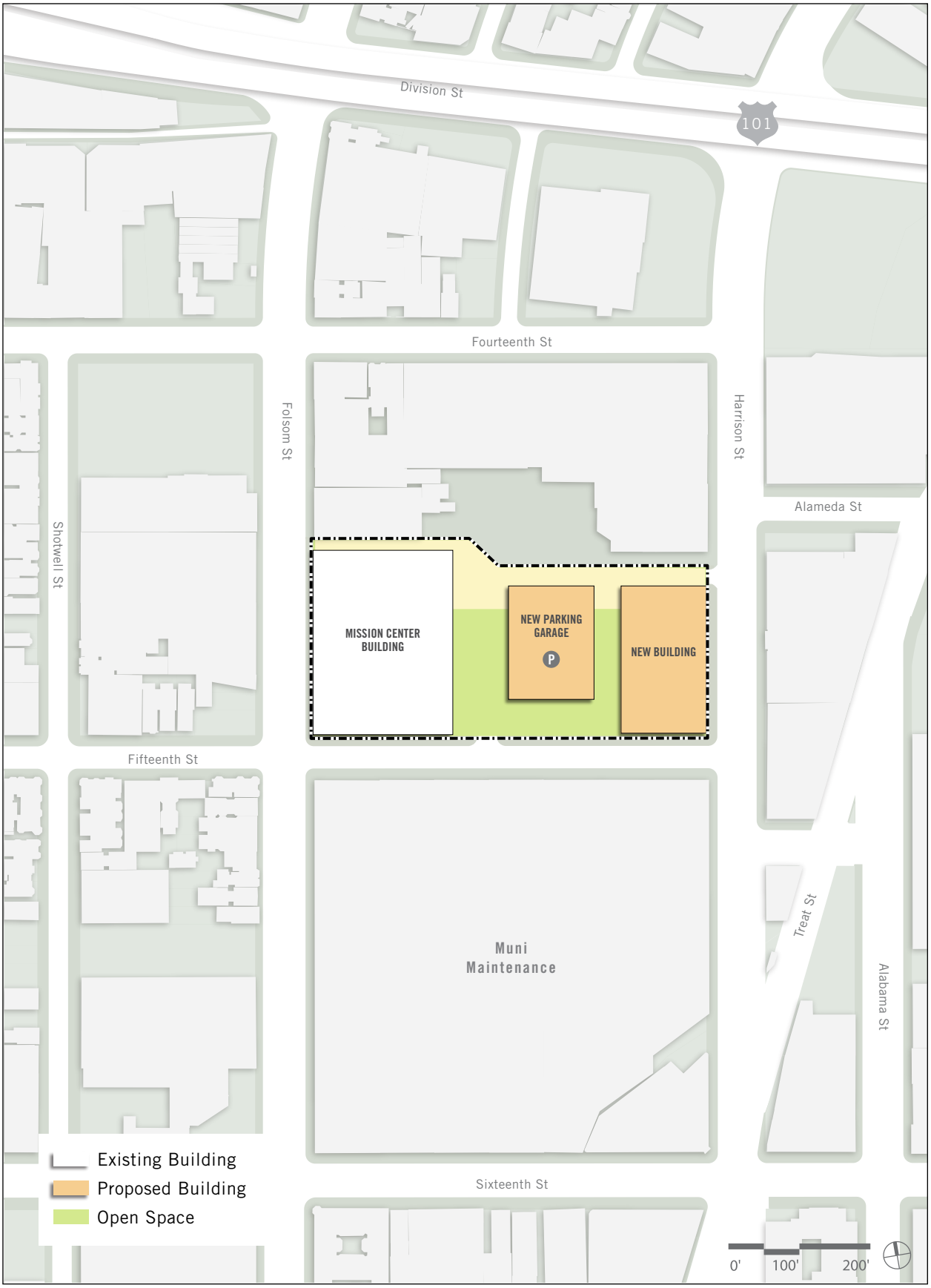
The following proposal fulfills the 2014 LRDP site-specific objectives at the Mission Center campus site:

> **Construct a new office building and additional parking.** For planning purposes, the LRDP assumes that a new building would be no greater than the City's height limit of 55 feet, which would allow for a four-story building up to 100,000 gsf. Therefore, it is assumed that Mission Center would increase to 390,700 gsf from the current 290,700 gsf with implementation of the LRDP. To help integrate the site into the surrounding fabric of the City, a small amount of retail space or another active use at the ground floor would be considered when this building is programmed. A five-story, approximately 96,000 gsf parking structure with up to 294 parking spaces would be built between the existing and new buildings. Additional open space with a southern exposure would be developed between the buildings. The existing shuttle stop would be relocated next to this open space, along Fifteenth Street where up to two on-street parking spaces would be removed. Vehicular ingress and egress would be from Harrison Street, with an egress-only driveway on Fifteenth Street, utilizing the existing curb cut. Access to the existing service dock would remain from Harrison Street, with Folsom Street as the service exit. Development of this new building would occur only if additional program space were determined to be needed in the future, and if and when funding becomes available. This LRDP proposal will be evaluated in the EIR at a program level. **Figure 3-18** shows the proposed development at Mission Center.

3.8.5 Other Campus Sites and Affiliations

3.8.5.1 Laurel Heights

The 10.3 acre Laurel Heights campus site is located at 3333 California Street. The campus site is located on the block bounded by California, Presidio, Euclid, and Laurel streets. The main building is approximately 350,000 gsf with three below-grade floors and four above-grade floors. A one-story annex building with 14,000 gsf is located at the corner of California and Laurel Streets. There are 212 parking spaces in the underground garage and 329 at ground level, for a total of 541 parking spaces.



SOURCE: UCSF

UCSF Long Range Development Plan Environmental Impact Report

Figure 3-18

Mission Center-Proposed Plan

The campus site is in the Laurel Heights neighborhood adjacent to the Presidio Heights neighborhood. The Jewish Community Center of San Francisco is located directly across California Street to the north. The California campus of the California Pacific Medical Center is a half mile to the west. The Laurel Heights campus site is approximately two miles northeast of the Parnassus Heights campus site and about one mile west of the Mount Zion campus site.

The Laurel Heights buildings were constructed in several phases between 1955 and 1966 but were not acquired by UCSF until 1985. There are approximately 1,200 employees at this campus site, which is the primary location of UCSF's social, behavioral and policy science research. A number of academic and campus administrative departments are located there along with food services, a conference center and a child care center.

UCSF is evaluating opportunities to consolidate remote campus sites in order to reduce operating and occupancy costs and to improve collaboration across campus sites. As part of this effort, UCSF has reviewed its long-term occupancy of the Laurel Heights campus site. Given the substantial capital investment required to maintain and extend the main building's useful life, UCSF is considering a long-term ground lease of the property to a third-party developer for a non-University use. If an agreement is reached, any future development plans for the site would be subject to City entitlement, including environmental review under the California Environmental Quality Act (CEQA).

If UCSF leases the site to a third party, it currently anticipates that it would continue to occupy the site for about five years. No change in use would occur during that time. Because a final decision on where or when to relocate programs from Laurel Heights has not yet occurred, no changes for the Laurel Heights campus site are proposed in this LRDP.

3.8.5.2 654 Minnesota Street

Located two blocks south of the Mission Bay campus site in the mixed-use Dogpatch neighborhood, the three-story 654 Minnesota Street building constitutes 65,500 gsf and sits on 0.92 acres. The building and its associated parking lot make up the south end of the block bounded by Indiana, Eighteenth, Minnesota, and Nineteenth streets. UCSF purchased the building in 2005 and renovated it to higher seismic standards that allow for the continuation of essential functions such as campus police and data services in the event of an earthquake. The building houses a variety of campus and Medical Center administrative units. There are approximately 200 UCSF personnel working in the building. Programs and uses at 654 Minnesota Street are expected to remain unchanged under the new LRDP.

3.8.5.3 Buchanan Dental Center

The Buchanan Dental Center is operated by UCSF's School of Dentistry. It is located at 100 Buchanan Street, approximately two miles east of the Parnassus Heights campus site. The facility is located on a 0.6-acre parcel within the boundaries of a 5.4-acre parcel that was formerly occupied by UC Berkeley Extension's San Francisco campus. UC Berkeley vacated the site in 2003. A private developer has undertaken a redevelopment project, 55 Laguna, on the remainder of the parcel, which will include 330 units of market-rate housing and 110 units for low-income

seniors, as well as retail uses and a community center. Construction began in the fall of 2013 and is slated for completion in early 2015.

The Buchanan Dental Center, a two-story, 18,200-gsf clinic building was constructed in 1979. The building contains dental laboratories, treatment and exam rooms, offices, and a classroom. There are approximately 25 UCSF personnel employed at the clinic. It is proposed that the clinic remain at this location for the foreseeable future.

3.8.5.4 Hunters Point

The 3.8-acre Hunters Point site is located at 800 and 831 Palou Avenue, adjacent to the former Hunters Point Naval Shipyard in the Bayview/Hunters Point neighborhood. It is approximately 3.2 miles south of the Mission Bay campus site. The Hunters Point site contains two single-story buildings that total approximately 20,500 gsf. The property is used as an animal care facility (vivarium), employing approximately 14 UCSF personnel. The surrounding land use is primarily industrial, with a pocket of residential to the north of and above the low-lying site.

The City has approved the Candlestick-Hunters Point Shipyard Development Plan, an extensive mixed-use redevelopment plan for the surrounding area that would include housing, retail, office, commercial, industrial, and open space uses. Because UCSF's facilities on this site are in relatively poor condition, UCSF is exploring the relocation of those functions and occupants and disposition of the site as part of the strategy to consolidate remote sites.

3.8.5.5 Oyster Point

The 5.7-acre Oyster Point site is located at 616 Forbes Boulevard in the City of South San Francisco. This property includes a warehouse from which UCSF provides distribution, storage and mail services; the warehouse has an adjacent parking lot. Some vendors deliver goods to Oyster Point that are then consolidated onto UCSF vehicles for delivery to campus sites. The building constitutes approximately 144,300 gsf. There are approximately 42 UCSF personnel working at the Oyster Point facility. Surrounding land uses include industrial, research, office, and distribution. Several biotechnology companies, such as Genentech, are located in close proximity to the site.

UCSF continues to evaluate other sites for centralized receiving, to potentially reduce the number of deliveries to each campus site. Relocation of functions from and subsequent disposition of Oyster Point is being considered as part of UCSF's strategy to consolidate remote sites. Should Oyster Point be relinquished as part of that strategy, a suitable site and relocation plan would need to be identified in order to accommodate the existing functions and operations at Oyster Point.

3.8.5.6 UCSF Fresno Center for Medical Education and Research

UCSF established a regional medical education program in Fresno in 1975 to provide training for doctors and other health care professionals in the Central San Joaquin Valley. The program was created with support from the California Legislature and the Veterans Administration to address the shortage of physicians practicing in California's San Joaquin Valley and to increase access to

continuing medical education in the region. UCSF Fresno provides medical education and physician training programs through community and university partnerships. Training for clinical residents (and in some programs, fellows) is available in: emergency medicine, family practice, general surgery, internal medicine, obstetrics/gynecology, pediatrics, psychiatry, and surgical critical care. As a regional medical campus, UCSF Fresno carries out its training and patient care through a network of affiliation agreements with a number of hospitals in the area, including the Community Healthcare Network (Clovis Community Medical Center, Fresno Heart & Surgical Hospital, and University Medical Center), the Veterans Affairs Medical Center, Children's Hospital Central California, Saint Agnes Medical Center, and Kaiser Permanente, as well as several community hospitals and other specialized facilities.

The UCSF Fresno Center for Medical Education and Research opened in 2004. The three-story, 84,200-gsf building sits on 3.02 acres. It serves as the hub of medical education and research at UCSF Fresno, and includes a clinical skills lab, a standardized patient center, the digital medical library, virtual classrooms, and research facilities.

UCSF expects to continue its academic, research, and clinical activities at Fresno, and UCSF uses are not anticipated to change under the LRDP.

3.8.5.7 San Francisco General Hospital

San Francisco General Hospital and Trauma Center (SFGH) is located in the Mission district, bordering the western portion of the Potrero Hill neighborhood (Figure 22). The site is generally bounded by U.S. Highway 101 to the north and east, Twenty-third Street to the south, and Potrero Avenue to the west. The area immediately surrounding SFGH is mostly residential, with some ground-floor, neighborhood-serving commercial activity, especially along Twenty-fourth Street.

SFGH is an acute-care medical center owned and operated by the City. UCSF does not own facilities at SFGH, but through an affiliation agreement with the City, UCSF faculty and physicians provide all of the medical care at SFGH in City-owned buildings. In addition, UCSF faculty conduct research at SFGH. UCSF leases or otherwise occupies space in exchange for services. There are approximately 2,000 UCSF faculty and staff at SFGH.

UCSF occupies approximately 257,800 gsf of research labs, office and clinic space on the SFGH campus in ten buildings (Buildings 1, 3, 5, 9, 10, 20, 30, 40, 80/90, and 100). Because the University of California Office of the President considers SFGH to be an adjunct campus to UCSF, it is subject to UC's Policy on Seismic Safety (Policy), which requires that all personnel be located in seismically safe buildings. Out of the total space occupied by UCSF at the SFGH campus site, approximately 175,000 gsf is in seismically compromised buildings. UCSF intends to continue to occupy Building 3, which is seismically safe, and Building 5, which the City plans to retrofit. UC does not own the land where SFGH is located, thus no functional zones are applied to this site.

To comply with the UC Seismic Safety Policy, UCSF will need to relocate its SFGH personnel. UCSF is considering relocation of its UCSF personnel to a new, UCSF-constructed and

seismically robust research building of about 175,000 gsf. The building may also accommodate UCSF personnel now in off-site leased space. As of 2014, it is proposed on the existing SFGH surface parking lot (B/C Lot) located between the existing hospital (SFGH Building 5) and Twenty-third Street. Due to the timing of the proposed project, the new research building will undergo its own environmental review process, separate from the 2014 LRDP EIR.

Parking spaces displaced by the new building may be replaced on the SFGH campus. One option being explored is the expansion of the City's parking structure on Twenty-third Street. This potential expansion would extend the garage footprint toward Twenty-fourth Street on the surface parking lot of the garage site. This project would be undertaken by the City, as it is located on City property.

Under the LRDP, UCSF expects to maintain its activities and affiliation at SFGH, and no changes in UCSF uses are anticipated at SFGH.

3.8.5.8 San Francisco Veterans Affairs Medical Center

The 29-acre San Francisco Veterans Affairs Medical Center (SFVAMC) Fort Miley Campus is located in the northwest area of the City, adjacent to the Outer Richmond district. It is bounded by Clement Street and Seal Rock Drive and the Outer Richmond neighborhood to the south, and otherwise by the National Park Service's Golden Gate National Recreation Area (GGNRA). SFVAMC also leases space in 1700 Owens Street, west of UCSF's Mission Bay campus site.

SFVAMC has four overarching missions: patient care, education, research and Department of Defense Support/Emergency Management. The SFVAMC is home to the Northern California Institute for Research and Education (NCIRE), a non-profit with the mission to improve the health and well-being of veterans and the general population by supporting world-class biomedical research programs conducted by UCSF faculty. SFVAMC-based faculty are supported by more National Institute of Health grants than any other group in the VA system.

The SFVAMC is owned by the US Department of Veterans Affairs (the VA) and has been affiliated with UCSF as a teaching hospital for over 50 years. All physicians are recruited jointly by the VA and the UCSF School of Medicine. UCSF faculty and staff – 189 clinical residents and fellows and 40 allied health professionals – are SFVAMC employees. Annually, more than 700 UCSF trainees from 36 programs rotate through the SFVAMC, providing one-third of all of UCSF's medical training. The SFVAMC has no independent training programs of its own.

Although UCSF faculty and their practices are physically located at the SFVAMC site, UC does not own, lease, or otherwise control any of the space. For these and other reasons, SFVAMC space is not part of the proposed space program in this LRDP, and no functional zones are proposed.

The *SFVAMC 2012 LRDP* and the updated *2014 LRDP* (prepared by SFVAMC, U.S. Department of Veterans Affairs) identified the need to retrofit existing buildings, in order to meet the most recent seismic safety requirements, and to expand its research program at another off-site location. The SFVAMC's LRDP has a planning horizon of 2027; it was developed to meet the SFVAMC's particular requirements and is unrelated to UCSF's LRDP. In 2013, the SFVAMC established a

42,000 square-foot research center at 1700 Owens Street in the Mission Bay area; the SFVAMC intends to lease this space for 10 years. SFVAMC also plans to begin construction of a 100,000 gsf laboratory building at the Fort Miley Campus in 2015 as part of its seismic upgrade requirements. Due to space limitations on the Fort Miley Campus, the SFVAMC is working to establish a larger, permanent academic presence in the Mission Bay area. Any real estate and operating transaction would require federal Office of Management and Budget approval and legislation would need to be approved by Congress. UCSF expects to maintain its activities as an affiliated institution at the SFVAMC, and no changes in uses are proposed.

3.8.6 Leased Sites

UCSF leases approximately 1.05 million gsf in San Francisco (including space at SFGH). UCSF is actively engaged in an effort to reduce the number of leased locations by consolidating leases into UCSF-owned space to improve operational efficiency. For the purposes of the LRDP, it is assumed that UCSF's total lease portfolio will be reduced to about 750,000 gsf over the LRDP planning horizon to provide long-term flexibility and account for fluctuations associated with changes in community health care needs, growth in clinical and research programs and other unforeseen needs.

As of April 2014, UCSF occupies a number of leases larger than 10,000 gsf within a quarter-mile of its main campus sites at Parnassus Heights, Mission Bay, and Mount Zion. The following is a summary of UCSF's main leased sites that are greater than 10,000 gsf and located beyond a quarter of a mile from UCSF's three major campus sites. These sites are not addressed individually in the LRDP or the EIR.

3.8.6.1 San Francisco

50 Beale Street

UCSF leases approximately 57,400 gsf at 50 Beale Street in downtown San Francisco for Global Health Sciences and the Center for AIDS Prevention Study. UCSF will continue to lease space at this location until most, if not all, of the occupants have been relocated to Mission Hall on the Mission Bay campus site after the building opens in 2014.

220 Montgomery Street

UCSF leases approximately 38,300 gsf at 220 Montgomery Street in downtown San Francisco for use by University Development and Alumni Relationships. UCSF expects to continue to occupy this location until 2017, and then to determine if the lease should be renewed or if occupants should be consolidated into owned space at Mission Bay as part of UCSF's lease consolidation strategy.

250 Executive Park Boulevard

UCSF leases approximately 42,400 gsf at 250 Executive Park Boulevard in the Bayview/Candlestick Park area, located off U.S. Highway 101 near the San Francisco County line. Executive Park is part of a privately-owned mixed-use development. The space leased by UCSF is used by the Medical

Center's Information Technology Center. UCSF plans to remain at 250 Executive Park through the end of the term of its lease, after which the University anticipates vacating the building due to its seismic condition.

982 Mission Street

UCSF leases approximately 24,800 gsf at 982 Mission Street in the South of Market district for the Citywide Case Management and Community Focus Center, which is affiliated with UCSF and SFGH Department of Psychiatry programs. The center provides outpatient psychiatric care, crisis intervention, therapy and clinical case management services. No changes are planned at this location.

1930 Market Street

UCSF Alliance Health Project Center is located in the Upper Market neighborhood at 1930 Market Street, on the north side of the street between Guerrero Street and Duboce Avenue. UCSF leases approximately 14,800 gsf in this two-story building. It is a community-based clinic and counseling center, also known as the AIDS Health Center, affiliated with the Department of Psychiatry at UCSF, San Francisco General Hospital and the UCSF AIDS Research Institute. UCSF plans to remain at this location.

2727 Mariposa Street

The UCSF Trauma Recovery and Treatment Center, affiliated with SFGH, is located at 2727 Mariposa Street in the Mission District. UCSF leases approximately 12,000 gsf in this mixed-use building and has no plans to relocate.

3360 Geary Boulevard

UCSF leases approximately 19,300 gsf at 3360 Geary Boulevard, between Parker and Commonwealth streets. UCSF Medical Center administrative support units occupy the building space. For the present, UCSF intends to remain at this location, although the University may consider moving the occupants into owned space as part of UCSF's lease consolidation strategy.

China Basin Building (185 Berry Street)

UCSF leases approximately 187,000 gsf at 185 Berry Street in the China Basin Landing Building, situated between Third and Fourth streets, next to AT&T Park and one block south of the Fourth and King Street Caltrain Station. The UCSF Imaging Center, Department of Epidemiology and Biostatistics and several other research, academic and campus administration units are located in this building. Some of UCSF's units at China Basin will be moving into owned space or other leased space. Other programs will likely remain at China Basin in the near-term, but may eventually move into owned space at Mission Bay or into other leased space as part of UCSF's lease consolidation strategy.

3.8.6.2 Emeryville

2000 Powell Street

The UCSF Medical Center's Medical Group Business Services (MGBS) department is located at 2000 Powell Street in Emeryville. UCSF currently leases approximately 15,600 gsf in this mixed-use building, and has no plans to relocate.

6425 Christie Street

UCSF Medical Center accounting is located at 6425 Christie Street in Emeryville. UCSF currently leases approximately 27,900 gsf in this mixed-use building, and has no plans to relocate.

3.9 Projects and Activities Not Included in the LRDP EIR

The following is a list of projects and activities that are not included in the LRDP EIR.

3.9.1 Parnassus Heights

3.9.1.1 Mount Sutro Management Project

The Draft EIR for the Mount Sutro Management Project was issued on January 18, 2013. The proposal would implement a number of management activities in the Mount Sutro Open Space Reserve. These management activities include thinning the forest, native plant restoration and enhancement, conversion planting (removal of non-native trees and plants and conversion to native species) in select areas and construction of new trails. The proposed management activities have subsequently been revised and no longer include construction of new trails. Proposed trails are now being analyzed as part of proposed activities under the LRDP and are described in this EIR in Section 3.7.

UCSF is committed to maintaining the Mount Sutro Open Space Reserve so it can be enjoyed by visitors from throughout the city, the Bay Area, and elsewhere. UCSF's primary responsibility as the steward of the Reserve must be ensuring the safety of students, employees, patients, visitors, and neighbors, as well as ensuring the safety of campus and neighboring structures, particularly in light of the elevated fire danger resulting from California's current and periodic drought conditions.

To ensure the safety of visitors and nearby structures, UCSF retained a professional forester to help develop a plan for the Reserve that focused on reducing the danger of wildfire. Proposed hazard reduction measures, consistent with best management practices applied throughout California in forests located near urban areas, were developed and presented to the community in November, 2013. As of this writing, UCSF is carefully considering the public feedback received

to date—responding to both previous forest management proposals and to the proposed fire hazard reduction measures presented in November, 2013—to determine the best path forward.

Because this project is currently underway with its own environmental review, it is not included as part of the LRDP EIR.

3.9.2 Mission Bay

Block 14 of the Mission Bay campus site is currently reserved for use by the San Francisco Unified School District (SFUSD) as a public school site. Per the Contribution Agreement through which the Mission Bay campus site was acquired by the Regents, the SFUSD has until 2027 to request conveyance of the 2.4-acre Block 14 for use as a school site. UCSF fully expects SFUSD to develop the site for a school. However, if the SFUSD does not request Block 14 during that timeframe, UCSF may develop Block 14 for its own use after the necessary planning, environmental review and amendment of the LRDP. The use and configuration of the site would be determined at that time.

3.9.3 Laurel Heights

As described previously, UCSF is reviewing its use of the Laurel Heights campus site. No change in UCSF's use is currently proposed at the Laurel Heights campus site thus it will not be studied in the EIR.

3.9.4 San Francisco General Hospital

As described previously, UCSF will need to vacate seismically compromised buildings at SFGH and is considering the construction of a new research building of about 175,000 gsf on the existing parking lot along Twenty-third Street. Due to the timing of this proposed project, the proposed SFGH Research Building will undergo its own UCSF environmental review process, separate from the LRDP EIR.

Under the LRDP, UCSF expects to maintain its activities and affiliation at SFGH and no changes in UCSF uses are anticipated at SFGH.

3.10 Community Planning Principles

While the LRDP Objectives described in Section 3.4 are intended to guide UCSF's physical development under the 2014 LRDP and serve as criteria against which future projects will be evaluated for consistency with the LRDP, UCSF has partnered with its neighbors to also prepare *Community Planning Principles*. These Principles formalize UCSF's commitment to communicate with neighbors regarding its space needs and potential future development, in order to identify potential community concerns that may arise from UCSF's physical development prior to the time that individual projects are brought forward for approval.

The *Community Planning Principles* are intended to aid UCSF in both complementing and advancing the planning priorities of the City and of its campus neighbors, and were jointly developed by the UCSF Community Advisory Group (CAG) and the UCSF LRDP Oversight Committee. The five Overarching Principles describe how UCSF will communicate with neighbors about its physical development plans both on-and off-campus, and consider the cushioning of impacts that result from UCSF's development. The five Overarching Principles are: (1) community consultation, to the extent allowed by confidentiality agreements governing real estate transactions, regarding property acquisition in neighborhoods under certain circumstances, or intensify use of existing property; (2) community notification when UCSF acquires property, including notification on a website, notice to the CAG and other neighbors as requested; (3) consider cushioning actions to offset neighborhood impacts, if any, as a result of UCSF property acquisition, development, and operations; (4) provide "proportional share" funding to the City to pay for adopted mitigation measures that are the responsibility of the City and identified in CEQA documents prepared for UCSF projects; and (5) provide a community involvement mechanism for the ongoing coordination and inclusion of neighborhood and community-based organizations in monitoring UCSF's planning and development activities, through the UCSF CAG and/or its sub-committees, the CAG Action Teams.

The *Community Planning Principles* are inspired by the 1996 LRDP Goals and Objectives as well as by the 2008 UCSF Mission Bay Community Planning Principles—all of which resulted from campus-community collaboration. The *Community Planning Principles* supersede the 1996 LRDP Goals and Objectives and the *2008 UCSF Mission Bay Community Planning Principles*, and apply to UCSF's development throughout San Francisco, including at existing campus sites ("on-campus development") as well as at other locations ("off-campus development"), as of adoption of the 2014 LRDP and at locations which may be proposed in the future under the LRDP.

CHAPTER 4
Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology

4.0 Introduction

Chapter 4 includes discussion of baseline conditions and presents the thresholds of significance ("Significance Standards") used in this EIR to assess the program-level impacts of the 2014 LRDP. Following this introductory material, the rest of this chapter is divided into 15 major sections, one for each environmental topic considered. Each major section contains: environmental and regulatory regional setting information regarding the environmental topic, relevant background and regulatory material, the Significance Standards and the analysis methodology for the topic. The Regional Setting section describes those regional baseline conditions pertinent to an environmental topic and thus, provides the context for an analysis of potential impacts resulting from implementation of the 2014 LRDP. Site-specific setting information applicable to a particular proposal at a campus site is presented in the relevant chapter in which campus site impacts are discussed (i.e., Chapters 6 through 9). The Regulatory Considerations section summarizes relevant federal, state and local laws that govern various aspects of an environmental topic.

The preparation of this EIR was preceded by an Initial Study (included as Appendix A), which determined that the 2014 LRDP would not result in certain identified impacts. Each of the environmental resource sections clearly identifies those effects that were adequately addressed in the Initial Study and are therefore not evaluated further in this EIR. The topics of Agriculture and Forestry Resources and Mineral Resources were determined in the Initial Study to require no further analysis in the EIR. Accordingly, these topics are not discussed in this EIR.

4.0.1 Baseline

The environmental setting sections describe the baseline physical environmental conditions. For purposes of the analyses in this EIR, the baseline is the most recent completed academic year: 2012-2013.

This EIR evaluates environmental impacts in terms of changes resulting from implementation of the 2014 LRDP as compared to existing conditions. With a few exceptions as stated in the text, the

conditions that would result at the LRDP planning horizon year (2035) are compared to baseline conditions to characterize the changes that would result from implementing the 2014 LRDP.

4.0.2 Levels of Significance

This EIR uses a variety of terms to describe the levels of significance of adverse impacts identified during the course of the environmental analysis. The following are definitions of terms used in this EIR:

- **Less than Significant Impact**. Impacts that are adverse but are not substantial because they do not exceed the specified standards of significance.

- **Potentially Significant**. Impacts that exceed the defined standards of significance and that may be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures.

- **Significant and Unavoidable**. Impacts that exceed the defined standards of significance and that cannot be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures.

4.0.3 Analysis of Cumulative Effects

The geographic extents of potential cumulative effects of the 2014 LRDP differ according to the environmental topic. For each environmental topic area, the analysis specifies the geographic scope of the cumulative impact, considers whether implementation of the 2014 LRDP in conjunction with past, present, and probable future projects would result in potentially significant cumulative impacts, and finally, determines whether the LRDP's contribution to that effect would be "cumulatively considerable." Cumulative impacts of the 2014 LRDP are discussed in Chapter 10 of this EIR.

4.1 Aesthetics

This section presents the Regional Setting, Regulatory Considerations, Significance Standards, and Analysis Methodology for the evaluation of Aesthetics impacts. 2014 LRDP Aesthetics effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Aesthetics effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.1.1 Regional Setting

The regional setting for aesthetics is the City of San Francisco, a relatively dense urban environment that is built out in most areas. Visual resources and issues within the City focus predominantly on protection of waterfront views and long-range views and encouragement of development that is compatible with adjacent existing or planned development and neighborhoods. Each campus site is located in a visually distinct area of the City, characterized by natural landforms and topography, existing buildings and unique land use patterns.

4.1.2 Regulatory Considerations

4.1.2.1 UCSF Facilities Design Guidelines

New development at UCSF is guided by the *Facilities Design Guidelines*. The guidelines set forth design objectives and special considerations for UCSF projects, with an emphasis on a project's functional requirements, overall economy and technical guidelines.

The *Facilities Design Guidelines* also contain specific policies related to landscaping at UCSF campus sites. These policies include designing landscapes at entrances and exits to UCSF facilities (e.g., roadways, parking lots and pedestrian areas) to maximize visibility and allow adequate lighting. Vegetation should be compatible with the natural limitations presented by the Bay Area's climate and soil conditions, and also be appropriate for man-made environments (e.g., adequate for use as street trees). Additional policies related to landscaping include incorporating water and energy conservation features and utilizing low-maintenance materials.

4.1.2.2 UCSF Physical Design Framework

Development at UCSF is also guided by the *Physical Design Framework*, which sets forth a vision for the physical development of all UCSF campus sites. It serves as the foundation for UCSF to plan and design future projects according to a clear and consistent set of planning and design principles, guidelines and strategies. The *Physical Design Framework* contains six planning principles that are universally applicable to UCSF campus sites. They express key thematic concepts of Context, Connectivity, Cohesiveness, Collegiality, Community and Conservation.

Each of the above principles contains related specific guidelines, such as designing buildings to fit within their urban context, considering massing, style, pattern and color of buildings in the vicinity; relating buildings to pedestrians and scale to human activity and visual interest; providing a positive campus interface at campus edges; providing comfortable, activated campus open spaces; and incorporating sustainability features in buildings.

4.1.2.3 San Francisco General Plan

The City's General Plan includes policies that pertain to views and visual quality. The policies most relevant to aesthetics are contained in the Urban Design Element of the General Plan. Policies 1.1 through 1.5 of the City Pattern section of the Urban Design Element relate to the appearance of buildings and landscaping, and their total effect that characterizes the various city districts. These policies also recognize and protect major public views in the city, with particular attention to views of open space. Policies 2.4 through 2.6 of the Conservation section of the Urban Design Element address notable landmarks of aesthetic or other importance, as well as convey a need to respect the character of nearby older development in the design of new buildings. The Major New Development section of the Urban Design Element, Policies 3.1 through 3.7, relate to building design and the visual relationship between new and established development, with an emphasis on promoting a harmonious relationship between existing and new buildings, relating building heights to important attributes of the city pattern and to heights of existing buildings, and recognizing the special urban design problems posed in development of large properties. Policy 4.15 of the Neighborhood Environment section of the Urban Design Element includes requirements for protecting the livability and character of neighborhoods from intrusion of incompatible new development. Although the University is not subject to local planning policies whenever using land under its control in furtherance of its educational mission, the University strives to be consistent with local policies where feasible.

4.1.2.4 San Francisco Planning Code

The standards contained within the San Francisco Planning Code are used to analyze the potential wind and shadow impacts of projects. San Francisco Planning Code Section 148 establishes, in certain districts of San Francisco, wind speed criteria for the comfort and safety of pedestrians. Wind speeds in excess of 26 miles per hour (equivalent wind speed for a single hour of the year) are considered hazardous. As a general rule, structures less than 100 feet tall are not considered to be of sufficient height to alter wind speeds at ground level and are therefore usually not evaluated for wind effects. San Francisco Planning Code Section 295 generally prohibits development above a height of 40 feet if it would cause significant new shadow on open space under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, at any time of the year.

4.1.3 Significance Standards

Would the implementation of the proposed 2014 LRDP:

a) Have a substantial adverse effect on a scenic vista?

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

e) Exceed the LRDP EIR significance standard by substantially reducing sunlight or significantly increasing shadows in public open space areas, or by increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code?

Regarding criterion b), after evaluation of the activities proposed by the 2014 LRDP, the Initial Study concluded that implementation of the 2014 LRDP would clearly result in no impact or a less-than-significant impact. Therefore, this criterion is not discussed further in the EIR.

4.1.4 Analysis Methodology

For purposes of this EIR, the visual impact assessment provides a description of the physical setting surrounding UCSF campus sites to illustrate the backdrop against which impacts of the 2014 LRDP are evaluated. The scale, massing, bulk and form of the proposed 2014 LRDP development proposals are evaluated in the context of surrounding development. The existing physical characteristics include short-range and long-range views; the type, height and scale of existing development on or near a campus site; man-made landmarks such as major highways or skyline views; and natural landmarks such as hillsides or San Francisco Bay. In general, views from public streets and parks are emphasized; impacts on private views are not considered under CEQA. Generally, this analysis does not evaluate the visual impacts of final site plans or building designs for LRDP development proposals unless specific design information is available at this time. Basic assumptions are discussed regarding the physical appearance of proposed new buildings and other LRDP activities.

In addition, Public Resources Code Section 21099(d), effective January 1, 2014, provides that, "aesthetics and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site located within a transit priority area shall not be considered significant impacts on the environment." Accordingly, aesthetic impacts are no longer to be considered in determining if a project has the potential to result in significant environmental effects for projects that meet all of the following three criteria:

a) The project is in a transit priority area;
b) The project is on an infill site; and
c) The project is residential, mixed-use residential, or an employment center.

Activities proposed by the 2014 LRDP would have a significant effect if they would result in pedestrian-level wind speeds that exceed the hazardous level as established by San Francisco Planning Code Section 148, or if it would result in substantial new shadows on designated public open space under the jurisdiction of the Recreation and Park Commission during daylight hours. Shadow impacts on the usability of public open space not under the jurisdiction of the Recreation and Park Commission are also considered.

4.2 Air Quality

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Air Quality impacts. 2014 LRDP Air Quality effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Air Quality effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures,* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.2.1 Regional Setting

4.2.1.1 Climate and Meteorology

UCSF's campus sites are located within the San Francisco Bay Area Air Basin. The air basin's moderate climate steers storm tracks away from the region for much of the year, although storms generally affect the region from November through April. San Francisco's proximity to the onshore breezes stimulated by the Pacific Ocean provide for generally very good air quality in the San Francisco area.

Temperatures in the San Francisco area average in the mid-50s annually, generally ranging from the low 40s on winter mornings to mid-70s during summer afternoons. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby San Francisco Bay. In contrast to the steady temperature regime, rainfall is highly variable and confined almost exclusively to the "rainy" period from November through April. Precipitation may vary widely from year to year as a shift in the annual storm track of a few hundred miles can mean the difference between a very wet year and drought conditions.

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants regionally. The project campuses lie within the Peninsula climatological subregion. Marine air traveling through the Golden Gate is a dominant weather factor affecting dispersal of air pollutants within the region. Increased temperatures create the conditions in which ozone formation can increase.

4.2.1.2 Ambient Air Quality – Criteria Air Pollutants

As required by the 1970 federal Clean Air Act, the United States Environmental Protection Agency (USEPA) initially identified six criteria air pollutants that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. USEPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public-health-based and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are the six criteria air pollutants originally identified by USEPA. Since that time, subsets of particulate matter have been identified for which

permissible levels have been established. These include particulate matter of 10 microns in diameter or less (PM_{10}) and particulate matter of 2.5 microns in diameter or less ($PM_{2.5}$).

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with jurisdiction for regulating air quality within the nine county San Francisco Bay Area Air Basin (SFBAAB). The region's air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. **Table 4.2-1** presents a five-year summary for the period 2009 to 2013 of the highest annual criteria air pollutant concentrations, collected at the air quality monitoring station operated and maintained by the BAAQMD at Sixteenth and Arkansas Streets, in San Francisco's lower Potrero Hill area, which is the closest monitoring station to the campus sites. Table 4.2-1 also compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (state or federal). Concentrations shown in bold indicate an exceedance of the standard.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds or VOC by some regulating agencies) and nitrogen oxides (NOx). The main sources of ROG and NOx, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Table 4.2-1 shows that, according to published data, the most stringent applicable standard, the state 1-hour standard of 9 parts per hundred million [pphm], was not exceeded and the federal 8-hour standard of 8 pphm was also not exceeded in San Francisco between 2009 and 2013.

Carbon Monoxide (CO)

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table 4.2-1, the more stringent state CO standards were not exceeded between 2009 and 2013. Measurements of CO indicate hourly maximums ranging between 9% to 29% of the more stringent state standard, and maximum 8-hour CO levels that are approximately 19% to 32% of the allowable 8-hour standard.

TABLE 4.2-1
SUMMARY OF SAN FRANCISCO AIR QUALITY MONITORING DATA (2009–2013)

Pollutant	Most Stringent Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured[a]				
		2009	2010	2011	2012	2013
Ozone						
- Days 1-Hour Standard Exceeded		0	0	0	0	0
- Maximum 1-Hour Concentration (pphm)	>9 pphm[b]	7	8	7	7	7
- Days 8-Hour Standard Exceeded		0	0	0	0	0
- Maximum 8-Hour Concentration (pphm)	>7 pphm[c]	6	5	5	5	6
Carbon Monoxide (CO)						
- Days 1-Hour Standard Exceeded		0	0	0	0	0
- Maximum 1-Hour Concentration (ppm)	>20 ppm[b]	4.3	1.8	1.8	2.0	1.8
- Days 8-Hour Standard Exceeded		0	0	0	0	0
- Maximum 8-Hour Concentration (ppm)	>9 ppm[b]	2.9	1.4	1.2	1.2	1.4
Suspended Particulates (PM_{10})						
- Days 24-Hour Standard Exceeded[d]		0	0	0	1	0
- Maximum 24-Hour Concentration ($\mu g/m^3$)	>50 $\mu g/m^3$ [b]	36	40	46	**51**	44
Suspended Particulates ($PM_{2.5}$)						
- Days 24-Hour Standard Exceeded[e]		1	3	2	1	2
- Maximum 24-Hour Concentration ($\mu g/m^3$)	>35 $\mu g/m^3$ [c]	**36**	**45**	**47**	**36**	**49**
- Annual Average ($\mu g/m^3$)	>12 $\mu g/m^3$ [b]	9.7	10.5	9.5	8.2	10.1
Nitrogen Dioxide (NO_2)						
- Days 1-Hour Standard Exceeded		0	0	0	1	0
- Maximum 1-Hour Concentration (pphm)	>10 pphm[c]	6	9	9	**12**	7
Sulfur Dioxide (SO2)[f]						
- Days 24-Hour Standard Exceeded		ND	ND	ND	ND	ND
- Maximum 24-Hour Concentration (ppb)	>40 ppb[b]	ND	ND	ND	ND	ND

NOTES:
Bold values are in excess of applicable standard. "ND" indicates that data is not available.
ppm = parts per million; pphm = parts per hundred million; ppb=parts per billion
$\mu g/m^3$ = micrograms per cubic meter
ND = No data or insufficient data

[a] Number of days exceeded is for all days in a given year, except for particulate matter. PM_{10} and $PM_{2.5}$ are monitored every six days and therefore the number of days exceeded is out of approximately 60 annual samples.
[b] State standard, not to be exceeded.
[c] Federal standard, not to be exceeded.
[d] Based on a sampling schedule of one out of every six days, for a total of approximately 60 samples per year.
[e] Federal standard was reduced from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006.
[f] Sulfur dioxide monitoring was terminated in San Francisco in 2009. Monitoring only continues near refineries.

SOURCE: BAAQMD, Bay Area Air Pollution Summary, 2009 – 2013. Available online at: http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from man-made and natural sources. Particulate matter is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about one-half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction

are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (CARB), studies in the United States and elsewhere "have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks," and studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children." The CARB also reports that statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California (CARB, 2007). Among the criteria pollutants that are regulated, particulates appear to represent a serious ongoing health hazard. As long ago as 1999, the BAAQMD was reporting, in its *CEQA Air Quality Guidelines*, that studies had shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the Bay Area. High levels of particulate matter can exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions.

Table 4.2-1 shows that an exceedance of the state PM_{10} standard occurred on one monitored occasion between 2009 and 2013 in San Francisco. It is estimated that the state 24-hour PM_{10} standard of 50 micrograms per cubic meter ($\mu g/m^3$) was exceeded on up to 6 days per year between 2009 and 2013.[1] The BAAQMD began monitoring $PM_{2.5}$ concentrations in San Francisco in 2002. The federal 24-hour $PM_{2.5}$ standard was not exceeded until 2006, when the standard was lowered from 65 $\mu g/m^3$ to 35 $\mu g/m^3$. It is estimated that the state 24-hour $PM_{2.5}$ standard was exceeded on up to 54 days per year between 2009 and 2013. The state annual average standard was not exceeded between 2009 and 2013.

$PM_{2.5}$ is of particular concern because epidemiologic studies have demonstrated that people who live near freeways and high-traffic roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children (SFDPH, 2008).

Nitrogen Dioxide (NO_2)

NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. Table 4.2-1 shows that the current state standard for NO_2 is being met in San Francisco. In 2010, the U.S. EPA implemented a new 1-hour NO_2 standard presented in **Table 4.2-2**. Currently, the CARB is recommending that the Bay Area air basin be designated as an attainment area for the new standard. This new federal standard was exceeded on one day at the San Francisco station between 2009 and 2013.

[1] PM_{10} and $PM_{2.5}$ are sampled every sixth day; therefore, actual days over the standard can be estimated to be six times the numbers listed in the table.

TABLE 4.2-2
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

Pollutant	Averaging Time	State (SAAQs[a])		Federal (NAAQS[b])	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	1 hour	0.09 ppm	**N**	NA	See Note c
	8 hour	0.07 ppm	U[d]	0.075 ppm	**N**/Marginal
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	A	0.075 ppm	A
	24 hour	0.04 ppm	A	0.14 ppm	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM_{10})	24 hour	50 µg/m^3	**N**	150 µg/m^3	U
	Annual[e]	20 µg/m^3 [f]	**N**	NA	NA
Fine Particulate Matter ($PM_{2.5}$)	24 hour	NA	NA	35 µg/m3g	**N**
	Annual	15 µg/m^3	**N**	12 µg/m3	A
Sulfates	24 hour	25 µg/m^3	A	NA	NA
Lead	30 day	1.5 µg/m^3	A	NA	NA
	Cal. Quarter	NA	NA	1.5 µg/m^3	A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8 hour	See Note h	A	NA	NA

NOTES:
A = Attainment; **N** = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; µg/m^3 = micrograms per cubic meter.

a SAAQS = state ambient air quality standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

b NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of the 98th percentile is less than the standard.

c The United States Environmental Protection Agency (U.S. EPA) revoked the national 1-hour ozone standard on June 15, 2005.

d This state 8-hour ozone standard was approved in April 2005 and became effective in May 2006.

e State standard = annual geometric mean; national standard = annual arithmetic mean.

f In June 2002, The California Air Resources Board (CARB) established new annual standards for $PM_{2.5}$ and PM_{10}.

g On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the proposed redesignation.

h Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70%. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

SOURCE: Bay Area Air Quality Management District (BAAQMD), Standards and Attainment Status, 2012a, http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm, accessed February 19, 2014; and U.S. EPA National Ambient Air Quality Standards, 2011, http://www.epa.gov/air/criteria.html, accessed February 19, 2014.

The U.S. EPA has also established requirements for a new monitoring network to measure NO_2 concentrations near major roadways in urban areas with a population of 500,000 or more. Sixteen new near-roadway monitoring sites are required in California, three of which will be in the Bay Area. These monitors are planned for Berkeley, Oakland, and San Jose. The Oakland station

commenced operation in February 2014 while the other two are not yet operational but will be by January 2015. The new monitoring data may result in a need to change area designations in the future. The CARB will revise the area designation recommendations, as appropriate, once the new monitoring data become available.

Sulfur Dioxide (SO_2)

SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. Table 4.2-2 shows that the state standard for SO_2 is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet this standard for the foreseeable future.

In 2010, the U.S. EPA implemented a new 1-hour SO_2 standard presented in Table 4.2-2. The U.S. EPA has initially designated the SFBAAB as an attainment area for $PM_{2.5}$. Similar to the new federal standard for NO_2, the U.S. EPA has established requirements for a new monitoring network to measure SO_2 concentrations to be operational by January 2013 (USEPA, 2010a). No additional SO_2 monitors are required for the Bay Area because BAAQMD jurisdiction has never been designated as non-attainment for SO_2 and no SIP or maintenance plans have been prepared for SO_2 (BAAQMD, 2013).

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses, cars), smelters (metal refineries), and manufacturers of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which put children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the U.S. EPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$. The U.S. EPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas resulting in an increase in 76 monitors nationally (USEPA, 2010b).

4.2.1.3 Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[2]

In addition to monitoring criteria pollutants, both the BAAQMD and CARB operate TAC monitoring networks in the San Francisco Bay Area Air Basin. These stations measure 10 to 15 TACs, depending on the specific station. The TACs selected for monitoring are those that have traditionally been found in the highest concentrations in ambient air and therefore tend to produce the most significant risk. The nearest BAAQMD ambient TAC monitoring station to the 2014 LRDP area is the station at Sixteenth and Arkansas Streets in San Francisco. **Table 4.2-3** shows ambient concentrations of carcinogenic TACs measured at the Arkansas Street station, and the estimated cancer risks from a lifetime exposure (70 years) to these substances is also reported in the table. When TAC measurements at this station are compared to ambient concentrations of various TACs for the Bay Area as a whole, the cancer risks associated with mean TAC concentrations in San Francisco are similar to those for the Bay Area as a whole. Therefore, the estimated average lifetime cancer risk resulting from exposure to TAC concentrations monitored at the San Francisco station does not appear to be any greater than for the Bay Area as a region.

TABLE 4.2-3
ANNUAL AVERAGE AMBIENT CONCENTRATIONS OF CARCINOGENIC TOXIC AIR CONTAMINANTS MEASURED AT BAAQMD MONITORING STATION IN 2012, 10 ARKANSAS STREET, SAN FRANCISCO

Substance	Concentration	Cancer Risk per Million[a]
Gaseous TACs	**(ppb)**	
Acetaldehyde	0.50	2
Benzene	0.20	19
1,3-Butadiene	0.034	13
Carbon Tetrachloride	0.082	22
Formaldehyde	1.01	7
Perchloroethylene	0.010	0.4
Methylene Chloride	0.087	0.3
Chloroform	0.018	0.5
Trichloroethylene	0.01	0.1
Particulate TACs	**(ng/m^3)**	
Chromium (Hexavalent)	0.065	10
Total Risk for All TACs		**74.3**

NOTES:
TACs = toxic air contaminants; BAAQMD = Bay Area Air Quality Management District; ppb = part per billion; ng/m^3 = nanograms per cubic meter.

[a] Cancer risks were estimated by applying published unit risk values to the measured concentrations.

SOURCE: California Air Resources Board, *Ambient Air Toxics Summary-2012*, available online at: http://www.arb.ca.gov/adam/toxics/sitesubstance.html

[2] In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk; then the applicant is subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or more TACs.

Roadway-Related Pollutants

Motor vehicles are responsible for a large share of air pollution, especially in California. Vehicle tailpipe emissions contain diverse forms of particles and gases and also contribute to particulates by generating road dust and through tire wear. Epidemiologic studies have demonstrated that people living in proximity to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children. Air pollution monitoring conducted in conjunction with epidemiologic studies has confirmed that roadway-related health effects vary with modeled exposure to particulate matter and nitrogen dioxide. In traffic-related studies, the additional non-cancer health risk attributable to roadway proximity was seen within 1,000 feet of the roadway and was strongest within 300 feet. (CARB, 2005) As a result, the CARB recommends that new sensitive land uses not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day. In 2008, the City of San Francisco adopted amendments to the Health Code (discussed below under "Regulatory Framework"), requiring new residential projects near high-volume roadways to be screened for particulate matter exposure hazards and, where indicated, to conduct an analysis of exposure and to mitigate hazards through design and ventilation.

Diesel Particulate Matter (DPM)

The CARB identified diesel particulate matter (DPM) as a toxic air contaminant in 1998, primarily based on evidence demonstrating cancer effects in humans. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The CARB estimated average Bay Area cancer risk from exposure to diesel particulate, based on a population-weighted average ambient diesel particulate concentration, is about 480 in one million, as of 2000, which is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. The risk in the Bay Area from DPM as determined by the BAAQMD declined from about 900 in one million in 1990 to about 525 in one million in 2001 and less than 300 in one million in 2012 (BAAQMD, 2014).[3]

Recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. The CARB community health risk assessments and regulatory programs have produced air quality information about certain types of facilities for consideration by local authorities when siting new residences, schools, day care centers, parks and playgrounds, and medical facilities (i.e., sensitive land uses). Sensitive land uses deserve special attention because children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the non-cancer effects of air pollution. There is also substantial evidence that children are more sensitive to cancer-causing chemicals (CARB, 2005).

[3] This calculated cancer risk value from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 0.40 (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the American Cancer Society. (American Cancer Society, "Lifetime Probability of Developing or Dying from Cancer," last revised July 13, 2009, available online at http://www.cancer.org/docroot/CRI/content/CRI_2_6x_Lifetime_Probability_of_Developing_or_Dying_From_Cancer.asp)

In 2000, the CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. In 2007, the CARB adopted the In-Use Off-Road Diesel Vehicle Regulation to reduce diesel DPM and NOx emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. Subsequent CARB regulations apply to new trucks and diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same particulate exhaust emissions as one truck built in 1988 (Pollution Engineering, 2006). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000.

Despite notable emission reductions, the CARB recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. The CARB notes that these recommendations are advisory and should not be interpreted as defined "buffer zones," and that local agencies must balance other considerations, including transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, the CARB's position is that infill development, mixed use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.

4.2.1.4 Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young; population subgroups with higher rates of respiratory disease, such as asthma and chronic obstructive pulmonary disease; and populations with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. The BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, colleges and universities, day care, hospitals, and senior-care facilities. Workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration (OSHA) to ensure the health and well-being of their employees (BAAQMD, 2011).

The proximity of sensitive receptors to motor vehicles is an air pollution concern, especially in San Francisco where building setbacks are limited and roadway volumes higher than most other parts of the Bay Area. Epidemiologic studies have consistently demonstrated that children and adults living in proximity to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections, and decreased pulmonary function and lung development in children. Vehicles also contribute to particulates by generating road dust and through tire wear.

4.2.2 Regulatory Considerations

4.2.2.1 Federal Regulations

The 1970 Clean Air Act (last amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

The current attainment status for the San Francisco Bay Area Air Basin, with respect to federal standards, is summarized above in Table 4.2-2. In general, the Bay Area Air Basin experiences low concentrations of most pollutants when compared to federal standards, except for ozone and particulate matter (PM_{10} and $PM_{2.5}$), for which standards are exceeded periodically (see Table 4.2-1).

In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard.[4] The U.S. EPA lowered the national 8-hour ozone standard from 0.80 to 0.75 parts per million (ppm) effective May 27, 2008. In April 2012, the U.S. EPA designated the Bay Area as a marginal nonattainment region for the 0.75 ppm ozone standard established in 2008. The SFBAAB is in attainment for other criteria pollutants, with the exception of the 24-hour standards for PM_{10} and $PM_{2.5}$, for which the Bay Area is designated as "Unclassified." "Unclassified" is defined by the Clean Air Act as any area that cannot be classified, on the basis of available information, as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key State Implementation Plan (discussed below) requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the propose redesignation.

4.2.2.2 State Regulations

Although the federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological problems in California, there is

[4] "Marginal nonattainment area" means an area designated marginal nonattainment for the 1-hour national ambient air quality standard for ozone.

considerable diversity between the state and national ambient air quality standards, as shown in Table 4.2-2. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code Sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on state ambient air quality standards rather than the federal standards. As indicated in Table 4.2-2, the SFBAAB is designated as "nonattainment" for state ozone, PM_{10}, and $PM_{2.5}$ standards. The SFBAAB is designated as "attainment" for other pollutants.

4.2.2.3 Regional and Local Regulations

Bay Area Air Quality Planning Relative to State and Federal Standards

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans or SIPs. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard). The *2010 Bay Area Clean Air Plan* was adopted on September 15, 2010, by the BAAQMD, in cooperation with the Bay Area Metropolitan Transportation Commission (MTC), the Bay Conservation and Development Commission (BCDC), and the Association of Bay Area Governments (ABAG). The *2010 Clean Air Plan* outlines a multi-pollutant approach for addressing ozone, particulate matter, air toxics, and greenhouse gas emission reductions in a single, integrated strategy. The primary objectives of the plan are to improve local and regional air quality, protect public health, and minimize climate change impacts. The *2010 Clean Air Plan* replaces the Bay Area *2005 Ozone Strategy*, adopted in 2006.

The *2010 Clean Air Plan* updates the *2005 Ozone Strategy* in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone; provide a control strategy to reduce ozone, particulate matter, toxic air contaminants, and greenhouse gases in a single, integrated plan; review progress in improving air quality in recent years; and establish emission control measures that have since been implemented. The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies, and others. The *2010 Clean Air Plan* also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the state one-hour ozone standard (BAAQMD, 2010).

Toxic Air Contaminants

In 2005, the ARB approved a regulatory measure to reduce emissions of toxic and criteria pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than five consecutive minutes or periods aggregating more than five

minutes in any one hour. Buses or vehicles also must turn off their engines upon stopping at a school and must not turn their engines on more than 30 seconds before beginning to depart from a school. Also, state law Senate Bill 352 (SB 352) was adopted in 2003 and limits locating public schools within 500 feet of a freeway or busy traffic corridor (Section 17213 of the Education Code; Section 21151.8 of the Public Resources Code).

Bay Area Air Quality Management District

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the San Francisco Bay Area Air Basin. ABAG, MTC, county transportation agencies, cities and counties, and various non-governmental organizations also participate in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs. BAAQMD is responsible for attaining and/or maintaining air quality in the region within federal and state air quality standards. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the region and to develop and implement strategies to attain the applicable federal and state standards.

San Francisco Health Code Provisions Regarding Roadway-generated Pollutants (Article 38)

San Francisco adopted Article 38 of the *San Francisco Health Code* in 2008, requiring an Air Quality Assessment for new residential projects of 10 or more units located in proximity to high-traffic roadways, as mapped by the DPH, to determine whether residents would be exposed to unhealthful levels of $PM_{2.5}$. The air quality assessment evaluates the concentration of $PM_{2.5}$ from local roadway traffic that could affect a proposed residential development site. If the DPH air quality assessment indicates that the annual average concentration of $PM_{2.5}$ at the site would be greater than 0.2 $\mu g/m^3$, Health Code Section 3807 requires development on the site to be designed or relocated to avoid exposure greater than 0.2 $\mu g/m^3$, or a ventilation system to be installed that would be capable of removing 80% of ambient $PM_{2.5}$ from habitable areas of the residential units. Article 38 of the Health Code is in the process of being revised, along with the Administrative Code. Once the revisions are adopted, there will be a statutory requirement (outside of CEQA) that requires enhanced ventilation for all new sensitive receptors within newly identified Exposure Zones and construction emissions minimization within these Exposure Zones. These revisions are expected to be considered by the Board of Supervisors in fall 2014.

4.2.3 Significance Standards

Would implementation of the 2014 LRDP:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation (e.g., induce mobile source carbon monoxide (CO) emissions that would cause a violation of the CO ambient air quality standard)?

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to substantial pollutant concentrations?

e) Create objectionable odors affecting a substantial number of people?

4.2.4 Analysis Methodology

Potential 2014 LRDP air quality impacts are assessed by modeling the estimated daily emissions generated by LRDP construction activities and operations using the CalEEMod land use emissions model version 2013.2.2. Emissions are then compared to the significance criteria in the BAAQMD 2011 *CEQA Air Quality Guidelines,* which include the following:

- Result in total construction emissions of Reactive Organic Gases (ROG), NO_x, or $PM_{2.5}$ (exhaust) of 10 tons per year or greater or 54 pounds per day or greater.
- Exceed a construction emission threshold for PM_{10} (exhaust) of 15 tons per year or greater, or 82 pounds per day or greater.
- For PM_{10} and $PM_{2.5}$ as part of fugitive dust generated during construction, the BAAQMD Guidelines specify compliance with Best Management Practices as the threshold.
- Result in total operational emissions of ROG, NO_x, or $PM_{2.5}$ of 10 tons per year or greater, or 54 pounds per day or greater.
- Exceed an operational emission threshold for PM_{10} of 15 tons per year or greater, or 82 pounds per day.
- Result in CO concentrations of 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average) as estimated by roadway vehicle volumes exceeding 44,000 vehicles per hour at any intersection.
- Exposure of people to a single source of Toxic Air Contaminants (TACs) that results in (a) a cancer risk level greater than 10 in one million, (b) a non-cancer risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter, where the exposure results from siting a new single source or siting a new sensitive receptor.

A project's contribution to cumulative impacts for criteria pollutants are considered significant if the project's impact individually would be significant (i.e., if it exceeds the BAAQMD's quantitative thresholds).

According to the BAAQMD 2012 *CEQA Air Quality Guidelines*, a project's contribution to cumulative impacts for criteria pollutants should be considered significant if the project's impact individually would be significant (i.e. exceeds the BAAQMD's quantitative thresholds). While the significance thresholds adopted by BAAQMD in 2010 and 2011 have been set aside due to judicial action currently pending before the California Supreme Court, these thresholds are based

on substantial evidence identified in Appendix D of the 2011 BAAQMD CEQA Guidelines and its 2009 Justification Report and are therefore used within this document.

For cumulative impacts from TACs, a project would be considered significant if siting a new sensitive receptor would result in exposure of people to substantial levels of TACs resulting from all cumulative sources within 1,000 feet in (a) a cumulative cancer risk level greater than 100 in one million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10, or (c) an increase of annual average $PM_{2.5}$ of greater than 0.8 micrograms per cubic meter.

4.2.5 References

Bay Area Air Quality Management District (BAAQMD), *2010 Clean Air Plan*. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx Accessed on February 19, 2014.

BAAQMD, Recommended Methods for Screening and Modeling Local Risks and Hazards, May 2011, page 12.

BAAQMD, *CEQA Air Quality Guidelines*, May 2012, www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx; p. C-16.

BAAQMD, *2012 Air Monitoring Network Plan*, July 2013, www.baaqmd.gov/Divisions/Technical-Services/Ambient-Air-Monitoring/AAMN-Plan.aspx; p. 30.

BAAQMD, *Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004-2013)*, March 2014.

California Air Resources, Board (CARB), *Air Quality and Land Use Handbook: A community Health Perspective*, April, 2005.

CARB, "Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution," November 2007.

CARB, *California Almanac of Emissions and Air Quality - 2009 Edition*, Table 5-44 and Figure 5-12, http://www.arb.ca.gov/aqd/almanac/almanac09/chap509.htm, accessed February 19, 2014.

CARB, Recommended Area Designations for the 2010 Nitrogen Dioxide Standards, Technical Support Document, January 2011, http://www.airquality.org/plans/federal/no2/NO2Enclosure_1.pdf

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San Francisco Department of Public Health, Assessment and Mitigation of Air Pollutant Health Effect from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review, May 2008, p. 7. Available online at https://www.sfdph.org/dph/EH/Air/MitRoadway111907.pdf. Accessed February 19, 2014.

U.S. EPA,2010a, *Fact Sheet: Revisions to the Primary National Ambient Air Quality Standard, Monitoring Network, and Data Reporting Requirements for Sulfur Dioxide*, June 2, 2010; http://www.epa.gov/air/sulfurdioxide/pdfs/20100602fs.pdf

U.S. EPA, 2010b, *Fact Sheet Revisions to Lead Ambient Air Quality Monitoring Requirements*, http://www.epa.gov/air/lead/pdfs/Leadmonitoring_FS.pdf, accessed February 19, 2014.

4.3 Biological Resources

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Biological Resource impacts. 2014 LRDP Biological Resources effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Biological Resource effects resulting from 2014 LRDP proposals at the Parnassus Heights campus site is discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures.* The Initial Study prepared for the 2014 LRDP concluded that LRDP proposals would result in no impact or less-than-significant impacts to biological resources at the Mission Bay, Mount Zion and Mission Center campus sites. Therefore, no additional analysis of biological resources effects at these campus sites is required.

4.3.1 Regional Setting

The 2014 LRDP planning area[5] is located in the Bay Area–Delta Bioregion,[6] as defined by the State of California's Natural Communities Conservation Program. This bioregion supports a variety of natural communities that range from the open waters of San Francisco Bay and Delta to salt and brackish marshes to grassland, chaparral, and oak woodlands. The temperate climate is Mediterranean in nature, with relatively mild, wet winters and warm, dry summers. The high diversity of vegetation and wildlife found in the region is a result of soil, topographic, and microclimate variations that combine to promote relatively high levels of endemism.[7] This, in combination with a long history of uses that have altered the natural environment and the increasingly rapid pace of development in the region, has endangered some local flora and fauna.

4.3.1.1 Project Area Vegetation Communities and Wildlife Habitats

Urban

Wildlife species utilizing urban areas are often well adapted to the presence of humans and their activities. They are typically generalists, capable of utilizing the limited food sources available, such as garbage and horticultural plants and their fruit. Urban wildlife species expected in the 2014 LRDP area include common raven (*Corvus corax*), northern mockingbird (*Mimus polyglottos*),

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5 The information on natural communities, plant and animal species, and sensitive biological resources used in the preparation of this section was obtained from: the California Natural Diversity Database (CNDDB) (CDFW, 2014), California Native Plant Society (CNPS) Electronic Inventory (CNPS, 2013), the U.S. Fish and Wildlife Service (USFWS, 2014), and standard biological literature. In addition, the following documents were reviewed and referenced to support the analysis of potential environmental impacts on the project:
- UCSF Long Range Development Plan Final EIR, 1997
- UCSF Long Range Development Plan Initial Study, 2013
- Draft EIR for the UCSF Mount Sutro Management Project, 2013

6 A *bioregion* is an area defined by a combination of ecological, geographic, and social criteria and consists of a system of related, interconnected ecosystems. The Bay-Delta Bioregion is considered the immediate watershed of the Bay Area and the Delta, not including the major rivers that flow into the Delta. It is bounded on the north by the northern edge of Sonoma and Napa Counties and the Delta, and extends east to the edge of the valley floor; on the south, it is bounded by the southern edge of San Joaquin County, the eastern edge of the Diablo Range, and the southern edge of Santa Clara and San Mateo Counties.

7 *Endemism* refers to the degree to which organisms or taxa are restricted to a geographical region or locality and thus are individually characterized as endemic to that area.

raccoon (*Procyon lotor*), Norway rat (*Rattus norvegicus*), Virginia opossum (*Didelphis virgiana*), and feral cats. Several exceptions to the generalist rule are red-tailed hawk (*Buteo jamaicensis*), which prey on rodents, and Cooper's hawk (*Accipiter cooperii*) and peregrine falcon (*Falco peregrinus anatum*), which prey almost exclusively on small to medium sized birds and are known to nest within San Francisco. Bats may colonize abandoned buildings within the vicinity of the 2014 LRDP planning area.

Landscaped

Landscaped areas supporting a variety of ornamental trees, shrubs and maintained non-native vegetation are present on the UCSF campus sites within the 2014 LRDP area. Landscaped areas in an otherwise urban environment can provide cover, foraging, and nesting habitat for a variety of bird species as well as reptiles and small mammals, especially those that are tolerant of disturbance and human presence. Birds commonly found in such areas include non-native birds such as English sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*), as well as birds native to the area such as American robin (*Turdus migratorius*), house finch (*Carpodacus mexicanus*), dark-eyed junco (*Junco hyemalis*), western scrub jay (*Aphelocoma californica*), mourning dove (*Zenaida macroura*), and Anna's hummingbird (*Calypte anna*). Reptiles using this type of habitat, particularly in areas bordering natural lands, may include native species such as western terrestrial garter snake (*Thamnophis elegans*) and western fence lizard (*Sceloporus occidentalis*). Other wildlife present in these urban landscaped areas include striped skunk (*Mephitis mephitis*), raccoon, Virginia opossum, roosting bats as well as Botta's pocket gopher (*Thomomys bottae*) and other small rodents. Coyotes (*Canis latrans*) have been sighted occasionally in Golden Gate Park and Presidio areas of San Francisco and could appear within the 2014 LRDP planning area.

Non-native Forest

Non-native forest habitat occurs throughout the Mount Sutro Open Space Reserve (Reserve) on the Parnassus Heights campus site. Dominant tree species are blue gum eucalyptus and Monterey cypress (Monterey cypress are native to California but not to the San Francisco area). Special-status species that could be present in these areas include overwintering monarch butterflies (*Danaus plexippus*), nesting raptors such as red-shouldered hawk (*Buteo lineatus*) and red-tailed hawk, and special-status and common bats. Several avian species are common to eucalyptus and cypress forest, including native species such as American robin, chestnut-backed chickadee (*Poecile rufescens*), pygmy nuthatch (*Sitta pygmaea*), Anna's hummingbird, and California towhee (*Pipilo crissalis*). The non-native eastern gray squirrel (*Sciurus carolinensis*) is also prevalent.

Sensitive Natural Communities, Including Wetlands

The California Natural Diversity Database (CNDDB) reports no sensitive natural community occurrences for the two-quadrangle area containing and surrounding the LRDP planning area (CDFW, 2014). No potentially jurisdictional wetlands are located in area that would be affected by the proposed 2014 LRDP activities.

Wildlife Movement Corridors

Rugged terrain, changes in vegetation, or areas of human disturbance or urban development can fragment wildlife habitats and impede wildlife movement between areas of suitable habitat. This fragmentation creates isolated "islands" of vegetation that may not provide sufficient area to accommodate sustainable populations, and can adversely affect genetic and species diversity. Wildlife movement corridors link habitat areas and mitigate the effects of this fragmentation by allowing animals to move between remaining habitats, in turn allowing depleted populations to be replenished and promoting genetic exchange between separate populations. Due to urban development of the San Francisco peninsula, remaining wildlife habitat is largely isolated to disconnected small parks and open space areas.

The San Francisco Peninsula is an important migratory stopover for birds along the Pacific Flyway—one of the four major migratory routes in North America. Raptors, songbirds, shorebirds and waterfowl stop in San Francisco, including Golden Gate Park, Lake Merced, the Presidio and the Reserve during their fall and spring migrations. Both the Mission Bay and Parnassus Heights campus sites offer suitable and attractive habitat for birds to forage and rest along this migration route. While San Francisco's location on the Pacific Flyway allows the City's open spaces to host transient individuals, it does not constitute a wildlife movement corridor. No wildlife movement corridors are present within the 2014 LRDP planning area.

4.3.1.2 Special-Status Species

Several species in the vicinity of the 2014 LRDP planning area receive protection pursuant to federal and/or State endangered species laws, or CDFW designation as "species of special concern". For the purpose of this EIR, special-status species include:

- Plant and wildlife species listed as rare, threatened, or endangered under the federal or State endangered species acts;
- Species that are candidates for listing under either federal or State law;
- Species formerly designated by the USFWS as species of concern or by the CDFW as species of special concern;[8]
- Species designated as "special animals" by the State;[9]
- Species designated as "fully protected" by the State (there are about 35, most of which are also listed as either endangered or threatened);[10]

[8] A California species of special concern is one that: has been extirpated from the state; meets the state definition of threatened or endangered but has not been formally listed; is undergoing or has experienced serious population declines or range restrictions that put it at risk of becoming threatened or endangered; and/or has naturally small populations susceptible to high risk from any factor that could lead to declines that would qualify it for threatened or endangered status.

[9] Species listed on the current CDFW "special animals" list (January 2011), which includes 898 species. This list includes species that CDFW considers "those of greatest conservation need."

[10] The "fully protected" classification was California's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. The designation can be found in the Fish and Game Code.

- Raptors (birds of prey), which are specifically protected by California Fish and Game Code Section 3503.5, thus prohibiting the take, possession, or killing of raptors and owls, their nests, and their eggs;[11] and

- Species, such as candidate species, that may be considered rare or endangered pursuant to Section 15380(b) of the CEQA Guidelines.

A comprehensive list of the special-status plant and animal species that may occur or have the potential to occur within the 2014 LRDP area was developed based on data obtained from the CNDDB, the California Native Plant Society (CNPS) Electronic Inventory, and the USFWS and other biological literature pertaining to the bioregion. It was then determined whether there is a low, moderate, or high potential for species occurrence at the LRDP activities sites based on previous special-status species record locations and current site conditions. These species lists are provided in **Tables 4.3-1** and **4.3-2**.

Special-Status Plants

Table 4.3-1 presents special-status plant species that occur in the regional vicinity (i.e., the San Francisco North and San Francisco South 7.5-minute USGS quadrangles), and their potential to occur in the LRDP planning area. Most special-status plant species are considered to have a low potential to occur at the individual LRDP proposal sites due to the developed nature of most of the 2014 LRDP project locations. This estimation is supported by the lack of native plants and supportive native vegetation communities, and based on the disturbed and heavily managed condition of the LRDP planning area.

Of the campus site locations included in the 2014 LRDP planning area, the Parnassus Heights campus site includes the Reserve; however, the potential for rare plant species in this area is still considered low because the vegetation communities that would support rare plants, such as coastal salt marsh, coastal prairie, valley and foothill grasslands, coastal dunes, and coastal scrub are not prevalent within the Reserve. Coastal triquetrella, a California Rare Plant Rank 1B.2 which occurs on shaded substrate in coastal bluff or coastal scrub communities, and San Francisco gumplant (*Grindelia hirsutula* var. *maritima*), a California Rare Plant Rank of 3.2 which occurs on sandy or serpentine slopes and coastal scrub communities, are the only special-status plants with a moderate potential to occur within the LRDP planning area, and specifically within the vicinity of the Parnassus Heights campus site. Coastal triquetrella has been documented within 0.15 mile of the Parnassus Heights campus site on Tank Hill and south east of the campus site in open spaces near the Douglas Playground, within two miles of the campus site (CDFW, 2014). San Francisco gumplant has been documented at several locations within two miles of the Parnassus Heights campus site, with the closest record on the western slope of Mount Sutro at Laguna Honda (CDFW, 2014).

[11] The inclusion of birds protected by Fish and Game Code Section 3503.5 is in recognition of the fact that these birds are substantially less common in California than most other birds, having lost much of their habitat to development, and that the populations of these species are therefore substantially more vulnerable to further loss of habitat and to interference with nesting and breeding than most other birds. It is noted that a number of raptors and owls are already specifically listed as threatened or endangered by State and federal wildlife authorities.

TABLE 4.3-1
SPECIAL-STATUS PLANT SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name Scientific Name	Federal Status	State Status	Calif. Rare Plant Rank	Habitat Description / Blooming Period	Potential to Occur in the Action Area
Species Listed or Proposed for Listing					
Presidio Manzanita *Arctostaphylos montana ssp. Ravenii*	FE	CE	1B.1	Open, rocky, serpentine slopes in chaparral, coastal scrub, and coastal prairie. February – March	**Low.** No suitable habitat present.
Marsh sandwort *Arenaria paludicola*	FE	CE	1B.1	Freshwater or brackish marshes and swamps. May – August	**Low.** No suitable habitat present.
Presidio clarkia *Clarkia franciscana*	FE	CE	1B.1	Serpentine outcrops in coastal scrub, and valley and foothill grassland. May – July	**Low.** No suitable habitat present.
Beach layia *Layia carnosa*	FE	CE	1B.1	Sand dunes. March – July	**Low.** No suitable habitat present.
San Francisco lessingia *Lessingia germanorum*	FE	CE	1B.1	Coastal scrub, sandy soils free of competing species. July – November	**Low.** No suitable habitat present.
White rayed pentachaeta *Pentachaeta bellidiflora*	FE	CE	1B.1	Open, dry, rocky slopes and grassy areas, usually on serpentine. March – May	**Low.** No suitable habitat present.
Marin western flax *Hesperolinon congestum*	FT	CT	1B.1	Chaparral and grassland, usually on serpentine barrens. April – July	**Low.** No suitable habitat present.
Robust spineflower *Chorizanthe robusta var. robusta*	FE	--	1B.1	Sandy or gravelly coastal dunes, coastal scrub, cismontane woodland and maritime chaparral. April – September	**Low.** No suitable habitat present.
San Bruno Mountain manzanita *Arctostaphylos imbricada*	--	CE	1B.1	Chaparral and coastal scrub, usually on sandstone outcrops. February – May	**Low.** No suitable habitat present.
Pacific manzanita *Arctostaphylos pacifica*	--	CE	1B.2	Coastal scrub and chaparral. February – April	**Low.** No suitable habitat present.
San Francisco popcorn-flower *Plagiobothrys diffusus*	--	CE	1B.1	Coastal prairie, and valley and foothill grasslands. March – June	**Low.** No suitable habitat present.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS PLANT SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name Scientific Name	Federal Status	State Status	Calif. Rare Plant Rank	Habitat Description / Blooming Period	Potential to Occur in the Action Area
Federal Species of Concern or State Species of Special Concern					
Adobe sanicle *Sanicula maritima*	--	Rare	1B.1	Moist clay or ultramafic soil in chaparral, coastal prairie, meadows, seeps, and valley and foothill grassland. February – May	**Low.** No suitable habitat present.
Hairless popcorn-flower *Plagiobothrys glaber*	--	--	1A	Coastal salt marshes and alkaline meadows. March – May	**Low.** No suitable habitat present.
Franciscan manzanita *Arctostaphylos franciscana*	--	--	1B.1	Open, rocky, serpentine outcrops in chaparral. February – April	**Low.** No suitable habitat present. This species was believed to be extinct in the wild (although still extant through cultivation), but was rediscovered in Presidio National Park in late 2009.
Blue coast gilia *Gilia capitata* spp. *chamissonis*	--	--	1B.1	Coastal dunes and scrub. April – July	**Low.** No suitable habitat present. Extant population is present within the Presidio of San Francisco.
Kellogg's horkelia *Horkelia cuneata* ssp. *sericea*	--	--	1B.1	Coastal scrub, dunes, and openings of closed-cone coniferous forests. February – July	**Low.** No suitable habitat present.
Rose leptosiphon *Leptosiphon rosaceus*	--	--	1B.1	Coastal bluff scrub. April – July	**Low.** No suitable habitat present.
Fragrant fritillary *Fritillaria liliacea*	--	--	1B.2	On clay, often serpentine derived soils in coastal scrub, grassland, and coastal prairie. February – April	**Low.** No suitable habitat present. Extant population located at Twin Peaks.
Bent-flowered fiddleneck *Amsinckia lunaris*	--	--	1B.2	Coastal bluff scrub, cismontane woodland, and valley and foothill grassland. March – June	**Low.** No suitable habitat present.
Montara manzanita *Arctostaphylos montaraensis*	--	--	1B.2	Slopes and ridges in chaparral and coastal scrub. January – March	**Low.** No suitable habitat present.
Alkali milk-vetch *Astragualus tener* var. *tener*	--	--	1B.2	Alkali flats, flooded grassland, playas and vernal pools. March – June	**Low.** No suitable habitat present; species presumed extirpated in San Francisco.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS PLANT SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name Scientific Name	Federal Status	State Status	Calif. Rare Plant Rank	Habitat Description / Blooming Period	Potential to Occur in the Action Area
Federal Species of Concern or State Species of Special Concern (cont.)					
Pappose tarplant *Centromadia parryi* ssp. *parryi*	--	--	1B.2	Chaparral, coastal prairie, meadows, seeps, coastal salt marshes and swamps, and vernally mesic, often alkaline, valley and foothill grasslands. May – November	**Low.** No suitable habitat present.
Franciscan thistle *Cirsium andrewsii*	--	--	1B.2	Coastal bluff scrub, coastal prairie, coastal mesic scrub, and broadleaf upland forest; sometimes on serpentine. March – July	**Low.** No suitable habitat present.
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	--	--	1B.2	Coastal scrub, dunes and grassland. April – July	**Low.** No suitable habitat present.
Point Reyes salty bird's-beak *Chloropyron maritimum* ssp. *palustre*	--	--	1B.2	Coastal salt marshes and swamps. June – October	**Low.** No suitable habitat present.
Compact cobwebby thistle *Cirsium occidentale* var. *compactum*	--	--	1B.2	Coastal scrub, grassland, and dunes. April – June	**Low.** No suitable habitat present.
Round-headed Chinese-houses *Collinsia corymbosa*	--	--	1B.2	Coastal dunes and coastal prairie. April – June	**Low.** No suitable habitat present; species has not been seen in San Francisco for more than 100 years.
San Francisco collinsia *Collinsia multicolor*	--	--	1B.2	On humus-covered soil derived from mudstone in closed-cone coniferous forest and coastal scrub. March – May	**Low.** No suitable habitat present.
Dark-eyed gilia *Gilia millefoliata*	--	--	1B.2	Coastal dunes. April – July	**Low.** No suitable habitat present; species potentially extirpated in San Francisco.
Diablo helianthella *Helianthella castanea*	--	--	1B.2	On rocky soils in broadleaf upland forest, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. March – June	**Low.** No suitable habitat present.
White seaside tarplant *Hemizonia congesta* ssp. *congesta*	--	--	1B.2	Grassy valleys and hills, often on fallow fields in coastal scrub. April – November	**Low.** No suitable habitat present.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS PLANT SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name Scientific Name	Federal Status	State Status	Calif. Rare Plant Rank	Habitat Description / Blooming Period	Potential to Occur in the Action Area
Federal Species of Concern or State Species of Special Concern (cont.)					
Short-leaved evax *Hesperevax sparsiflora* var. *brevifolia*	--	--	1B.2	Sandy bluffs and flats in coastal scrub and coastal dunes. March – June	**Low.** No suitable habitat present.
Arcuate bush mallow *Malacothamnus arcuatus*	--	--	1B.2	Gravelly alluvium in chaparral and cismontane woodland. April – September	**Low.** No suitable habitat present.
Marsh microseris *Microseris paludosa*	--	--	1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. August – June	**Low.** No suitable habitat present.
Choris's popcorn-flower *Plagiobothrys chorisianus* var. *chorisianus*	--	--	1B.2	Mesic sites in chaparral, coastal scrub, and coastal prairie. March – June	**Low.** No suitable habitat present.
San Francisco campion *Silene verecunda* ssp. *verecunda*	--	--	1B.2	Mudstone, shale, or serpentine substrates in coastal scrub, coastal prairie, chaparral and valley and foothill grassland. March – June	**Low.** No suitable habitat present.
Santa Cruz microseris *Stebbinsoseris decipiens*	--	--	1B.2	On sandstone, shale or serpentine derived seaward facing slopes in broadleaf upland forest, closed-cone coniferous forest, chaparral, coastal prairie, and coastal scrub. April – May	**Low.** No suitable habitat present.
Coastal triquetrella *Triquetrella californica*	--	--	1B.2	On shaded soil, rocks sand or gravel in dry or moist conditions or in coastal bluff and coastal scrub.	**Moderate.** Documented extant population within 0.1 mile of the Parnassus Heights campus on Tank Hill. Suitable habitat is present within the Mount Sutro Open Space Reserve.
San Francisco owl's clover *Triphysaria floribunda*	--	--	1B.2	Grasslands. April – June	**Low.** No suitable habitat present.
Bristly sedge *Carex comosa*	--	--	2B.1	Lake margins, marshes, swamps, coastal prairie, and valley and foothill grasslands. May – September	**Low.** No suitable habitat present.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS PLANT SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name Scientific Name	Federal Status	State Status	Calif. Rare Plant Rank	Habitat Description / Blooming Period	Potential to Occur in the Action Area
Federal Species of Concern or State Species of Special Concern (cont.)					
Oregon polemonium *Polemonium carneum*	--	--	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. April – September	**Low.** No suitable habitat present.
San Francisco gumplant *Grindelia hirsutula* var. *maritime*	--	--	3.2	On sandy or serpentine slopes of sea bluffs in coastal scrub, or valley and foothill grasslands. June – September	**Moderate.** Documented in 1987 on the western slope of Mount Sutro in dense coastal scrub habitat. Suitable habitat is present for this species in the Mount Sutro Open Space Reserve.

NOTES:
The "Potential for Effect" category is defined as follows:
High = Species is expected to occur and habitat meets species requirements.
Moderate = Habitat is only marginally suitable or is suitable but not within species geographic range.
Low = Habitat does not meet species requirements as currently understood in the scientific community.

STATUS CODES:

Federal:
FE = Listed as "endangered" under the federal Endangered Species Act
FT = Listed as "threatened" under the federal Endangered Species Act
FSC = NOAA Fisheries designated "species of concern"
FPD = Proposed delisted
FD = Delisted

State:
CE = Listed as "endangered" under the California Endangered Species Act
CT = Listed as "threatened" under the California Endangered Species Act
CSC = California Department of Fish and Wildlife designated "species of special concern"
CFP = California Department of Fish and Wildlife designated "fully protected"
SC = California Department of Fish and Wildlife designated "candidate threatened"
WL = California Department of Fish and Wildlife designated "watch list"
3503.5 = Eggs, Nests, and Nestlings Protected under section 3503.5 of the California Department of Fish and Game Code
* = California special animal

California Rare Plant Rank:
List 1A = Plants presumed extirpated in California and either rare or extinct elsewhere
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2A = Plants presumed extirpated in California, but more common elsewhere
List 2B = Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = Plants about which we need more information--a review list
List 4 = Plants of limited distribution--a watch list

SOURCE: USFWS (2014), CDFW (2014), CNPS (2013).

TABLE 4.3-2
SPECIAL-STATUS ANIMAL SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name *Scientific Name*	Federal Status	State Status	Habitat Description	Potential to Occur in the Action Area
Invertebrates				
San Bruno elfin butterfly *Callophrys mossii bayensis*	FE	--	Coastal scrub on rocky outcrops with broadleaf stonecrop (*Sedum spathulifolium*)	**Low.** No suitable habitat present. Three known populations at San Bruno Mountain, Montara, and Pacifica.
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT	--	Serpentine grasslands.	**Low.** No suitable habitat present.
Mission blue butterfly *Plebejus icarioides missionensis*	FE	--	Grassland with *Lupinus albifrons, L. Formosa*, and *L. varicolor.*	**Low.** Suitable habitat present at Twin Peaks. Species unlikely to occur within the plan area.
Callippe silverspot butterfly *Speyeria callippe callippe*	FE	--	Found in native grasslands with *Viola pedunculata* as larval food plant.	**Low.** No suitable habitat present.
Monarch butterfly *Danaus plexippus*	--	*	Eucalyptus groves (wintering sites).	**Moderate.** Several records of this species wintering in eucalyptus groves within San Francisco including Golden Gate Park, the Presidion, Fort Mason, and Telegraph Hill.
Tomales isopod *Caecuditea tomalensis*	--	--	Still-to slow-moving water in vegetated ponds, preferably spring-fed.	**Low.** No suitable habitat present.
Reptiles and Amphibians				
Western pond turtle *Emys marmorata*	--	CSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.	**Low.** No suitable habitat present.
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	FE	SE	Densely vegetated ponds near open hillsides with abundant small mammal burrows.	**Absent.** Species is considered likely extirpated from San Francisco.
California red-legged frog *Rana draytonii*	FT	CSC	Freshwater ponds and slow streams with emergent vegetation for egg attachment.	**Low.** No suitable habitat present.
Birds				
California clapper rail *Rallus longirostris obsoletus*	FE	CE	Salt marsh wetlands along the San Francisco Bay.	**Low.** No suitable habitat present.
Bank swallow *Riparia riparia* (nesting)	--	CT	Vertical banks and cliffs with sandy soil, near water. Nests in holes dug in cliffs and river banks.	**Low.** No suitable habitat present. Known to nest at Fort Funston and forage over Lake Merced.

TABLE 4.3-2 (Continued)
SPECIAL-STATUS ANIMAL SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name *Scientific Name*	Federal Status	State Status	Habitat Description	Potential to Occur in the Action Area
Birds (cont.)				
Yellow warbler *Dendroica petechia brewsteri*	--	CSC	Nests in dense riparian cover and montane chaparral. Breeding distribution includes the coast ranges and western slopes of the Sierra Nevada. Rare to uncommon in lowland areas.	**Low.** No suitable riparian habitat present.
California black rail *Laterallus jamaicensis coturniculus*	--	CT	Salt and brackish marshes; also in freshwater marshes at low elevations.	**Low.** No suitable habitat present.
Salt marsh common yellowthroat *Geothlypis trichas sinuous*	--	CSC	Forages in various marsh, riparian and upland habitats. Nests on or near the ground in concealed locations.	**Low.** No suitable riparian habitat present.
Alameda song sparrow *Melospiza melodia pusillula*	--	CSC	Salt marshes of eastern and south San Francisco Bay.	**Low.** No suitable habitat present.
San Pablo song sparrow *Melospiza melodia samuelis*	--	CSC	Salt marshes of eastern and north San Francisco Bay.	**Low.** No suitable habitat present.
Double-crested cormorant *Phalacrocorax auritus*	--	WL, 3503.5	Coastal areas and inland lakes in fresh, saline, and estuarine waters.	**Low.** No suitable habitat present. Large nesting colonies are present at Lake Merced.
Cooper's hawk *Accipiter cooperii*	--	3503.5	Nests in riparian areas and oak woodlands, forages at woodland edges.	**Moderate.** Large trees including eucalyptus and Monterey cypress, could support nests for this species.
Sharp-shinned hawk *Accipiter striatus*	--	3503.5	Nests in riparian areas and oak woodlands, forages in open areas	**Moderate.** Large trees including eucalyptus and Monterey cypress, could support nests for this species.
Great horned owl *Bubo virginianus*	--	3503.5	Riparian, coniferous, chaparral and desert habitats.	**Moderate.** Large trees including eucalyptus and Monterey cypress, could support nests for this species.
Red-tailed hawk *Buteo jamaicensis*	--	3503.5	Found in nearly all habitats and elevations.	**Moderate.** Large trees including eucalyptus and Monterey cypress, could support nests for this species.
Red-shouldered hawk *Buteo lineatus*	--	3503.5	Riparian woodlands with swamps and emergent wetlands.	**Moderate.** Large trees including eucalyptus and Monterey cypress, could support nests for this species.
American kestrel *Falco sparverius*	--	3503.5	Frequents generally open grasslands, pastures, and fields; primarily a cavity nester.	**Moderate.** Large trees, including eucalyptus and Monterey cypress, and excavations in telephone poles could support nests for this species.

TABLE 4.3-2 (Continued)
SPECIAL-STATUS ANIMAL SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name *Scientific Name*	Federal Status	State Status	Habitat Description	Potential to Occur in the Action Area
Birds (cont.)				
Osprey *Pandion haliaetus*	--	3503.5	Habitat varies greatly and usually includes adequate supply of accessible fish, shallow waters, open and elevated nest sites (10-60 feet in height), and artificial structures such as towers. Builds large platform stick nests near or in open waters such as lakes, estuaries, bays, reservoirs, and within the surf zone.	**Low.** No suitable habitat is present.
Great blue heron *Ardea herodias*	--	3503.5	Shallow estuaries and fresh and saline emergent wetlands.	**Low.** No suitable habitat present.
Green heron *Butorides striatus*	--	3503.5	Valley foothill and desert riparian habitats; freshwater emergent wetlands, lacustrine and riverine areas.	**Low.** No suitable habitat present.
California quail *Callipepla californica*	--	3503.5	Shrub, scrub, brush, grasslands, open coniferous and deciduous habitats.	**Moderate.** Suitable habitat is present in the Mount Sutro Open Space Reserve.
Marsh wren *Cistothorus palustris*	--	3503.5	Creates a domed nest of grasses and sedges suspended in dense tulle vegetation. Forages in shrubs near marshes.	**Low.** No suitable habitat is present.
American goldfinch *Carduelis tristis*	--	3503.5	Cismontane foothills; riparian and cropland habitats.	**Present.** Suitable habitat is present.
Purple finch *Carpodacus purpureus*	--	3503.5	Coastal foothills and lowlands; riparian and coniferous habitats.	**Present.** Suitable habitat is present.
Olive-sided flycatcher *Contopus cooperi*	--	3503.5	Forest and woodland habitats.	**Present.** Suitable habitat is present.
Barn swallow *Hirundo rustica*	--	3503.5	Open areas from coastal grassland and shrubland to mixed coniferous forests.	**Present.** Suitable habitat is present.
Cliff swallow *Hirundo pyrrhonota*	--	3503.5	Open areas, grasslands or open forests; desert riparian areas.	**Present.** Suitable habitat is present.
Hooded oriole *Icterus cucullatus*	--	3503.5	Lower elevation riparian areas, palm oases, urban and cropland areas.	**Present.** Suitable habitat is present.
Red crossbill *Loxia curvirostra*	--	3503.5	Coniferous forests.	**Present.** Suitable habitat is present.
Red-breasted nuthatch *Sitta canadensis*	--	3503.5	Coniferous forests.	**Present.** Suitable habitat is present.
Pygmy nuthatch *Sitta pygmaea*	--	3503.5	Coniferous forests and pinyon-juniper habitats.	**Present.** Suitable habitat is present.
Bewick's wren *Thyromanes bewickii*	--	3503.5	Chaparral; also pinyon-juniper woodlands.	**Present.** Suitable habitat is present.
Barn owl *Tyto alba*	--	3503.5	Open areas including chaparral, grassland, riparian, wetlands.	**Present.** Suitable habitat is present.

TABLE 4.3-2 (Continued)
SPECIAL-STATUS ANIMAL SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name *Scientific Name*	Federal Status	State Status	Habitat Description	Potential to Occur in the Action Area
Birds (cont.)				
Orange-crowned warbler *Vermivora celata*	--	3503.5	Chaparral, coastal scrub, foothill riparian.	**Present.** Suitable habitat is present.
Wilson's warbler *Wilsonia pusilla*	--	3503.5	Foothill riparian areas, thickets.	**Present.** Suitable habitat is present.
Mammals				
Western red bat *Lasiurus blossevillii*	--	CSC	Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Moderate.** Roosting habitat is available in tree/shrub foliage at Mount Sutro Open Space Reserve. Closest occurrence is within 0.5 mile of the Parnassus Heights campus site in Golden Gate Park. In 2009 surveys, this species was found in some San Francisco parks containing water bodies (Krauel, 2009)[12].
Pallid bat *Antrozous pallidus*	--	CSC	Prefers caves, crevices, hollow trees, or buildings in areas adjacent to open space for foraging. Associated with lower elevations in California.	**Low.** Suitable roosting habitat is available in buildings within the plan area. This species was not detected during 2009 surveys in San Francisco parks (Krauel, 2009). Not expected to breed here but may be present on a transient basis.
Townsend's big-eared bat *Corynorhinus townsendii*	--	CSC SC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings of rocky areas with caves or tunnels. Roosting sites limited. Extremely sensitive to human disturbance.	**Low.** Suitable roosting habitat is available in buildings within the plan area. This species was not detected during 2009 surveys in San Francisco parks (Krauel, 2009).
Yuma myotis *Myotis yumanensis*	--	--	Optimal habitats are open forests and woodlands with water sources to feed over. Roosts in buildings, trees, mines, caves, bridges, and rock crevices. Maternity colonies active May through July.	**Low.** Roosting habitat is available in tree/shrub foliage at Mount Sutro Open Space Reserve. In 2009 surveys, this species was found in some San Francisco parks containing water bodies (Krauel, 2009).
hoary bat *Lasiurus cinereus*	--	--	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths; requires water.	**Low.** Roosting habitat is available in large-diameter trees at Mount Sutro Open Space Reserve, but this species was not detected during 2009 surveys in San Francisco parks (Krauel, 2009). May be present on a transient basis.

[12] Krauel, J.K., *Foraging Ecology of Bats in San Francisco*, M.S. Thesis, San Francisco State University. Available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2001.0016E, 2009.

TABLE 4.3-2 (Continued)
SPECIAL-STATUS ANIMAL SPECIES REPORTED OR WITH POTENTIAL TO OCCUR NEAR THE UCSF 2014 LRDP AREA

Common Name *Scientific Name*	Federal Status	State Status	Habitat Description	Potential to Occur in the Action Area
Mammals (cont.)				
American badger *Taxidea taxus*	--	CSC	Open grasslands with loose, friable soils.	**Low.** No suitable habitat present.
Point Reyes jumping mouse *Zapus trinotatus orarius*	--	CSC	Upland areas of bunch grass in marshes in Point Reyes.	**Low.** Project site is south of the known range for this species.

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3503.5 = Eggs, Nests, and Nestlings Protected under section 3503.5 of the California Department of Fish and Game Code
* = California special animal

SOURCE: USFWS (2014), CDFW (2014), CNPS (2014).

Special-Status Animals

Table 4.3-2 presents special-status wildlife species known to occur in the regional vicinity (i.e., the San Francisco North and San Francisco South quadrangles), and their potential to occur in the LRDP planning area. Of the special-status animals listed in Table 4.3-2, only species classified as having a moderate or high potential for occurrence in the 2014 LRDP planning area were considered in the impact analysis. Species addressed in detail include the following:

- Monarch butterfly
- Special-status birds
- Special-status bats

Aside from breeding birds, special-status wildlife species are not likely to occur within the LRDP campus sites, because most of these areas are highly fragmented and paved or dominated by non-native ornamental or ruderal species, which have poor habitat attributes for wildlife. However, monarch butterflies (*Danaus plexippus*) have been known to overwinter in eucalyptus groves of

San Francisco and the foliage-roosting western red bat has been documented in Golden Gate Park. These species are described in further detail below.

Monarch butterfly. This insect is a California special animal[13] and the butterfly's overwintering sites are tracked by the CNDDB because they are considered vulnerable in the State due to their restricted range (overwintering sites are primarily found only near the coast) and relatively rare distribution in California. This species migrates along the Pacific Coast, and often overwinters in wind-protected groves of trees, such as eucalyptus and Monterey cypress, between October and March. CNDDB documents this species overwintering in the Presidio, Golden Gate Park, Fort Mason, and Telegraph Hill (CDFW, 2014). Parnassus Heights is the only UCSF campus site location with suitable habitat for overwintering monarch aggregations in the 2014 LRDP planning area, however there are no records of such activity within the Mount Sutro Open Space Reserve.

Migratory and special-status birds. Several common migratory birds and native birds could nest in or adjacent to the 2014 LRDP activities sites in trees, shrubs, and buildings. Several raptors are known to nest in San Francisco, including red-tailed hawk, red-shouldered hawk, American kestrel (*Falco sparverius*), Cooper's hawk and great horned owl (*Bubo virginianus*). The federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code protect raptors and most native migratory birds and breeding birds (see Section 4.3.2.1, below).

Special-status bats. Bat surveys conducted in natural areas and parks in San Francisco found that the three most commonly encountered species are Mexican free-tailed bat (*Tadaridia brasiliensis*), Yuma myotis (*Lasiurus blossevillii*), and western red bat, a California species of concern (Krauel, 2009). Mexican free-tailed bats, which have no special status, are widespread and abundant throughout the natural areas of San Francisco, while Yuma myotis and western red bat appear to be relatively less abundant and are generally restricted to parks with lakes (Krauel, 2009). The western red bat and Yuma myotis may potentially occur in forest edge habitat of the Reserve on the Parnassus Heights campus site. Suitable roosting habitat for these bats includes tree foliage, underneath the exfoliating bark of trees, and in tree cavities. The western red bat has been known to roost in the Strybing Arboretum of Golden Gate Park within 0.5 mile of the Parnassus Heights campus site.

Designated Critical Habitat

The USFWS designates critical habitat for certain species listed by the agency as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the federal Endangered Species Act (ESA) as those lands within a listed species' current range that contain the physical or biological features considered essential to the species' conservation, as well as areas outside the species' current range that are determined to be essential to its conservation. However, activities under the 2014 LRDP are not located within designated critical habitat for any federally listed species.

[13] Species listed on the current CDFW "special animals" list (January 2011), which includes 898 species. This list includes species that CDFW considers "those of greatest conservation need."

4.3.1.3 Wetlands and Other Waters of the United States

There are no wetlands or other waters of the state as defined by Section 404 of the federal Clean Water Act or by the Porter-Cologne Water Quality Control Act, Section 13260 of the California Water Code, within the 2014 LRDP planning area. The East Bowl Corridor on the eastern side of the Reserve and contiguous with the City-owned Interior Greenbelt contains Woodland Creek that may be subject to U.S. Army Corps of Engineers jurisdiction as other waters of the U.S. during storm events when the channel conveys storm water flows. Disturbance to the channel bed, bank or surrounding riparian vegetation would also be subject to CDFW jurisdiction and require a Lake or Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code. Proposed 2014 LRDP activities on the Parnassus Heights campus site would not occur within the vicinity of the channel, and therefore impacts on the channel are not considered further in this analysis.

4.3.2 Regulatory Considerations

This section briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources and wetlands as they may apply to the proposed 2014 LRDP.

4.3.2.1 Special-Status Species

Federal Endangered Species Act

The federal ESA protects the fish and wildlife species, and their habitats that have been identified by the USFWS or National Marine Fisheries Service (NMFS) as threatened or endangered. The term "endangered" refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range. The term "threatened" refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future.

The ESA is administered by the USFWS and NMFS. In general, the NMFS is responsible for the protection of ESA-listed marine species and anadromous fishes, whereas listed, proposed, and candidate wildlife, plant species, and fish species are under USFWS jurisdiction. "Take"[14] of listed species can be authorized through either the Section 7 consultation process (for actions by federal agencies) or the Section 10 permit process (for actions by non-federal agencies). Federal agency actions include activities located on federal land or that are conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits and licenses).

Under Section 7 of the ESA, the federal agency conducting, funding, or permitting an action (the federal lead agency) must consult the USFWS and/or NMFS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species or designated

[14] The federal ESA defines the term "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the expected effect. In response, the USFWS issues a biological opinion determining whether (1) the proposed action may either jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or (2) will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

Critical Habitat

Under the ESA, the Secretary of the Interior (or the Secretary of Commerce, as appropriate) formally designates critical habitat for certain federally listed species and publishes these designations in the Federal Register. Critical habitat is not automatically designated for all federally listed species; so many listed species have no formally designated critical habitat.

Critical habitat is defined as the specific areas that are essential to the conservation of a federally listed species, and that may require special management consideration or protection. Critical habitat is determined using the best available scientific information about the physical and biological needs of the species. These needs, or primary constituent elements, include: space for individual and population growth and for normal behavior; food, water, light, air, minerals, or other nutritional or physiological needs; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitat that is protected from disturbance or is representative of the historical geographic and ecological distribution of a species. There is no federally designated critical habitat in the LRDP planning area.

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFW has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code, Section 2070). The CDFW also maintains a list of "candidate species," which are species formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. In addition, the CDFW maintains lists of "species of special concern," which serve as watch lists.

The CESA prohibits the take of plant and animal species designated by the Fish and Game Commission as either threatened or endangered in the State of California. "Take" in the context of the CESA means to hunt, pursue, kill, or capture a listed species, as well as any other actions that may result in adverse impacts when attempting to take individuals of a listed species. The take prohibitions also apply to candidates for listing under the CESA. However, Section 2081 of the CESA allows the CDFW to authorize exceptions to the state's take prohibition for educational, scientific, or management purposes.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species could be present on the project area and determine whether the proposed project could have a potentially

significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that could affect a candidate species.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed the CDFW to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The CESA expanded on the original NPPA and enhanced legal protection for plants. The CESA established threatened and endangered species categories, and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, three listing categories for plants are employed in California: rare, threatened, and endangered.

Special-Status Natural Communities

Special-status natural communities are identified as such by the CDFW's Natural Heritage Division and include those that are naturally rare and those whose extent has been greatly diminished through changes in land use. The CNDDB tracks 135 such natural communities in the same way that it tracks occurrences of special-status species: information is maintained on each site in terms of its location, extent, habitat quality, level of disturbance, and current protection measures. The CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. While there is no statewide law that requires protection of all special-status natural communities, CEQA requires consideration of the potential impacts of a project on biological resources of statewide or regional significance.

Federal Migratory Bird Treaty Act

The federal MBTA (United States Code, Title 16, Section 703, Supplement I, 1989) prohibits taking, killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. *Take* is defined in the federal Endangered Species Act as "…harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species." Harm may include significant habitat modification where it actually kills or injures a listed species through impairment of essential behavior (e.g., nesting or reproduction). Therefore, for projects that would not result in the direct mortality of birds, the MBTA is generally also interpreted in CEQA analyses as protecting active nests of all species of birds that are included in the "List of Migratory Birds" published in the Federal Register in 1995. With respect to nesting birds, while the MBTA itself does not provide specific take avoidance measures, a set of measures sufficient to demonstrate take avoidance have been developed over time by USFWS and CDFW. Since these measures are typically required as permitting conditions by these agencies, they are often incorporated as mitigation measures for projects during the environmental review process, unless the project as proposed incorporates and is consistent with these protections. These requirements include preconstruction nesting bird surveys and establishment of appropriate buffers from construction if active nests are found.

California Fish and Game Code

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Section 3503.5 of the code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) allow the designation of a species as fully protected. This is a greater level of protection than is afforded by CESA. Except for take related to scientific research, all take of fully protected species is prohibited**.**

Wetlands and Other Waters of the United States

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines and regulates wetlands and other waters in Section 404 of the Clean Water Act as "areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3).

Under normal circumstances, the federal definition of wetlands requires the presence of three identification parameters: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the United States. Other waters of the U.S. include unvegetated waters of streams, lakes and ponds.

The Porter-Cologne Water Quality Control Act Section 13260 of the California Water Code requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Water Quality Control Act definition, the term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—in California, waters of the United States represent a subset of waters of the state. Therefore, the State of California through each of nine Regional Water Quality Control Boards retains authority to regulate discharges of waste into any waters of the state, regardless of whether the U.S. Army Corps of Engineers has concurrent jurisdiction under Clean Water Act Section 404.

4.3.2.2 Applicable Local Plans and Policies

This section discusses plans or policies developed by UCSF pertaining to biological resources. UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local regulations to the extent feasible. UCSF and City plans and regulations that are relevant to the biological resources impacts analysis are summarized below.

UCSF Mount Sutro Open Space Reserve Management Plan

During the development of the 1996 UCSF LRDP, the UCSF Community Advisory Group advised that the plan include recommendations for a maintenance and restoration program for the Mount Sutro Open Space Reserve's vegetation and hiking trails. This management plan was developed in 2001 to provide a framework for protecting, enhancing, and restoring the Reserve while maintaining a balance between neighborhood and University interests. Seven planning principles inform the management plan and are listed, below.

- Ensure Public Safety and Property Protection
- Improve the Health of the Forest
- Protect and Expand Native Plants
- Enhance Wildlife Habitat Values
- Maintain Scenic Quality
- Improve Public Access
- Implement Resource Management Plan

The 2001 Management Plan continues to serve as a guide for maintenance and restoration of the Reserve. In recognition of the need to maintain ongoing dialogue with the community regarding the management of the Reserve, UCSF initiated a new round of community meetings in 2009 - 2010. The process resulted in identifying demonstration project areas and specific management actions for those demonstration areas. Proposed management activities at that time included thinning the forest, native plant restoration and enhancement, conversion planting (removal of non-native trees and plants and conversion to native species) in select areas and construction of new trails. A UCSF Mount Sutro Management Draft Environmental Impact Report that analyzed the proposed management activities was prepared and published in January, 2013. Based on feedback on those proposed activities, and in light of the elevated fire danger resulting from California's periodic drought conditions, UCSF retained a professional forester to help develop a plan for the Reserve that focused on reducing the danger of wildfire. Proposed hazard reduction measures, consistent with best management practices applied throughout California in forests located near urban areas, were developed and presented to the community in November, 2013. As of this writing, UCSF is carefully considering the public feedback received to date—responding to both previous forest management proposals and to the proposed fire hazard reduction measures presented in November, 2013—to determine the best path forward. Proposed trails are now being analyzed as part of proposed activities under the 2014 LRDP and are described in this EIR in Section 3.8.1.

San Francisco Public Works Code

The San Francisco's Urban Forestry Ordinance (Article 16 of the Public Works Code) protects San Francisco's street trees, significant trees, and landmark trees regardless of species. The ordinance protects the following three categories of trees, which are defined as follows:

> A **street tree** is "any tree growing within the public right-of-way, including unimproved public streets and sidewalks, and any tree growing on land under the jurisdiction of the Department [of Public Works]" as defined in Section 802 of the ordinance. Section 806b

requires entities (other than the Department of Public Works) to obtain a permit from the department prior to removing any street trees.

A **significant tree** is defined in Section 810A of the ordinance as any tree: (1) located on property under the jurisdiction of the Department of Public Works or on privately owned property with any portion of its trunk within 10 feet of the public right-of-way, and (2) that satisfies at least one of the following criteria: (a) a diameter at breast height in excess of 12 inches, (b) a height in excess of 20 feet, or (c) a canopy in excess of 15 feet. Any entity other than the Department of Public Works must obtain a permit to remove significant trees according to the process described in Section 806b.

A **landmark tree** is any tree that: (1) has been nominated as such by a member of the public, a landowner, the San Francisco Planning Commission, the Board of Supervisors, or the Historic Preservation Commission, (2) the Urban Forestry Council (within the San Francisco Department of the Environment) has subsequently recommended as a landmark tree, and (3) is designated a landmark tree by ordinance approved by the Board of Supervisors. According to Section 810 of the ordinance, nominated trees undergoing review are protected according to the same standards as designated landmark trees until the review process is completed.

Permits are required for planting or removing street trees and significant trees, and protection measures are required for these trees if construction work would occur within the trees' dripline. Activities under the 2014 LRDP are not anticipated to affect protected trees.

Standards for Bird-Safe Buildings

The San Francisco Planning Department adopted *Standards for Bird-Safe Buildings* in 2011, adding Planning Code Section 139 (San Francisco Planning Department, 2011). These standards guide the use and types of glass and façade treatments, wind generators and grates, and lighting treatments. The standards impose requirements for bird-safe glazing and lighting in structures or at sites that represent a hazard to birds and provide information on educational and voluntary programs related to bird hazards. The standards define two types of bird hazards. "Location-related hazards" are buildings located inside of, or within a clear flight path of less than 300 feet from, an Urban Bird Refuge.[15] Such buildings require treatment when new buildings are constructed; additions are made to existing buildings; or existing buildings replace 50 percent or more of the glazing within the "bird collision zone."[16] The standards require implementation of the following treatments for façades facing, or located within, an Urban Bird Refuge:

- No more than 10 percent untreated glazing is allowed on building façades within the bird collision zone.
- Lighting must be shielded, and no uplighting is permitted. No event searchlights are permitted.

[15] An Urban Bird Refuge is defined in the Standards for Bird-Safe Buildings as: any area of open space two acres or larger that is dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, water features, or wetlands; open water; and some green rooftops.

[16] The "bird collision zone" is that portion of the building that begins at grade and extends upward for 60 feet.

- Sites are not permitted to use horizontal access windmills or vertical access wind generators that do not appear solid.

"Feature-related hazards" include building- or structure-related features that are considered potential "bird traps" regardless of location (e.g., glass courtyards, transparent building corners, or clear glass walls on rooftops or balconies). Structures that include these elements must treat 100 percent of these elements in the building with bird safe glazing.

Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation, including City of San Francisco General Plan policies regarding protection of biological resources. 2014 LRDP activities would not be subject to the above standards, although UCSF could voluntarily consider such policies in the design of campus buildings.

4.3.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any applicable policies protecting biological resources?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?

g) Exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance?

After evaluation of the activities proposed by the 2014 LRDP, the Initial Study concluded that all LRDP proposals would clearly result in no impact or a less-than-significant impact at the Mission Bay, Mount Zion and Mission Center campus sites. At the Parnassus Heights campus site the Initial Study concluded that all LRDP proposals would result in no impact or a less-than-significant impact, with the exception of criteria a) and d).

For the purposes of this EIR, the word "substantial" as used in the significance criteria above is defined by the following three principal components:

- Magnitude and duration of the impact (e.g., substantial/not substantial)
- Uniqueness of the affected resource (rarity)
- Susceptibility of the affected resource to disturbance

4.3.4 Analysis Methodology

Impacts on biological resources are evaluated based on the likelihood that special-status species, sensitive habitats, wildlife corridors, and protected trees are present within the 2014 LRDP planning area (as described in Section 4.7.1, *Setting*), and the likely effects that activities under the 2014 LRDP including construction, operation, and maintenance might have on these resources. Special-status resources that have no or low potential to occur in the 2014 LRDP planning area (as presented in Tables 4.7-1 and 4.7-2) are not considered in the impact analysis.

4.3.5 References

California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) species occurrences for the *San Francisco North* and *San Francisco South* U.S. Geographical Survey (USGS) 7.5-minute topographic quadrangles, Commercial Version, accessed February 2014.

California Native Plant Society (CNPS), Inventory of Rare and Endangered Plants for *San Francisco North* and *San Francisco South* USGS 7.5-minute topographic quadrangles. Available online at http://www.rareplants.cnps.org/. Accessed July, 2013.

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University of California San Francisco (UCSF), *UCSF Long Range Development Plan Final EIR*, City of San Francisco, prepared by EIP Associates, January 1997.

UCSFa, *Draft EIR for the UCSF Mount Sutro Management Project*, City of San Francisco, prepared by UCSF Financial and Administrative Services Planning, January 2013.

UCSFb, *UCSF 2014 Long Range Development Plan Initial Study.* City of San Francisco, prepared by Environmental Science Associates (ESA), September 2013.

United States Fish and Wildlife Service (USFWS), Federally Endangered and Threatened Species List for the *San Francisco North* and *San Francisco South* USGS 7.5-minute topographic quadrangles, February 2014.

4.4 Cultural Resources

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Cultural Resources impacts. 2014 LRDP Cultural Resources effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures*. Cultural Resources effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures*, Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.4.1 Regional Setting

The prehistoric (2500 BC to 1500 AD) occupation and use of the San Francisco Bay Area is complex, and understanding it is complicated by the rapid development of the Bay Area during the California Gold Rush that likely contributed to the destruction of many archaeological sites that may have existed or rendered those sites inaccessible due to surface cover. On the basis of archaeological data from Bay Area sites that have survived to the present and from ethnographic sources, archaeologists know that prehistoric life-ways in the Bay Area involved subsistence hunting and gathering. Seasonally, parties went out from villages to temporary camps within their territory to hunt and gather mussels, shellfish, salmon, seals, land mammals, and plant foods, typically acorns. Protohistoric (1550s to 1770s) and historic (1770s to present-day) land uses by native peoples is better understood, but still complicated by displacement of the native peoples, and European American development of the region.

"Costanoan" is a term is originally derived from a Spanish word designating the coastal peoples of Central California. Today Costanoan is used as a linguistic term that references to a larger language family spoken by distinct sociopolitical groups that spoke at least eight languages (as different as Spanish is from French) of the same Penutian language group. This group refers to themselves as "Ohlone." While traditional anthropological literature portrayed the Ohlone peoples as having a static culture, today it is better understood that many variations of culture and ideology existed within and between villages. Static descriptions of separations between native cultures of California made it an easier task for ethnographers to describe past behaviors, but this masks Native adaptability and self-identity. California's Native Americans never saw themselves as members of larger "cultural groups," as described by anthropologists. Instead, they saw themselves as members of specific villages, perhaps related to others by marriage or kinship ties, but viewing the village as the primary identifier of their origins. The Ohlone once occupied a large territory from San Francisco Bay in the north to the Big Sur and Salinas Rivers in the south. All of UCSF's existing sites are within Ohlone territory.

Initial European exploration of the San Francisco peninsula began in 1769 and lasted until 1810. During this period, a number of Spanish expeditions penetrated the territory occupied by the Ohlone peoples. Between 1769 and 1776, forays led by Portola, Ortega, Fages, Fages and Crespi,

Anza (two expeditions), Rivera, and Moraga were carried out. Favorable reports led to the founding of seven missions in the region between 1770 and 1797.

In the spring of 1776, the site of San Francisco was chosen by Juan Batista Anza for the establishment of a mission and military post. Later that same year, the Mission San Francisco de Asís (also known as Mission Dolores) and Presidio de San Francisco were officially dedicated and Jose Joaquin Moraga (Anza's lieutenant) took formal possession in the name of King Carlos III.

The Spanish annexation and colonization of Alta California, as manifested in the religious-military mission system, produced profound changes in the cultures of the indigenous population. The missions resettled and concentrated the aboriginal hunter-gatherer population into agricultural communities. The concentration of population, coupled with the indigenous people's lack of immunity to European diseases, caused the tribes to be decimated by common diseases which were generally not fatal to Europeans. It has been estimated that the Ohlone population declined from 10,000 or more in 1770 to less than 2,000 in 1832. Today, the Ohlone still have a strong presence in the San Francisco Bay Area, and are highly interested in their historic and prehistoric past.

Mexico established jurisdiction over Alta California in April of 1822. During the Mexican Period (1822–1848), control over this remote area by the central and local Mexican authorities was never strong. California became part of the United States as a consequence of the U.S. victory over Mexico in the Mexican War. The territory was formally ceded in the treaty of Guadalupe Hidalgo in 1848, and was admitted as a state in 1850.

Prior to the discovery of gold at Sutter's Mill on January 24, 1848, development in San Francisco consisted of the Spanish/Mexican facilities (i.e., the Presidio and Mission) and a small settlement known as Yerba Buena situated on the shores of the cove by the same name. The inhabitants of Yerba Buena were predominantly non-Spanish, English-speaking immigrants (e.g., U.S. or British citizens). Sometime before the Gold Rush, the inhabitants of Yerba Buena officially changed the name of their settlement to San Francisco. Following the discovery of gold, San Francisco transformed quickly from an isolated hamlet into a bustling center of commerce. After the discovery of gold, the population of San Francisco grew from 375 people in 1847 to 2,000 by February 1849, and by the end of 1849, there may have been as many as 20,000 people living in the City (CCSF, 2011).

Silver discoveries, including the Comstock Lode in 1859, further drove rapid population growth. Entrepreneurs sought to capitalize on the wealth generated by the Gold Rush by founding Wells Fargo in 1852 and the Bank of California in 1864. Development of the Port of San Francisco and the establishment in 1869 of overland access to the Eastern U.S. rail system via the newly completed Pacific Railroad helped make San Francisco and the Bay Area a center for trade. The first cable cars carried San Franciscans up Clay Street in 1873. As rows of Victorian houses began to take shape throughout the city, civic leaders campaigned for a spacious public park, resulting in plans for Golden Gate Park. San Franciscans built schools, churches, theaters, and all the hallmarks of civic life. The Presidio developed into the most important American military

installation on the Pacific coast. By 1890, San Francisco's population approached 300,000, making it the eighth largest city in the U.S. at the time.

The great earthquake and fire of 1906 destroyed nearly all of downtown San Francisco, killed approximately 3,000 people, and left more than half of the city's population of 400,000 homeless. Refugees settled temporarily in makeshift tent villages in Golden Gate Park, the Presidio, on the beaches, and elsewhere. Many fled permanently to the East Bay. Rebuilding after the earthquake was rapid and by the time the city hosted the Panama-Pacific International Exposition in 1915, the city had been reborn. Development of the western portions of San Francisco accelerated during this period, with the establishment of the Western Addition, the Ingleside, Richmond, and Sunset Districts.

It was also during this period San Francisco built some of its most important infrastructure. Civil Engineer Michael O'Shaughnessy was hired by San Francisco Mayor James Rolph as chief engineer for the city in September 1912 to supervise the construction of the Twin Peaks Reservoir, the Stockton Street Tunnel, the Twin Peaks Tunnel, the San Francisco Municipal Railway, the Auxiliary Water Supply System, and new sewers. San Francisco's streetcar system, of which the J, K, L, M, and N lines survive today, was pushed to completion by O'Shaughnessy between 1915 and 1927. It was the O'Shaughnessy Dam, Hetch Hetchy Reservoir, and Hetch Hetchy Aqueduct that would have the largest effect on San Francisco. An abundant water supply enabled San Francisco to develop into the city it has become today.

San Francisco also undertook two great civil engineering projects, simultaneously constructing the San Francisco – Oakland Bay Bridge and the Golden Gate Bridge, completing them in 1936 and 1937 respectively.

During World War II, the Hunters Point Naval Shipyard became a hub of activity, and Fort Mason became the primary port of embarkation for service members shipping out to the Pacific Theater of Operations. The explosion of jobs drew many people to the area, especially African Americans from the South. After the end of the war, many military personnel returning from service abroad and civilians who had originally come to work decided to stay. Numerous physical and demographic changes occurred to San Francisco after the war to accommodate the huge post-war population increase. Today, the city has a population of over 800,000 people.

With thousands of buildings and structures in San Francisco, some of which date to the earliest days of the Mission Period and the Gold Rush, there are numerous historic sites and districts which convey the city’s historic significance as the West Coast’s preeminent city. Currently, San Francisco contains approximately 175 properties listed in the National Register of Historic Places, well over a thousand buildings and structures listed in or eligible for listing in the California Register of Historical Resources, approximately 50 California State Historical Landmarks, approximately 260 locally-designated historical landmarks, and 11 locally-designated historic districts (NoeHill, 2014).

4.4.1.1 University of California, San Francisco

One of the world's leading health sciences universities, the University of California, San Francisco (UCSF), dates its founding to 1864, when South Carolina surgeon Hugh Toland founded a private medical school in San Francisco.

The college prospered, and Toland sought to affiliate with the University of California, which had opened its campus in Berkeley in 1868. UC President Daniel Coit Gilman, who strongly supported science education, set a precedent for the young university by affiliating in 1873 with both Toland Medical College and the California College of Pharmacy. Eight years later, the UC Regents added a dental college.

The three Affiliated Colleges — also called UC departments — were located at various sites in San Francisco, and after several years there was strong interest in bringing them together. San Francisco Mayor Adolph Sutro donated 13 acres on a site overlooking Golden Gate Park — known today as Parnassus Heights — and the new Affiliated Colleges buildings opened in fall 1898.

When the great San Francisco earthquake destroyed much of San Francisco and the city's medical facilities in April 1906, more than 40,000 people took shelter and sought treatment in a tent city in Golden Gate Park, where makeshift outdoor hospitals were set up. The Affiliated Colleges, located on the hill above the encampment in what was then the far western section of the city, suddenly were situated close to a significant population. Faculty sprung into action treating those injured from the earthquake and subsequent fire.

One of the Affiliated Colleges buildings at Parnassus Heights was renovated as a facility for inpatients, outpatients and dental services, and opened in April 1907 with 75 beds.

With this new facility came the need to recruit nurses and the opportunity to train nursing students. In 1907, the UC Training School for Nurses was established, adding a fourth professional school to the Affiliated Colleges. To make room for expanded clinical services and instruction on Parnassus, the medical college basic science departments — pathology, anatomy and physiology — moved to the Berkeley campus.

Over the next 50 years, leaders of the Affiliated Colleges and UC moved forward with an eye to establishing an institution with a national reputation. They improved the curriculum, upgraded admission requirements, expanded research and clinical programs, and built new facilities.

In 1964, the institution, operating under the name University of California, San Francisco Medical Center, was given full administrative independence, becoming the ninth campus in the UC system and the only one devoted exclusively to the health sciences (UCSF, 2014).

4.4.2 Regulatory Considerations

4.4.2.1 Federal

The National Register of Historic Places (National Register) is the official U.S. government list of properties that have architectural, historical, or cultural significance at the national, state, or local level. The National Register is administered by the National Park Service, an agency of the U.S. Department of the Interior. The National Register lists sites, buildings, structures, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the local, regional, state, or national level. Listing of a property in the National Register does not prohibit demolition or alteration of that property, but does denote that the property is a resource worthy of recognition and protection. The National Register includes four criteria under which a structure, site, building, district, or object can be considered significant for listing. These include:

- **Criterion A (Event):** Resources that are associated with events that have made a significant contribution to the broad patterns of our history
- **Criterion B (Person):** Resources that are associated with the lives of persons significant in our past
- **Criterion C (Design/Construction):** Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master
- **Criterion D (Information Potential):** Resources that have yielded, or may be likely to yield, information important in prehistory or history

4.4.2.2 State

The Office of Historic Preservation (OHP) maintains the California Register of Historical Resources (California Register). The California Register includes properties that are listed or are formally determined eligible for listing in the National Register of Historic Places; State Historical Landmarks; and eligible Points of Historical Interest. Other resources that may be eligible for the California Register, and which require nomination and approval for listing by the State Historic Resources Commission, include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resources surveys conducted in accordance with OHP procedures, historic resources or districts designated under a local ordinance consistent with the procedures of the State Historic Resources Commission, and local landmarks or historic properties designated under local ordinance. Under CEQA, a cultural resource is considered significant if it is at least 45 years old and meets any of the criteria described below:

- **Criterion A:** Resources that are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- **Criterion B:** Resources that are associated with the lives of persons important in our past
- **Criterion C:** Resources that embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic values

- **Criterion D:** Resources that have yielded or may be likely to yield information important in prehistory or history

The fact that a resource is not listed in, or determined to be eligible for listing the California Register, not included in a local register of historic resources, or identified in a historical resources survey does not preclude a lead agency from determining that the resources may be an historical resource (CEQA Guidelines Section 15064.5(a)(4)).

The OHP maintains the Historical Resources Information System (formerly known as the California Archaeological Inventory) through 11 information centers throughout the state. The Northwest Information Center (NIC), which includes San Francisco County within its jurisdiction, is a repository for archaeological site records and other information on cultural resources, including the National Register and the California Inventory of Historical Resources and Points of Historic Interest lists. Upon request, the NIC conducts searches of its records to determine whether any cultural resources are known to exist in or near the subject property.

4.4.2.3 Local

Article 10 of the San Francisco Planning Code contains measures to identify structures or landmarks that have historical, architectural, or aesthetic merit. These structures are recorded in a list that is approved by the San Francisco Historic Preservation Commission and the San Francisco Board of Supervisors, and includes all structures on federal and state lists. Applications to construct, alter, or demolish structures that have been deemed to have significant merit require approval by the Historic Preservation Commission and in the case of applications involving multiple approvals such as a conditional use authorization, the Planning Commission before issuance of a permit.

The San Francisco General Plan contains policies governing the preservation of historic architectural resources that are considered to be locally significant. The General Plan Urban Design Element addresses: (1) preservation of landmarks designated by the City; (2) enhancement of the original character of older buildings when remodeling; and (3) respecting the character of older nearby development in the design of new buildings.

4.4.3 Significance Standards

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, the 2014 LRDP would have a significant effect on the environment if it would exceed the criteria listed below:

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of formal cemeteries?

The significance standards for the first two impact criteria are further explained and defined below. CEQA Guidelines Section 15064.5(b)(1) defines a significant effect as one that would materially impair the significance of a historical resource. According to CEQA Guidelines Section 15064.5(b)(2), material impairment of a resource's historic significance could result if the project would:

- Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources;

- Demolish or materially alter in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to local ordinance or resolution (PRC Section 5020.1[k]), or its identification in a historical resources survey meeting the requirements of PRC Section 5024.1(g) unless a preponderance of evidence establishes that the resource is not historically or culturally significant; or

- Demolish or materially alter in an adverse manner those physical characteristics of a resource that convey its historical significance and that justify its eligibility for its inclusion in the California Register, as determined by the lead agency. Generally, a project that follows the Secretary of the Interior's guidelines will be considered mitigated to a less than significant level, according to CEQA Guidelines Section 15064.5(b)(3).

Generally, a project that follows the Secretary of the Interior's guidelines will be considered mitigated to a less than significant level, according to CEQA Guidelines Section 15064.5(b)(3).

CEQA Guidelines Section 15064.5(c) applies to effects on archaeological sites. Effects on non-unique archaeological resources are not considered significant. Regarding unique archaeological resources, lead agencies may require that reasonable efforts be made to permit such resources to be preserved in place or left in an undisturbed state. To the extent that unique archaeological resources are not preserved in place or not left undisturbed, mitigation measures to protect such resources are required (PRC Section 21083.2 [c]). Additionally, mitigation measures may be imposed to make provisions for archaeological sites accidentally discovered during construction. Generally, with the imposition of mitigation measures, effects on archaeological resources would be reduced to an insignificant level.

4.4.4 Analysis Methodology

The UCSF campus sites have undergone cultural resources analyses in the form of archival research by qualified archaeologists and architectural historians. The historic architectural resource analysis was completed by qualified architectural historians who visited the four affected UCSF campus sites in this EIR to take photographs and review historical documentation on the buildings and structures (including previous environmental reviews), and complete archival

research. The information gathered was used to evaluate whether impacts would occur to historic or cultural resources due to the proposed 2014 LRDP activities. For each potential impact, the analysis compares the net impact to the standards of significance and determines the impact's level of significance under CEQA. If the impact would be significant, the analysis identifies feasible mitigation measures that would eliminate the impact or reduce it to a less-than-significant level. If the impact cannot be reduced to a less-than-significant level after implementation of feasible mitigation measures, then the impact would remain significant and unavoidable.

4.4.5 References

City and County of San Francisco (CCSF), *34th America's Cup Draft EIR*, 2011.

NoeHill.com, www.noehill.com, accessed January 22, 2014.

UCSF, UCSF History, www.ucsf.edu/about/history-1, accessed January 28, 2014.

4.5 Geology, Soils and Seismicity

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Geology, Soils and Seismicity impacts. 2014 LRDP Geology, Soils and Seismicity effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Geology, Soils and Seismicity effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.5.1 Regional Setting

The LRDP planning area is located on the northern tip of the San Francisco Peninsula, within the Coast Ranges geologic province. The Coast Ranges is a northwest-trending series of mountain ranges and valleys that was created through tectonic forces associated with the plate margin. San Francisco Bay, which was formed within a shallow, regional structural depression, is the predominant feature, separating smaller northern and southern mountain ranges. Much of the Coast Range province is composed of marine sedimentary and volcanic rocks that form the Franciscan Complex, located east of the San Andreas Fault. The general geologic setting of the city is characterized by bedrock hills bounded by broad valleys and underlain by unconsolidated deposits. The Franciscan Complex generally consists of graywacke (sandstone), shale, chert, greenstone, and melange; in certain places, serpentine, an asbestos-containing rock-type, is found within the shale matrix. Bedrock outcrops in hilly areas account for approximately 24% of the land surface in San Francisco. The region west of the San Andreas Fault is underlain by a mass of basement rock known as the "Salinian Block." This block contains igneous rocks,[17] Tertiary-age (up to 65 million years old) marine sandstone, and various metamorphic rocks[18] believed to have originated some 350 miles to the south. The Salinian Block has been moving northward along the west side of the San Andreas Fault.

4.5.1.1 Local Soils

Soils at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites vary among the sites but very generally include a combination of fill, silty clays, clays, sands, and loams with the upland soils tending to be shallower and richer in clay (Helley and Lajoie, 1979). For example, soils at the Mission Center site were characterized as 13 to 20 feet of artificial fill underlain by 20 to 50 feet of soft Bay Mud materials (Shannon & Wilson, 1970). Soils at the Mission Bay campus contain varying thicknesses of artificial fill and bay mud (Harding ESE, 2001). The Parnassus campus soils, similar to the soils at Mount Zion are in general shallower and also include dune sand deposits (Rutherford & Chekene, 2006). Fill material is variable in its soil properties and especially within the Mission Bay campus which includes rubble from the 1906 earthquake.

[17] Igneous rocks are those that form from molten magma, such as granite.
[18] Metamorphic rocks are sedimentary or volcanic rocks altered by prolonged heating and deformation.

4.5.1.2 Geologic Hazards

Expansive Soils

Expansive soils possess a "shrink-swell" behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Expansive soils occur in the upper 5 feet of undisturbed soil. Campus sites that have undergone development have reworked or removed any expansive soils that were previously present. Similarly, development of large structures proposed under the 2014 LRDP would necessarily require that any shallow expansive soils be reworked or removed during excavation, grading, and construction. Furthermore, previous geotechnical investigations did not identify expansive soils as a geologic hazard for the Mission Bay, Parnassus Heights or Mount Zion campus sites.

Soil Erosion

Erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind, and underground water. Soils containing high amounts of silt or clay can be easily erodable, while sandy soils are less susceptible. Excessive soil erosion can eventually damage building foundations and roadways. In developed urban areas, erosion potential is highest during construction and typically reduced once the soil is graded and covered with concrete, structures, asphalt or well established landscaping. Vegetated areas in non-developed areas such as the Mt. Sutro Open Space Reserve can be made more susceptible to erosion through the creation of trails.

Differential Settlement

Loose, soft soils composed of sand, silt, and clay have the potential, if not properly engineered, to settle after a building or other load is placed on the surface. Differential settlement of the loose soils generally occurs slowly, but over time may amount to more than most structures can tolerate. The weak and compressible nature of the underlying soils and the unpredictable performance of artificial fill provide poor support for structure and infrastructure. Differential settlement can damage buildings and their foundations, roads, and rail lines and result in breakage of underground pipes.

Landslide Hazards

The susceptibility of land (slope) failure is dependent on the slope and geology as well as the amount of rainfall, excavation, or seismic activities. A landslide is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. In San Francisco, a major earthquake could cause movement of active slides or could trigger new slides in the same general areas of previous slides. This potential exists only at the Parnassus Heights campus site, which is located on steep hills underlain by Franciscan rocks, a type of rock that is susceptible to landslides. However, according to a previous geotechnical investigation, the deposits at the Parnassus Heights campus

site are from the Merced and Colma Formations, which consist of unconsolidated sand, silt, and clay. These soils have fair to good stability under seismic conditions (URS Consultants, 1974). More recently, a slope stability assessment conducted in 2006 provided a qualitative assessment of the slope stability potential of upland deposits on Mt. Sutro showing some isolated areas of instability.

4.5.1.3 Regional Faults

The San Francisco Bay Area contains both active and potentially active faults and is considered a region of high seismic activity (**Table 4.5-1** and **Figure 4.5-1**).[19] The USGS Working Group on California Earthquake Probabilities determined that there is a 63% likelihood of one or more earthquakes of Richter magnitude (M) 6.7 or higher in the San Francisco Bay Area between now and 2037 (USGS, 2008). While the Richter magnitude is a measure of the energy released in an earthquake, intensity is a measure of the ground-shaking effects at a particular location. The estimated maximum moment magnitudes[20] shown in Table 4.5-1 represent *characteristic* earthquakes on particular faults. Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking.

The Modified Mercalli (MM) intensity scale (**Table 4.5-2**) is commonly used to measure earthquake effects due to ground shaking. The Modified Mercalli values for intensity range from MM-I (earthquake not felt) to MM-XII (damage nearly total); intensities ranging from MM-IV to X could cause moderate to significant structural damage.[21] In the City and County of San Francisco, maximum ground-shaking intensity resulting from an earthquake generated on the San Andreas fault, discussed below, is anticipated to range between strong (MM-VII) to violent (MM-IX), depending upon specific location. A small southwest portion of the county could experience very violent (MM-X) ground-shaking intensities (ABAG, 2003a).

San Andreas

The San Andreas Fault Zone is a major structural feature in the region and forms a boundary between the North American and Pacific tectonic plates, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace

19 An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 2007).

20 Moment magnitude is related to the physical size of a fault rupture and movement across a fault. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave. Moment magnitude provides a meaningful physical measure of the size of a faulting event. The concept of "characteristic" earthquake means that we can anticipate, with reasonable certainty, the actual earthquake that can occur on a fault.

21 The damage level represents the estimated overall level that will occur for various MM intensity levels. However, the damage will not be uniform. Some buildings will experience substantially more damage, and others will experience substantially less damage. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance.

TABLE 4.5-1
ACTIVE FAULTS IN THE VICINITY OF SAN FRANCISCO

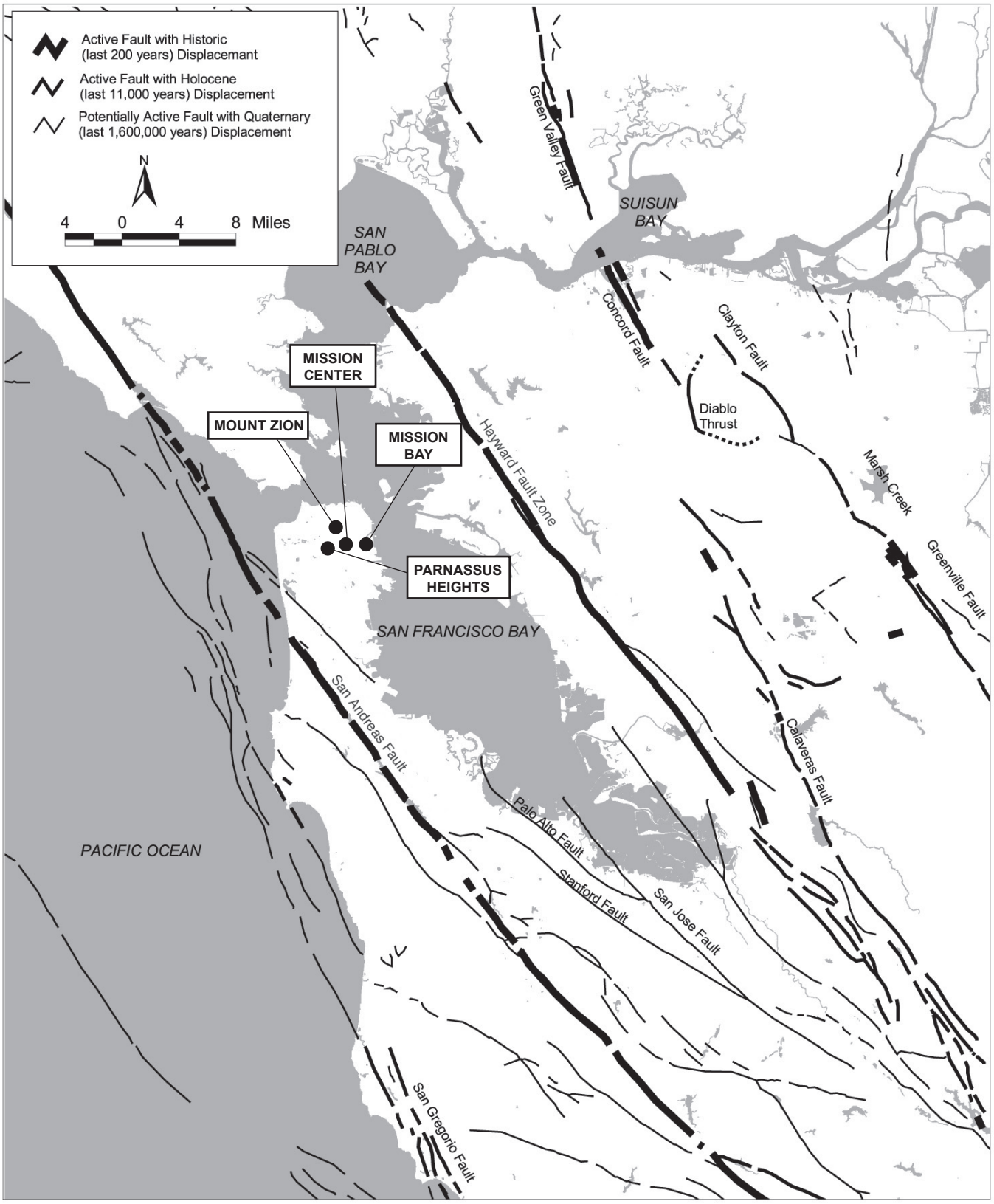
Fault	Distance and Direction from San Francisco County[a]	Recency of Movement	Fault Classification[b]	Historical Seismicity, Richter Magnitude[c]	Maximum Moment[d] Magnitude Earthquake
San Andreas	<1 mile west	Historic (1906; 1989 ruptures) Holocene	Active	M 7.1, 1989 M 8.25, 1906 M 7.0, 1838 Many <M 6	7.9
Hayward	10 miles east	Historic (1836; 1868 ruptures) Holocene	Active	M 6.8, 1868 Many <M 4.5	7.1
San Gregorio–Hosgri	12 miles southwest	Holocene – Late Quaternary	Active	Many M 3–M 6.4	7.3
Rodgers Creek	25 miles northeast	Historic Holocene	Active	M 6.7, 1898 M 5.6, M 5.7, 1969	7.0
Calaveras	25 miles east	Historic (1861 rupture) Holocene	Active	M 5.6–M 6.4, 1861 M 4–M 4.5 swarms 1970, 1990	6.8
Concord–Green Valley	25 miles east	Historic (1955) Holocene	Active	Historic active creep	6.9

[a] Fault distance is referenced from the fault's closest point to the county of San Francisco (excluding Treasure Island). Actual fault distance from specific project locations may therefore vary from those listed.
[b] Refer to footnote 3 of this section, previous.
[c] Richter magnitude (M) and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.
[d] Refer to footnote 4, previous, for a definition of moment magnitude. The maximum moment magnitude earthquake, derived from the joint CGS/USGS Probabilistic Seismic Hazard Assessment for the State of California, 1996. CGS OFR 96-08 and USGS OFR 96-706).

SOURCES: Hart (2007); Jennings (2010); and Peterson et al. (1996)

extends out into the Pacific Ocean. The main trace of the San Andreas fault through the Bay Area trends northwest through the Santa Cruz Mountains and the eastern side of the San Francisco Peninsula. Near San Francisco, the San Andreas fault trace is located immediately offshore north of Colma, and continues northwest through the Pacific Ocean approximately six miles due west of the Golden Gate Bridge.

The San Andreas Fault Zone was the source of two major seismic events in recent history that resulted in widespread damage through the San Francisco region: the 1906 San Francisco earthquake (M 8.25), and the more recent 1989 Loma Prieta earthquake (M 7.1). The Loma Prieta earthquake caused serious damage to elevated freeway structures in San Francisco and resulted in the collapse of a panel on the upper deck of the Bay Bridge. The Loma Prieta earthquake was considerably smaller than the postulated maximum earthquake for the region, yet caused serious damage, demonstrating the tremendous impact that earthquakes can have on transportation systems in the city.



UCSF Long Range Development Plan Environmental Impact Report

SOURCE: Jennings, 2010

Figure 4.5-1
Active and Potentially Active
Bay Area Earthquake Faults

TABLE 4.5-2
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration[a], g
I	Not felt except by a very few persons under especially favorable circumstances.	< 0.0017 g
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	< 0.014 g
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck.	< 0.014 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	0.014–0.039 g
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	0.039–0.092 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.	0.092–0.18 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.	0.18–0.34 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	0.34–0.65 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.65–1.24 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 1.24 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

[a] One "g," the acceleration due to gravity, is 980 centimeters per second. Any object undergoing a 1.0 g acceleration would move from rest to a speed of 9.8 meters per second (32.2 feet per second) in 1.0 second, by which time it would have traveled 4.9 meters (16.1 feet).

SOURCES: CGS (2003)

4.5.1.4 Seismic Hazards

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults, which are referenced in Table 4.5-1. None of the UCSF campus sites are located on or immediately adjacent to a known active or potentially active fault. Parnassus Heights, the closest campus site to an active fault is approximately four miles east of the San Andreas fault.

Ground Shaking

Strong ground shaking from a major earthquake could affect San Francisco during the next 30 years. Earthquakes on the active faults (listed in Table 4.5-1) are expected to produce a range of ground-shaking intensities. Ground shaking may affect areas hundreds of miles distant from an earthquake's epicenter. Historic earthquakes have caused strong ground shaking and damage in the San Francisco Bay Area, the most recent being the M 7.1 Loma Prieta earthquake. The epicenter was approximately 50 miles southeast of San Francisco, but this earthquake nevertheless caused strong ground shaking for about 20 seconds and resulted in varying degrees of structural damage throughout the Bay Area.

The 1906 San Francisco earthquake, with a Richter magnitude of 8.25 and an estimated moment magnitude of 7.9, produced strong (MM-VIII) to violent (MM-IX) shaking intensities (ABAG, 2003b). The 1989 Loma Prieta earthquake, with a Richter magnitude of 7.1 and an estimated moment magnitude of 6.9, produced very strong (MM-VIII) shaking intensities (ABAG, 2003b).

Liquefaction

Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion as a result of severe shaking. The rapid loss of soil shear strength during strong earthquake shaking results in a temporary fluid-like behavior of the soil. Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation, and loss of bearing strength. A *lateral spread* is a horizontal displacement of surficial blocks of sediments resulting from liquefaction in a subsurface layer that occurs on slopes ranging between 0.3% and 3% and commonly displaces the surface by several meters to tens of meters. *Flow failures*, occurring on slopes greater than 3% are primarily liquefied soil or blocks of intact material riding on a liquefied subsurface zone. *Ground oscillation* occurs on gentle slopes when there is liquefaction at depth and no lateral displacement. Soil units that are not liquefied may pull apart from each other and oscillate on the liquefied zone. The *loss of bearing strength* can occur when the underlying soil loses strength and liquefies. Liquefaction and associated failures can damage foundations, disrupt utility service, and cause damage to roadways and buildings with shallow foundations. Structures can settle, tip, or even become buoyant and "float" upwards.

Liquefaction can occur in areas characterized by water-saturated, cohesionless, granular materials at depths less than 50 feet. The depth to groundwater influences the potential for liquefaction along the margin of San Francisco Bay, in that sediments need to be saturated to have a potential for liquefaction (Helley and LaJoie, 1979). Hazard maps compiled by ABAG depict liquefaction hazards for areas throughout the Bay Area (ABAG, 2003b). According to these maps based on California Geologic Survey data, the Mission Bay and Mission Center campus sites are in an area with a high potential to experience liquefaction. The Parnassus Heights and Mount Zion campus sites are not underlain by liquefiable sediments and are not located within the Seismic Hazard Zones for potential liquefaction.

Earthquake-Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the rapid compaction and settling of subsurface materials (particularly loose, noncompacted, and variable sandy sediments) due to the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Areas are susceptible to differential settlement if underlain by compressible sediments, such as poorly engineered artificial fill or Bay Mud. Given the geologic setting of the Mission Bay campus site and to some extent the Mission Center campus site, these areas could be subjected to earthquake-induced settlement. Due to the shallow depth of bedrock and coarse nature of sediments, The Parnassus Heights and Mount Zion campus sites are unlikely to experience as great of earthquake induced settlement.

Earthquake-Induced Landslides

A major earthquake could cause movement of active slides or could trigger new slides in the same general areas of previous slides at the Parnassus Heights campus site. Due to the gently sloping to relatively flat topography, earthquake-induced landslides would not be a hazard at the Mission Bay, Mount Zion, or Mission Center campus sites.

4.5.2 Regulatory Considerations

4.5.2.1 Federal

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through

post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the proposed project would be required to adhere.

4.5.2.2 State

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2013 CBC is based on the 2012 International Building Code (IBC) published by the International Code Conference. In addition, the CBC contains necessary California amendments, which are based on reference standards obtained from various technical committees and organizations such as the American Society of Civil Engineers (ASCE), the American Institute of Steel Construction (AISC), and the American Concrete Institute (ACI). ASCE Minimum Design Standards 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project as described in Chapter 16 of the CBC. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 16, Section 1613 provides earthquake loading specifications for every structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, which shall be designed and constructed to resist the effects of earthquake motions in accordance with ASCE 7-05. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1805), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). Chapter 18 also describes analysis of expansive soils and the

determination of the depth to groundwater table. For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. The CGS has completed seismic hazard mapping for portions of California most susceptible to liquefaction, ground shaking, and landslides, including San Francisco.

Office of Statewide Health Planning and Development

UCSF's hospitals fall under the jurisdiction of the *Alfred E. Alquist Hospital Facilities Seismic Safety Act (Alquist Seismic Safety Act*) and Senate Bill 1953 (SB 1953), an amendment of the *Alquist Seismic Safety Act*, passed in 1994. The *Alquist Seismic Safety Act* and subsequent bill require all hospital facilities to comply with seismic safety building standards as defined by the Office of Statewide Health Planning and Development (OSHPD).

OSHPD is responsible for carrying out the provisions of SB 1953. A department of the California Health and Human Services Agency, OSHPD's primary goals include assessing California's healthcare infrastructure, managing the healthcare workforce, providing healthcare outcomes information to the public, insuring healthcare facilities development loans, and running the Hospital Seismic Safety Program, which enforces building seismic safety. The Hospital Building Safety Board further advises the director of the OSHPD on the administration of SB 1953 and acts as a board of appeals for hospital seismic safety issues.

SB 1953 was adopted in part so that, after a major earthquake or disaster, hospital facilities can continue to provide care to their current occupants as well as any new patients that might arrive after the event. During and after the 1994 Northridge earthquake, hospitals that were compliant with SB 1953 sustained minimal structural damage and continued to function. Hospitals that were not compliant sustained major damage and had to be abandoned (OSHPD, 2001).

All of UCSF's hospital buildings must meet certain OSHPD standards. If a building is to remain classified as an acute-care hospital facility[22] and thus be compliant with SB 1953, the owner of the building must do the following:

- Complete seismic evaluations with in accordance with the Seismic Evaluation Procedures as specified in SB 1953
- Prepare a comprehensive plan and schedule for how each building will become compliant with SB 1953, within three years of the evaluation
- Submit the report and a compliance plan to OSHPD for review and approval (California State Senate, 1994).

In the process of compliance, OSHPD and a hospital building owner evaluate both nonstructural components (communications, medical gas, etc.) and structural components (actual building structure) of acute-care hospital facilities that might sustain damage during a seismic event. Nonstructural components are put into a Nonstructural Performance Category (NPC), and structural components are put into a Structural Performance Category (SPC). Thus, each acute-care facility is assigned a NPC rating and an SPC rating. The hospital building owner must first submit a hospital evaluation report to OSHPD indicating preliminary SPC and NPC ratings that the owner believes represent the seismic safety of each building.

OSHPD then inputs the ratings into its database for review. SPC and NPC ratings are separately evaluated. In the SPC/NPC evaluation process, OSHPD and affiliated engineers examine structural drawings and submitted reports of any necessary hospital. These evaluations may include an onsite visit by the area compliance officer and/or the district structural engineer. After the evaluation process, OSHPD either confirms or changes the rating. The hospital then receives guidance from OSHPD on how upgrades can continue.

SPC and NPC ratings are defined as follows:

- **Structural Ratings**

  ***SPC-0*:** No rating was reported to OSHPD.

  ***SPC-1*:** These buildings have a high risk of collapse in an earthquake, and are a significant safety hazard to the public. These buildings had to be retrofitted, replaced, or removed from acute care classification by January 1, 2008.

  ***SPC-2*:** These buildings are in compliance with pre-1973 California Building Code, but are not in compliance with the Alquist Act. These buildings do not pose a significant safety hazard, but might not be functional after a strong earthquake. These buildings must be compliant with the Alquist Act by January 1, 2030 or removed from acute care classification.

[22] An acute-care hospital provides emergency services and general medical and surgical treatment for acute disorders rather than long-term residential care for chronic illness.

***SPC-3*:** These buildings are compliant with the Alquist Act. These buildings might sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

***SPC-4*:** These buildings are compliant with the Alquist Act. These buildings may sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

***SPC-5*:** These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings are reasonably capable of providing care after an event, and they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

- **Nonstructural Ratings**

  ***NPC-0*:** No rating was reported to OSHPD.

  ***NPC-1*:** Basic systems used in life safety and care are not properly anchored, and will not survive an earthquake event. Communications, emergency power, medical gas, and fire alarm systems must be anchored by January 1, 2002.

  ***NPC-2*:** Communications systems, emergency power supplies, bulk medical gas systems, fire alarm systems, and emergency lighting and exit signs are properly anchored.

  ***NPC-3*:** Basic systems used in life safety and care are properly anchored in critical areas of the hospital. If there is not significant structural damage, basic emergency medical care should be able to continue.

  ***NPC-4*:** All architectural, mechanical, electrical systems, components and equipment, and hospital equipment are properly anchored. If there is not significant structural damage and problems with water and sewer systems, basic emergency medical care should be able to continue.

  ***NPC-5*:** All basic systems used in life safety and care are properly anchored. In addition, the building has water and wastewater holding tanks (integrated into the plumbing system) and an on-site fuel supply that will last through 72 hours of acute care operations. Radiological service can also continue.

In general, low scores mean hospital building systems are not prepared for a disaster, and high scores mean hospital building systems are prepared. Both of these scores are considered when the building is determined to be in compliance with SB 1953. If the building is not in compliance with SB 1953 based on these scores, seismic retrofit regulations (Division III-R) are applied to the building to help in its retrofit. Replacing older hospitals with modern hospitals is intended to increase the score of UCSF's medical facilities.

OSHPD has established a timeframe that hospital building owners can use to schedule upgrades on their facilities. If this timeframe is followed, all buildings can be brought into compliance with SB 1953 by the deadline of January 1, 2030. A schematic of this timeframe is found in **Table 4.5-3**.

TABLE 4.5-3
TIMEFRAME FOR COMPLIANCE WITH SB 1953

Timeframes	Structural/Nonstructural Performance Category
January 1, 2002	SPC-1 / NPC-2 or greater
January 1, 2020	SPC-2 / NPC-3 or greater
January 1, 2030 deadline (this is considered full compliance)	SPC-3 / NPC-5

SOURCE: OSHPD (2013)

University of California Policy on Seismic Safety

The University of California's *Seismic Safety Policy* originally developed in 1975 and last updated August 26, 2011[23] requires that all buildings and facilities where University operations and activities occur be acquired, built, maintained, and rehabilitated to an acceptable level of earthquake safety. The purpose of this policy is to incorporate current earthquake engineering practices to provide an acceptable level of earthquake safety for students, employees, and the public who occupy University buildings and other facilities, at all locations of University operations and activities to the maximum extent feasible.

This policy requires the University to lease, license, acquire, build, maintain, repair and rehabilitate buildings and other facilities to provide an acceptable level of earthquake safety for students, employees, and the public who occupy those buildings and other facilities, to the maximum extent feasible using present earthquake engineering practices and University resources, at all locations where University operations and activities occur within the United States. Feasibility shall be determined by weighing practicality and the cost of protective measures against severity and probability of injury resulting from seismic occurrences.

This policy thus addresses the following topics:

A. Survey of Existing Buildings and Other Facilities;
B. Interim Use Plans;
C. Program for Abatement of Seismic Hazards of Existing Buildings and Other Facilities;
D. Seismic Rehabilitation Standards;
E. Post Earthquake Response;
F. Standards for New Construction and Renovation;
G. Independent Seismic Peer Review;
H. Special Considerations; and
I. Standards for Lease, License, Acquisition by Purchase or other Title Transfer.

[23] This policy is periodically updated and the most recent version can be found at http://ucop.edu/real-estate-services/resources/seismic-safety-policy/index.html.

4.5.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a.i) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

a.ii) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

a.iii) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

a.iv) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) (California Building Code), creating substantial risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

f) Exceed the LRDP EIR standard of significance by exposing people to structural hazards in an existing building rated Level V (Poor), or Level VI (Very Poor), under the University's seismic performance rating system, or substantial nonstructural hazards?

4.5.4 Analysis Methodology

This analysis evaluates the potential effects related to geology, soils, and seismicity from implementation of the 2014 LRDP. Construction-related effects that could potentially occur during construction activities, would generally be limited to the potential for erosion or causing slope instability. Geologic conditions vary across the UCSF campus sites and therefore all proposed construction must be able to overcome site specific hazards in order to reduce potential impacts. Overall, compliance with regulatory requirements (primarily the California Building Code) and the UC *Seismic Safety Policy* for these activities would ensure that impacts would be less than significant.

4.5.5 References

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4.6 Greenhouse Gas Emissions

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Greenhouse Gas (GHG) Emissions impacts. 2014 LRDP GHG Emissions effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* GHG Emissions effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.6.1 Regional Setting

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the earth, similar to a greenhouse. The accumulation of GHGs has been implicated as a driving force for global climate change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and anthropogenic activities (i.e., activities relating to, or resulting from the influence of, human beings) that alter the composition of the global atmosphere.

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal (IPCC, 2007), with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries.

Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Most GHGs occur naturally and are necessary for keeping the earth's surface inhabitable.[24] However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar

[24] www.ipcc.ch/report/ar5/

radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

4.6.1.1 Sources of Greenhouse Gas Emissions

Individual projects contribute to the cumulative effects of climate change by emitting GHGs during demolition, construction, and operational phases. The primary GHGs associated with land use development projects are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Although the presence of the primary GHGs in the atmosphere is naturally occurring, CO_2, CH_4, and N_2O are largely emitted from human activities, accelerating the rate at which these compounds accumulate in the earth's atmosphere.

CO_2 is the "reference gas" for GHG emissions, meaning that emissions of total GHGs are typically reported in "carbon dioxide equivalent" (CO_2e). Emissions of CO_2 are largely byproducts of fossil fuel combustion, whereas methane results from offgassing associated with agricultural practices and landfills. Other GHGs, with much greater heat-absorption potential than CO_2, include hydrofluorocarbons (HFCs), perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

There is international scientific consensus that human-caused increases in GHGs have contributed, and will continue to contribute, to global warming, although there is uncertainty concerning the magnitude and rate of the warming. Potential global warming impacts in California may include a decrease in snowpack, sea level rise, more extreme heat days per year, more high ozone days, increased frequency and intensity of wildfires, and more drought years (CNRA, 2009). Secondary effects may include impacts on agriculture, water resources, changes in disease vectors, and changes in habitat and biodiversity.

The California Air Resources Board (CARB) estimated that in 2011 California produced about 448 million gross metric tons (about 494 million U.S. tons) of CO_2e. The CARB found that transportation is the source of 38% of the state's GHG emissions, followed by industrial sources at 21% and electricity generation (both in-state and out-of-state) at 19%. Commercial and residential fuel use (primarily for heating) accounted for about 10% of GHG emissions (CARB, 2013).

In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) and the industrial/ commercial sector were the two largest sources of GHG emissions, each accounting for about 36% of the Bay Area's 95.8 million metric tons of CO_2e (105.4 million U.S. tons) emissions in 2007. Industrial and commercial electricity and fossil fuel consumption (including office and retail) were the second largest contributors of GHG emissions with about 34% of total emissions. Electricity generation accounts for approximately 16% of the Bay Area's GHG emissions, followed by residential fuel usage (e.g., home water heaters, furnaces) at 7%, off-road equipment at 3%, and agriculture at 12%. Among industrial sources, oil refining currently accounts for more than 40% of GHG emissions, or approximately 15% of the total Bay Area GHG emissions (BAAQMD, 2010).

4.6.1.2 Effects of Human Activity on GHG Emissions

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO_2 concentrations were found to have increased by nearly 30 percent above pre-industrial (c. 1860) concentrations.

There is international scientific consensus that human-caused increases in GHGs have contributed and will continue to contribute to global warming. Global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include the displacement of thousands of coastal businesses and residences, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity. As CARB's *Climate Change Scoping Plan* noted, the legislature in enacting Assembly Bill (AB) 32 found that global warming would cause detrimental effects to some of the state's largest industries, including agriculture, winemaking, tourism, skiing, commercial and recreational fishing, forestry, and the adequacy of electrical power generation. The *Climate Change Scoping Plan* states as follows (CARB, 2011): "The impacts of global warming are already being felt in California. The Sierra snowpack, an important source of water supply for the state, has shrunk 10 percent in the last 100 years. It is expected to continue to decrease by as much as 25 percent by 2050.

4.6.1.3 Impacts of Climate Change

Ecosystem and Biodiversity Impacts

Climate change is expected to have effects on diverse types of ecosystems, from alpine to deep-sea habitat (U.S. EPA, 2008a). As temperatures and precipitation change, seasonal shifts in vegetation would occur; this could affect the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. The IPCC states that "20 percent to 30 percent of species assessed may be at risk of extinction from climate change impacts within this century if global mean temperatures exceed 3.6 to 5.4°F relative to pre-industrial levels" (IPCC, 2007). Shifts in existing biomes could also make ecosystems vulnerable to encroachment by invasive species. Wildfires, which are an important control mechanism in many ecosystems, may become more severe and more frequent, making it difficult for native plant species to repeatedly re-germinate. In general terms, climate change is expected to put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.

Human Health Impacts

Climate change may increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects such as malaria, dengue fever, yellow fever, and encephalitis (U.S. EPA, 2008b). Cholera, which is associated with algal blooms, could also increase. While these health impacts would largely affect tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere would be expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems,

such as asthma. Extreme heat events would also be expected to occur with more frequency and could adversely affect sensitive receptors. Finally, the water supply impacts and seasonal temperature variations expected as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable.

4.6.2 Regulatory Considerations

4.6.2.1 Federal Regulations

Supreme Court Ruling on California Clean Air Act Waiver

The United States Environmental Protection Agency (U.S. EPA) is the federal agency responsible for implementing the Clean Air Act (CAA). The U.S. Supreme Court ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that the U.S. EPA has the authority to regulate emissions of GHGs. However, there are no federal regulations or policies regarding GHG emissions applicable to the proposed 2014 LRDP. (See discussion of Assembly Bill [AB] 1493 in Section 4.9.2.2, State Regulations, below, for more information on the California Clean Air Act [CCAA] waiver.)

United States Environmental Protection Agency Actions

In response to the issue of climate change, the U.S. EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions. The U.S. EPA and the National Highway Traffic Safety Administration have taken coordinated steps to enable the production of a new generation of clean vehicles, through reduced GHG emissions and improved fuel use from on-road vehicles and engines.

Final Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act

On December 9, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA, which states that the U.S. EPA Administrator should regulate and develop standards for "emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The final rule was effective January 14, 2010. The rule addresses two distinct findings: Endangerment Finding and Cause or Contribute Finding.

Under the Endangerment Finding, the Administrator found that the current and projected concentrations of the six key GHGs (i.e., CO_2, CH_4, N_2O, HFCs, perflurorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations. Under the Cause or Contribute Finding, the Administrator found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution which threatens public health and welfare.

4.6.2.2 State Regulations

The CARB is the state agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. With the passage of AB 32, the CARB was also given broad responsibility for promulgating regulations designed to achieve the general goals of AB 32. (For a discussion of AB 32, see "Assembly Bill 32 and the California Climate Change Scoping Plan" below.)

Various statewide and local initiatives have been introduced to reduce the state's contribution to GHG emissions. However, because every nation emits GHGs and thus makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can effectively slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed AB 1493, which required that the CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, the CARB approved amendments to the California Code of Regulations (CCR) in 2004, adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1), require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight [GVW] rating of less than 10,000 pounds and which is designed primarily for the transportation of persons), beginning with model year 2009. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for model year 2016 are approximately 37% lower than the limits for the first year of the regulations, model year 2009. For light-duty trucks with an LVW of 3,751 pounds to a GVW of 8,500 pounds, as well as for medium-duty passenger vehicles, GHG emissions will be reduced approximately 24% between 2009 and 2016.

Because the Pavley standards (named for the bill's author, state Senator Fran Pavley) would impose stricter standards than those under the federal CAA, California applied to the U.S. EPA for a waiver under the CAA; this waiver was initially denied by the Bush administration in 2008, but as noted above, in 2009 the U.S. EPA granted the waiver. California has agreed to cooperate with the federal GHG and Corporate Average Fuel Economy standards under development so that there will be a single national standard.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, then-Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by

which statewide GHGs emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80% below 1990 levels (CARB, 2008).

Assembly Bill 32 and the California Climate Change Scoping Plan

In 2006, the California legislature passed AB 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq.), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG emissions target. In order to meet the target, California must reduce its GHG emissions by 30% below projected 2020 business –as-usual emissions levels, or about 15% from 2008 levels (CARB, 2010). The Scoping Plan estimates a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from state measures that address the transportation, energy, agriculture, forestry, and high global warming potential sectors (see **Table 4.6-1**). CARB has identified an implementation timeline for the GHG reduction strategies in the Scoping Plan (CARB, 2008). Some measures may require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Additionally, some emissions reductions strategies may require their own environmental review under CEQA or the National Environmental Policy Act (NEPA).

The AB 32 Scoping Plan anticipates that local government actions will also result in reduced GHG emissions. CARB recommends a GHG reduction target of 15% below "current" levels (2008) for local jurisdictions and notes that success in reducing emissions relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.

The Scoping Plan relies on the requirements of Senate Bill (SB) 375 (discussed below) to implement the carbon emission reductions anticipated from land use decisions. SB 375 was enacted to align local land use and transportation planning to further achieve the state's GHG reduction goals. SB 375 requires regional transportation plans (RTPs), developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" that would achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects, such as transit-oriented development. SB 375 would be implemented over the next several years. The Metropolitan Transportation Commission (MTC) is responsible for developing RTPs for the Bay Area. MTC's 2013 RTP will be its first plan subject to SB 375.

Executive Order S-1-07

Executive Order S-1-07, signed by then-Governor Schwarzenegger in 2007, proclaimed that the transportation sector is the main source of GHG emissions in California, at over 40% of statewide

TABLE 4.6-1
GREENHOUSE GAS REDUCTIONS FROM AB 32 SCOPING PLAN SECTORS

GHG Reduction Measures By Sector		GHG Reductions (in million metric tons of CO_2e)
Transportation		62.3
Electricity and Natural Gas		49.7
Industry		1.4
Landfill Methane Control Measure (Discrete Early Action)		1.0
Forestry		5.0
High Global Warming Potential GHGs		20.2
Additional Reductions Needed to Achieve the GHG Cap		34.4
	Total	**174.0**
Other Recommended Measures		
Government Operations		1.0 - 2.0
Agriculture- Methane Capture at Large Dairies		1.0
Methane Capture at Large Dairies		1.0
Additional GHG Reduction Measures		
Water		4.8
Green Buildings		26.0
High Recycling/ Zero Waste • Commercial Recycling • Composting • Anaerobic Digestion • Extended Producer Responsibility • Environmentally Preferable Purchasing		9.0
	Total	**42.8 - 43.8**

NOTES:
CO_2e = carbon dioxide equivalent

SOURCE: California Air Resources Board, AB 32 Scoping Plan, available at http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf, accessed February 19, 2014.

emissions. The order established a goal of reducing the carbon intensity of transportation fuels sold in California by a minimum of 10% by 2020. It also directed CARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete, early-action measure after meeting the mandates in AB 32. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Senate Bills 1078 and 107 and Executive Orders S-14-08, S-21-09 and S-13-08

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, then-Governor Schwarzenegger signed Executive Order (EO) S-14-08, which expands the state's Renewable Portfolio Standard to 33% renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing EO S-21-09, which directs CARB under its AB 32

authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33% renewable energy by 2020.

Governor Arnold Schwarzenegger signed EO S-13-08 on November 14, 2008. The order called on state agencies to develop California's first strategy to identify and prepare for expected climate impacts. As a result the *2009 California Climate Adaptation Strategy (CAS)* report was developed to summarize the best known science on climate change impacts in the State to assess vulnerability and outline possible solutions that can be implemented within and across State agencies to promote resiliency. The State is also developing an Adaptation Planning Guide (APG) to provide a decision-making framework intended for use by local and regional stakeholders to aid in the interpretation of climate science and to develop a systematic rationale for reducing risks caused or exacerbated by climate change. The State's third major assessment on climate change explores local and statewide vulnerabilities to climate change, highlighting opportunities for taking concrete actions to reduce climate-change impacts.

Senate Bill 1368

SB 1368 (September 2006) is a companion bill of AB 32 that required the California Public Utilities Commission (PUC) to establish a greenhouse gas emission performance standard for baseload generation from investor-owned utilities. The California Energy Commission (CEC) was required to establish a similar standard for local publicly owned utilities. These regulations (20 CCR 2900) established in 2007 prohibit utilities from entering into long-term contracts with any baseload power plant that would emit more than the equivalent GHG performance of a typical combined cycle natural-gas-fired plant. The legislation ensures that all new contracts for electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and the CEC.

Senate Bill 97

SB 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue requiring analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, no later than July 1, 2009. The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On December 30, 2009, the Natural Resources Agency adopted the state CEQA Guidelines amendments, as required by SB 97. These state CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The amendments were reviewed by the Office of Administrative Law and became effective March 18, 2010.

Senate Bill 375

In addition to policy directly guided by AB 32, the legislature in October 2008 passed SB 375, which provides for regional coordination in land use and transportation planning and funding to help meet the AB 32 GHG reduction goals. SB 375 aligns regional transportation planning efforts, regional GHG emissions reduction targets, and land use and housing allocations. SB 375

requires RTPs developed by the state's 18 MPOs to incorporate a "sustainable communities strategy" (SCS) that will achieve GHG emission reduction targets set by the CARB. In the Bay Area, the MTC is the MPO. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development.

The Association of Bay Area Governments (ABAG), the MTC, BAAQMD, and San Francisco Bay Conservation and Development Commission (BCDC) have developed the "Plan Bay Area" as the region's long-range plan for sustainable land use, transportation, and housing pursuant to SB 375. Plan Bay Area is intended to respond to requirements of SB 375, which requires the regional transportation plan to contain a SCS that integrates land use planning and transportation planning and identifies where the region's population will be housed. Plan Bay Area was adopted on July 18, 2013 and is the first published plan subject to SB 375.

CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every 8 years, but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or alternative planning strategy (APS) for consistency with its assigned targets. If MPOs do not meet the GHG emissions reduction targets, transportation projects would not be eligible for funding.

This bill also extends the minimum time period for the Regional Housing Needs Allocation cycle from 5 years to 8 years for local governments located within an MPO that meets certain requirements. City and county land use policies (including general plans) are not required to be consistent with the RTP (and associated SCS or APS). However, new provisions of CEQA and the CEQA Guidelines create incentives for qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

4.6.2.3 Local Regulations

Bay Area Air Quality Management District Climate Protection Program

The BAAQMD is the primary agency responsible for air quality regulation in the 9-county San Francisco Bay Area Air Basin (SFBAAB). The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of GHGs and in reducing air pollutants that affect the health of residents. The BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders. In June 2010, the BAAQMD adopted revised CEQA significance thresholds for GHG emissions. These recently adopted GHG significance thresholds are discussed in detail in Section 5.9.4.2, Approach to Analysis, below.

BAAQMD CEQA Guidelines and Thresholds

In June 2010, the BAAQMD issued its CEQA Air Quality Guidelines, replacing former guidelines adopted in December 1999, and adopted new thresholds of significance to assist lead agencies in determining when potential air quality impacts would be considered significant under CEQA. Updated in May 2011, these guidelines include recommendations for analytical methodologies to determine air quality impacts and identify mitigation measures that can be used to avoid or reduce air quality impacts, including for GHGs (BAAQMD, 2011).

The *BAAQMD CEQA Guidelines* is an advisory document and local jurisdictions are not required to utilize the methodology outlined therein. The document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. BAAQMD adopted new thresholds of significance (BAAQMD thresholds) on June 2, 2010, to assist lead agencies in determining when potential air quality impacts would be considered significant under CEQA. BAAQMD also released new *CEQA Guidelines* in May 2011, which advise lead agencies on how to evaluate potential air quality impacts with the adopted new thresholds of significance.

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted its 2010 thresholds of significance. However, in August 2013 the First District Court of Appeal issued a full reversal of the Superior Court ruling, upholding the 2010 thresholds of significance. In November 2013, the California Supreme Court granted limited review of the Court of Appeal's decision, and the matter is currently pending there. Nonetheless, the 2011 thresholds are based on substantial evidence provided by BAAQMD (BAAQMD, 2009), and have been accepted by the Regents of the University of California for use in this EIR.

The threshold for stationary sources is 10,000 metric tons of CO_2e per year (i.e., emissions above this level may be considered significant). For non-stationary sources, four separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO_2e per year (i.e., emissions above this level may be considered significant); or
- 4.6 metric tons of CO_2e per service population (SP) per year (i.e., emissions above this level may be considered significant). "Service population" is the sum of residents plus employees expected for a development project.; or
- For General Plans, 6.6 metric tons of CO_2e per service population (SP) per year (i.e., emissions above this level may be considered significant). This threshold should only be applied to general plans. Other plans, e.g. specific plans, congestion management plans, etc., should use the project-level threshold of 4.6 CO_2e/SP/year.

For quantifying a project's GHG emissions, BAAQMD recommends that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. Direct emissions refer to emissions produced from onsite combustion of energy, such as natural gas used in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced offsite from energy production and water conveyance due to a project's energy use and water consumption. BAAQMD has provided guidance on detailed methods for modeling GHG emissions from proposed projects (BAAQMD, 2012). The above stated thresholds apply only to operational emissions. To date, the BAAQMD has not adopted numeric thresholds for the assessment of construction-related emissions. Nonetheless, construction-related GHG emissions resulting from 2014 LRDP proposals are estimated and disclosed in this EIR.

University of California

Policies and Plans of the UC Regents and University of California Office of the President (UCOP)

In 2007, the Chancellor of UCSF signed the *American College and University President's Climate Commitment* (ACUPCC) to complete an emissions inventory, set target dates and interim milestones for becoming climate-neutral,[25] take steps to reduce GHG emissions, and prepare public progress reports (American College, 2007). As an intermediate target, UCOP established the goals of reducing GHG emissions to 2000 levels by 2014; 1990 levels by 2020; and achieving climate neutrality as soon as possible after reaching the 2014 and 2020 reduction targets. More recently, UCSF committed to achieving climate neutrality by the year 2047.[26] These goals pertain to Scope 1 and Scope 2 emissions of the six Kyoto greenhouse gases originating from sources specified in the ACUPCC,[27] as well as Scope 3 emissions from business airline travel and commuting by UCSF staff and students. The Regents' policy specifies that these goals will be pursued while maintaining the primary research and education mission of the University.

As outlined in UCSF's *Climate Action Plan* of December 2009, the UC President adopted the *Policy on Sustainable Practices* in 2007, which committed UC to implementing actions intended to minimize the University's impact on the environment and reduce the University's dependence on non-renewable energy. The policy was most recently revised in November 2013, and now covers the areas of green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, and sustainable water systems. The UC *Policy on Sustainable Practices* will continue to be updated over time.[28]

[25] Climate neutrality for UCSF is defined as the University having a net-zero impact on the Earth's climate; it will be achieved by minimizing GHG emissions as much as possible and using other measures to mitigate the remaining GHG emissions (*UCSF Climate Action Plan*, December 2009).

[26] This is the current commitment made under the ACUPCC and the goal that is referenced in UCSF's Annual Progress Report to the UC Regents.

[27] The six greenhouse gases identified in the Kyoto Protocol/ACUPCC are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons.

[28] The current version of the Policy is available at: http://sustainability.universityofcalifornia.edu/policy.html

In addition the *Policy on Sustainable Practices* sets the following requirements and goals relevant to GHG emissions reduction:

- Requires each campus to develop a long-term strategy for voluntarily meeting the requirements of California's Global Warming Solutions Act of 2006 (AB 32);
- Instructs campuses to aim for climate neutrality as soon as possible after achieving 2014 and 2020 reduction targets;
- Requires 20 percent better energy performance than Title 24 (policy maintained as Title 24 is revised) for new construction and renovations, and strives to achieve 30%;
- Requires new laboratory buildings to meet Labs21 Environmental Performance Criteria (EPC);
- All new construction and major renovations projects must meet a minimum standard of LEED-NC Silver and strive for LEED NC Gold when possible;
- The University will use energy efficiency retrofits to reduce system-wide energy consumption by 10% or more, from 2000 baseline, by 2014;
- Renovation projects greater than $5 million that do not quality for LEED-NC must be certified under LEED-CI;
- Renovation projects that require 100% equipment replacement, and 50% non-shell areas, must achieve LEED Silver at a minimum and strive for Gold;
- Each campus will submit one pilot LEED-EBOM building for certification by July 1, 2014;
- University system will provide up to 10 MW capacity of on-site renewable energy by 2014 (approximately 1 MW per UC campus);
- Develop goals for reducing transportation related GHG's and report on progress annually;
- Expand Transportation Demand Management (TDM) programs and projects;
- Divert 50% solid waste by 2008, 75% by 2012, and achieve zero waste by 2020 (defined as diverting 95% or more of municipal solid waste);
- Develop a Water Action Plan and reduce water consumption by 20% by 2020;
- All new buildings achieve at least two points in LEED NC Water Efficiency category;
- Maximize procurement of environmentally preferable products and services; and
- Purchase 20% sustainable food products by 2020.

The UC President has set a goal for UC to become carbon neutral by 2025 and purchase only clean energy (UCOP, 2013). This goal has not been formally adopted by the Regents, but UC is actively working on the President's initiative to be the first major research university to achieve carbon neutrality, involving four efforts:

- Create a shared service center, which both owns electricity-generation resources and purchases long-term forward contracts, and which will manage the supply of wholesale electricity to campuses eligible for direct access.

- Continue energy-efficient projects and expand them to include small- to medium-scale renewable energy sources at all campus sites, and seek additional funding sources for these projects.

- Effectively manage the purchase of natural gas to mitigate risk tolerance to price changes, develop renewable natural gas (biogas) and purchase biogas contracts through outside producers.

- Manage allowances and offsets; comply with California's cap-and-trade program and other environmental attribute programs; and generate new funds to support projects resulting in GHG emission reductions.

University of California San Francisco

UCSF has a robust sustainability program covering sustainability activities across the entire campus and medical center. Through its Office of Sustainability, UCSF has created work groups addressing sustainability in the following areas, most of which have direct implications for GHG emissions: Carbon Neutrality, Zero Waste, Water Conservation, Sustainable Food, Toxics Reduction, Green Procurement, Green Buildings, and Sustainable Operations.

UCSF's Sustainability Governance consists of the Academic Senate Sustainability Committee and the Chancellor's Advisory Committee on Sustainability (CACS). The Academic Senate Sustainability Committee identifies faculty recommendations on improving sustainability at UCSF. The charge of the CACS is to:

- Annually examine UCSF's effect on the environment from a comprehensive perspective;
- Evaluate existing UCSF policies, procedures, and programs that affect the environment;
- Serve as a coordinating body for groups or individuals concerned with sustainability issues;
- Advise selected work groups in the development and implementation of UCSF's sustainability initiatives and goals; and
- Support reduction of greenhouse gas emissions to 1990 levels by 2020.

UCSF includes a Sustainability Dashboard on its Living Green web site that includes performance metrics for multiple issue areas including GHG emissions. UCSF also publishes an annual sustainability report on its web site.[29]

UCSF Climate Action Plan (2009)

As part of implementing the UC *Sustainable Practices Policy*, UCSF has developed a Climate Action Plan, a long-term strategy for voluntarily meeting the State of California's goal for reducing GHG emissions to 1990 levels by 2020, pursuant to AB 32. The Climate Action Plan also addresses the UCOP goals of reducing GHG emissions to 2000 levels by 2014; and attaining

[29] Annual Sustainability Reports are available on the UCSF LivingGreen web site: http://sustainability.ucsf.edu/

climate neutrality[30] as soon as possible after achieving the 2014 and 2020 reduction targets. GHG emissions inventories are included for the years 1990, 2000, 2008, and 2011. The Climate Action Plan forecasts future emissions and assesses the impact of UCSF sustainability policies and programs on future GHG emissions and the prospects for achieving GHG reduction goals. The Climate Action Plan concludes that UCSF is expected to meet the goal of reducing GHG emissions to 2000 levels by 2014, but that the goal of reducing 1990 levels by 2020 would not likely be met without the use of additional reduction measures or carbon offsets.

UC Strategic Energy Plan

The UC Strategic Energy Plan (SEP) was prepared in 2008 for all UC campuses, to fulfill a goal of UC's Policy on Sustainable Practices to implement energy efficiency projects in existing buildings. The UCSF portion of the SEP analyzes energy use and GHG trends, and identifies potential energy efficiency retrofit projects at all buildings over 50,000 square feet at UCSF (primarily lighting, HVAC, commissioning and central plant measures). Energy savings, GHG emissions savings, and financial returns are estimated for hundreds of projects, which are grouped into Tier 1 (high priority) and Tier 2 (longer term planning) projects based on their energy savings and financial payback. The SEP project list is intended to be regularly updated by each campus to evaluate the feasibility of additional energy-saving measures.

Transportation Demand Management

UCSF employs an aggressive Transportation Demand Management (TDM) program that includes an extensive shuttle system, among other alternative transportation opportunities. Based on UCSF's 2013 employee commute survey, 66 percent of the campus population commutes by means other than driving alone. In 2011, UCSF received the Gold level award for the Best Workplace for Commuters. Key features of UCSF's existing TDM program include the following:

- 60 shuttles serving 17 locations, with over 2.3 million passengers per year
- 33 vanpools that travel as far as Sacramento and operate using the Green Road Safety System, which improves fuel consumption and safety
- 62 reserved carpool stalls at various sites
- Marin Commute Club buses with about 55 daily riders who live in Marin and Sonoma Counties to the north of San Francisco
- 18 City CarShare vehicles with dedicated parking spaces, along with 1,500 UCSF members who can use these vehicles by scheduling their use on-line
- A fleet of 43 low-emitting alternative-fuel and hybrid vehicles, including cars, shuttles, golf carts, and trucks
- 18 electric-vehicle charging stations at Parnassus Heights, Mount Zion, and Mission Bay, with plans for another 20 at Mission Bay in the Owens Street Garage and 10 at other locations

[30] The Climate Action Plan defines climate neutrality as having a net zero impact on the Earth's climate, to be achieved by minimizing GHG emissions as much as possible and using carbon offsets or other measures to mitigate the remaining GHG emissions.

- Over 1,900 UCSF users of the ZimRide online carpool matching program
- 972 bicycle parking spaces with another 100 planned at Mission Bay, as well as bike racks on shuttles, a cyclist shower program that allows bicyclists to use UCSF showers at a discount, and other bicycle-related benefits
- Bay Area Bike Share station at Mission Bay (due to begin construction in late 2014), where members will have access to bicycles (and a regional network of stations) provided by the Bay Area Air Quality Management District
- More than 400 off-street motorcycle parking stalls in garages and surface parking lots
- An "emergency ride home" program to encourage use of alternative modes of transportation
- Clipper Card (public transit pass) sales at easily accessible locations, including through UCSF's website
- Close to 1,800 UCSF employees that participate in a pretax transit program, which saved UCSF employees over $700,000 on public transit commute costs in 2013

Annual GHG Inventory Reporting

UC *Sustainability Practices Policy* requires each campus to report a GHG emissions inventory to an independent reporting organization. UCSF reported calendar year 2008 Scope 1 and Scope 2 emissions[31] to the California Climate Action Registry (CCAR). UCSF currently reports its annual Scope 1 and Scope 2 GHG emissions inventory to The Climate Registry (TCR). The most recent inventory reported to TCR was for calendar year 2012. UCSF emissions inventories reported to outside agencies are verified by accredited independent auditors.

Since 2008 UCSF has also been required to report its annual Scope 1 emissions from the Parnassus Heights Central Utility Plant (PCUP) to the California Air Resources Board (CARB) under the AB 32 Reporting Rule. UCSF tracks and reports its progress towards meeting its GHG emissions goals in its Annual Sustainability Report. UCSF also reports to the UC Regents annually on its progress in meeting the goals in the UC *Sustainable Practices Policy*.[32]

4.6.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

[31] For more information on UCSF's Scope 1, Scope 2 and Scope 3 GHG emissions, see "UCSF GHG Emissions Inventory and Forecasts" later in this document.

[32] The University of California system-wide Annual Sustainability Reports are available at: http://sustainability.universityofcalifornia.edu/reports.html

4.6.4 Analysis Methodology

4.6.4.1 Approach

This analysis uses both a quantitative and a qualitative approach. The quantitative approach is used to address the first significance criterion: Would the 2014 LRDP proposals generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? The quantitative efficiency threshold proposed by BAAQMD in its 2009 document *Revised Draft Options and Justification Report for California Environmental Quality Act Thresholds of Significance* is 4.6 metric tons of CO_2e per service population annually for projects or Plans, other than a General Plan. If the 2014 LRDP activities would exceed this threshold then it would be considered to have a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact on climate change.

Because the quantifiable thresholds developed by BAAQMD in its Justification Report were formulated based on AB 32 and California Climate Change Scoping Plan reduction targets for which its set of strategies were developed to reduce GHG emissions statewide, a project cannot exceed the numeric BAAQMD efficiency threshold of 4.6 metric tons of CO_2e per service population annually without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (The state Climate Change Scoping Plan). Thus, if the 2014 LRDP proposals exceed the numeric threshold and results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the 2014 LRDP proposals may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

4.6.4.2 Methods

Potential impacts are assessed by modeling the estimated CO_2 emissions generated by the 2014 LRDP construction activities and operations, using the CalEEMod version 2013.2.2 land use emissions model, and comparing modeled emissions to the significance thresholds. Model data and additional assumptions are included in Appendix E of this EIR.

Area and indirect sources (as opposed to transportation sources) associated with the 2014 LRDP proposals would primarily result from electrical usage, water and wastewater transport (the energy used to pump water and wastewater to and from the 2014 LRDP development), and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the campus sites is generated by fuel combustion. GHG emissions from water and wastewater treatment and transport are also indirect emissions resulting from the energy required to transport water from its source and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste emissions are generated when the increased waste generated by a project are taken to a landfill to decompose. GHG emissions from electrical usage, water and wastewater conveyance, and solid waste were also estimated using CalEEMod.

4.6.4.3 Cumulative Approach

Both BAAQMD and the California Air Pollution Control Officers Association consider GHG impacts to be exclusively cumulative impacts (BAAQMD, 2011; CAPCOA, 2008); as such, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere.

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4.7 Hazards and Hazardous Materials

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Hazards and Hazardous Materials impacts. 2014 LRDP Hazards and Hazardous Materials effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Hazards and Hazardous Materials effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.7.1 Regional Setting

4.7.1.1 Introduction

Materials and waste may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode or generate vapors when mixed with water (reactivity). The term "hazardous material" is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.[33] In some cases, past industrial or commercial uses on a site can result in spills or leaks of hazardous materials and petroleum causing contamination of underlying soil and groundwater. Federal and state laws require that soils and groundwater having concentrations of contaminants such as lead, gasoline, or industrial solvents that are higher than certain acceptable levels must be handled and disposed as hazardous waste during excavation, transportation, and disposal. The California Code of Regulations (CCR), Title 22, Sections 66261.20–24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste.

Medical waste can also be considered a hazardous waste and is generated or produced as a result of diagnosis, treatment, or immunization of human beings or animals and the production or testing of biological materials. Generally, medical waste can be classified as either a biohazardous waste or a sharps waste.[34,35] Cultures, blood and blood products, tissues, and body parts are all considered medical waste. The transportation and disposal of medical waste is closely regulated under Section 118215 of the California Medical Waste Management Program.[36] In addition, operation of airborne medical transport can also pose a risk to human health and safety. The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government (see Regulatory Setting below).

33 California, Health and Safety Code, Chapter 6.95, Section 25501(o).
34 The term "biological materials" means medicinal preparations made from living organisms and their products, including but not limited to, serums, vaccines, antigens and anti-toxins.
35 The term "sharps waste" refers to any device having acute rigid corners, edges, or proturbences capable of cutting or piercing, including, but not limited to, hypodermic needles and broken glass items (such as pipettes and vials) contaminated with biohazardous waste.
36 California Medical Waste Management Act, California Health and Safety Code Sections 117600-118360.

4.7.1.2 Generation and Disposal of Hazardous Materials and Waste

Various hazardous materials are commonly transported, stored, used, and disposed of in activities such as construction, industry (both light and heavy), dry cleaning, film processing, landscaping, automotive maintenance and repair, and common residential/commercial maintenance activities. The use, transport, storage and disposal of hazardous materials is regulated by the United States Environmental Protection Agency (EPA), California EPA (Cal/EPA) including five boards, departments and offices: Air Resources Board, Department of Pesticide Regulation, Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), and State Water Resources Control Board (SWRCB). In addition, the Department of Public Health Center for Environmental Health and other local regulatory agencies closely monitor businesses and industry in the control of hazardous materials. Hazardous materials require special methods of disposal, storage, and treatment, and any unintentional release of hazardous materials requires an immediate response to protect human health and safety, and/or the environment. Improper disposal can harm the environment and people who work in the waste management industry.

Generators of hazardous waste fall into two categories: large-quantity generators (LQGs) and small-quantity generators (SQGs). An LQG is defined as a person or facility generating more than 1,000 kilograms (kg) (2,200 pounds) of hazardous waste per month. An SQG is defined as generating greater than 100 kilograms and less than 1,000 kg of hazardous waste per month. LQGs include industrial and commercial facilities, such as manufacturing companies, petroleum refining facilities, and other heavy industrial businesses.

LQGs must comply with general federal and state requirements for managing hazardous waste. LQGs need an EPA identification number that is used to monitor and track hazardous waste activities. SQGs include facilities such as service stations, automotive repair, dry cleaners, and medical offices. The regulatory requirements for SQGs are less stringent than the requirements for LQGs. However, SQGs must also obtain an EPA identification number, which must be used for traceability on all hazardous waste documentation.

Pursuant to federal law, all such generators must register with EPA for record-keeping and recording. The EPA Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs related to hazardous materials and hazardous waste. The state agencies responsible for these programs set the standards for their program while local governments implement the standards. (Cal/EPA) oversees the implementation of the program as a whole. The Unified Program is implemented at the local level by 84 government agencies certified by the Secretary of Cal/EPA. These Certified Unified Program Agencies (CUPAs) have typically been established as a function of a local environmental health or fire department.

The CUPA is the local administrative agency that coordinates the following six programs regulating hazardous materials and hazardous wastes:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)

- California Accidental Release Prevention (CalARP) Program
- Underground Storage Tank Program
- Aboveground Petroleum Storage Act (APSA) Program
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

For the City of San Francisco the local CUPA is the San Francisco Department of Public Health.

4.7.1.3 Transportation of Hazardous Materials and Waste

Transportation of hazardous materials and hazardous waste is carried out by individuals or entities that move hazardous materials and waste from one site to another by highway, rail, water, or air (see 40 CFR 260.10). This includes transporting hazardous waste from a generator's site to a facility that can recycle, treat, store, or dispose of the waste. It can also include transporting treated hazardous waste to a site for further treatment or disposal. Transportation of hazardous materials is required by law to occur in accordance with the Hazardous Waste Manifest System which is a set of forms, reports, and procedures that track hazardous waste from the time it leaves the generator facility until it reaches the waste management facility that receives it.

Transportation of hazardous materials by truck and rail is regulated by the United States Department of Transportation (USDOT). The USDOT regulations establish criteria for safe handling procedures. Federal safety standards are also included in the California Administrative Code. The California Health Services Department regulates the haulers of hazardous waste. According to the USDOT, Office of Hazardous Materials Safety's (OHMS) most recent Biennial Report on Hazardous Materials Transportation, highway transportation accounts for the largest share of incidents, deaths, and injuries associated with hazardous materials transportation. Rail accounts for the next largest portion, followed by air and water modes of transport. Highway incidents also account for the largest share of economic damage among modes of transport. While hazardous waste incidents account for a small percentage of overall highway incidents, the impact of those incidents can be more significant due to the nature of the material(s) involved. Specific programs have been developed by various responsible agencies to limit or prevent the impact to human health and the environment when hazardous materials/waste incidents occur.

In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by the DTSC. The DTSC maintains a list of active registered hazardous waste transporters throughout California. Shipments of hazardous materials and wastes include a wide variety of chemicals, such as petroleum products, medical waste, and radioactive materials. Each movement of hazardous materials/wastes implies a degree of risk, depending on the material being moved, the mode of transport, and numerous other factors. On a tonnage basis, petroleum products make up the majority—more than 80 percent—of hazardous material moved around the state.

Aside from rail and pipeline, hazardous materials transported within the San Francisco Bay Area region use many of the same freeways, arterials, and local streets as other traffic. This creates a risk of accidents and associated release of hazardous materials for other drivers and for people along these routes, as does the use of rail modes for hazardous materials shipments.

4.7.1.4 Potential Presence of Hazardous Materials in Soil and Groundwater

Hazardous materials, including but not limited to pesticides and herbicides, heavy metals, volatile organic compounds, oil and gas, may be present in soil and groundwater in areas where land uses have resulted in leaking fuel or chemical storage tanks or other releases of hazardous materials have occurred or where artificial fill has been placed. Land uses that typically involve the handling of hazardous materials include commercial or industrial operations, as well as agricultural areas where soils may contain pesticides and herbicides.

Various federal, State, and local regulatory agencies maintain lists of hazardous materials sites where soil and/or groundwater contamination is known or suspected to have occurred, typically as a result of leaking storage tanks or other spills. These facilities are readily identified through regulatory agency database searches, such as the State Water Board GeoTracker online database, the Cal/EPA DTSC Envirostor online database, and several other federal, State and local regulatory agency databases.

4.7.1.5 Naturally Occurring Asbestos

Asbestos is not a formal mineralogical term, but rather a commercial and industrial term historically applied to a group of silica-containing minerals that form long, very thin mineral fibers, which generally form in bundles, and were once widely used in commercial products.[37] Commercial-grade asbestos was highly regarded for its high tensile strength, flexibility, and resistance to heat, chemicals, and electricity. However, mounting evidence in the 20th century indicated that inhalation of asbestos fibers caused respiratory diseases that have seriously affected many workers who were working closely with asbestos. Once disturbed, microscopic fibers can become airborne and then lodged in the lungs. Exposure to asbestos has been linked to numerous serious health problems and diseases, including asbestosis, lung cancer, and mesothelioma.

Naturally occurring asbestos (NOA) includes minerals described as asbestos that are found in place in their natural state, such as in bedrock or soils. Natural occurrences of asbestos are of concern due to potential exposures to the tiny fibers that can become airborne if asbestos-bearing rocks are disturbed by natural erosion or human activities such as road building, excavations, and other ground disturbing activities. In California, concern over potential public exposure to NOA has led to guidance documents and various regulations for NOA. In 1986, asbestos was identified as a toxic air contaminant by the California Air Resources Board (ARB). In 1990, the ARB issued an

[37] United States Geological Survey, Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California, Open File Report 2011-1188, 2011.

Airborne Toxic Control Measure (ATCM), which prohibited the use of serpentine aggregate for surfacing if the asbestos content was 5 percent or more.

Government agency and general public concerns about public health resulting from exposure to asbestos led to new regulations and guidance regarding NOA:

- In July 2000, the ARB adopted amendments to the existing ATCM prohibiting the use or application of serpentine, serpentine-bearing materials and asbestos-containing ultramafic rock for covering unpaved surfaces unless it has been tested using an approved asbestos bulk test method and determined to have an asbestos content that is less than 0.25 percent. These amendments took effect on November 13, 2001.

- In July 2001, the ARB adopted a new ATCM for construction, grading, quarrying, and surface mining operations in areas with serpentine or ultramafic rocks. This ATCM became effective on November 19, 2002.

- In October 2000, the Governor's Office of Planning and Research issued a memorandum providing guidance to Lead Agencies in analyzing the impacts of naturally occurring asbestos on the environment through the California Environmental Quality Act (CEQA) review process.

- In November 2000, the California Department of Real Estate added a section to subdivision forms that included questions related to NOA on property proposed for development.

- In 2004, as part of its school-site review program, the California Department of Toxic Substances Control's School Property Evaluation and Cleanup Division released interim guidance on evaluating NOA at school sites.

Overall, 53 of the 58 California counties, including San Francisco County, contain reported asbestos occurrences and/or ultramafic rocks such as serpentinite that can contain asbestos fibers.[38] In general, NOA fibers do not pose a threat unless disturbed and/or introduced into the air as fugitive dust.

4.7.1.6 Schools

CEQA Guidelines require EIRs to assess whether a project would emit hazardous air emissions or involve the handling of extremely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school (see CEQA Sections 21151.2 and 21151.4; Appendix G of the CEQA Guidelines). Children are particularly susceptible to long-term impacts from emissions of hazardous materials from roadways near schools as well as high-volume motor vehicle travel on roadways through residential areas. There are numerous schools located throughout San Francisco and DTSC has created the School Property Evaluation and Cleanup Division that is responsible for assessing, investigating, and cleaning up proposed school sites. The Division ensures that selected properties are free of potential exposure to contamination either as a result of past land uses or current neighboring uses. Through the environmental review process, DTSC ensures protection of children, staff and the environment from the potential effects of exposure to hazardous materials.

[38] Ibid.

4.7.1.7 Emergency Services

The California Emergency Management Agency (Cal EMA) was established as part of the Governor's Office on January 1, 2009, merging the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. Cal EMA is responsible for the coordination of overall State agency response to major disasters in support of local government. The Agency is responsible for assuring the State's readiness to respond to, and recover from, all hazards—natural, man-made, and war-caused emergencies and disasters—and for assisting local governments with emergency preparedness, response, recovery, and hazard mitigation efforts (California Emergency Management Agency, 2011).

Each county has a local Office of Emergency Services (OES), which coordinates with the State during emergency situations. When local and mutual aid resources are exhausted, the State coordinates its emergency resources through its State Operations Center in Sacramento and its multiple Emergency Operations Centers (EOC) throughout the region.

In coordination with the local OES, jurisdictions house EOCs, which are command centers where emergency service providers (many from the local OES) meet and coordinate response, recovery, and resources during disasters. The following functions are performed in the EOC, as necessary:

- Receiving and disseminating warnings;
- Managing emergency operations;
- Developing emergency response and recovery policies;
- Collecting intelligence from, and disseminating information to, the various EOC representatives, and assuring coordination between the Field Operations Center locations, building managers, and departmental safety representatives throughout the regional system;
- Coordinating information with Cal EMA, the Federal Emergency Management Agency, and other appropriate outside agencies;
- Preparing intelligence/information summaries, situation reports, operation progress reports and other reports as required;
- Preparing incident action plans;
- Maintaining general and specific maps, information display boards, and other data pertaining to emergency operations;
- Continuing analysis and evaluation of all data pertaining to emergency operations; and
- Controlling and coordinating, within established policy, the operations and logistical support of resources committed to the EOC.

4.7.1.8 Wildland Fire

The California Department of Forestry and Fire Protection has identified urban areas considered at risk as a fire-threatened community as part of the Wildland Urban Interface program. With

California's extensive urban Wildland-Urban Interface situation, the list of communities extends beyond just those adjacent to Federal lands. There are 874 communities currently on the Communities at Risk List, including San Francisco.

While all of California is subject to some degree of fire hazard, there are specific features that make certain areas more hazardous. The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code 4201-4204 and Government Code 51175-89). CAL FIRE has developed a fuel ranking assessment methodology that assigns ranks (moderate, high, and very high) based on expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition (including wind speed, humidity, and temperature). In general, the susceptibility for high and very high wildfires dramatically increases in the late summer and early autumn as vegetation dries out, decreasing plant moisture content and increasing the ratio of dead fuel to living fuel (URS, 2008). Common causes of wildfires include arson and negligence. According to mapping for the City of San Francisco's Hazard Mitigation Plan, only the Parnassus Heights campus site is located in an area considered to be a high to very high potential for wildfire (URS, 2008). This determination is based on expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition and is initially based on an assigned fuel model combined with topography. Final rankings are based on the amount of fuel present (URS, 2008).

4.7.2 Regulatory Considerations

4.7.2.1 Federal

The primary federal agencies with responsibility for hazardous materials management include the EPA, U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the USDOT. Federal laws, regulations, and responsible agencies are summarized in **Table 4.7-1** and are discussed in detail in this section.

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local agency section.

Federal Aviation Administration

The Federal Aviation Administration (FAA) is the USDOT agency charged with (1) regulating air commerce to promote its safety and development; (2) achieving the efficient use of navigable airspace of the United States; (3) promoting, encouraging, and developing civil aviation; (4) developing and operating a common system of air traffic control and air navigation for both civilian and military aircraft; and (5) promoting the development of a national system of airports.

TABLE 4.7-1
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA)	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA) Hazardous and Solid Waste Act	Under RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave." Amended RCRA in 1984, affirming and extending the "cradle to grave" system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT) U.S. Postal Service (USPS)	DOT has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CRF). USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR).
Radioactive Materials[a]	Atomic Energy Act	Administered by the Nuclear Regulatory Commission, the act regulates the use and control of radioactive material.[b]
Biosafety Standards[c]	The National Institutes of Health, and the Centers for Disease Control and Prevention (CDC)	Operated under the U.S. Department of Health and Human Services, these agencies establish standards for working with biohazardous materials.
Structural and Building Components (Lead-based paint, PCBs, and asbestos)	Toxic Substances Control Act (TSCA) U.S. EPA	Regulates the use and management of PCBs in electrical equipment, and sets forth detailed safeguards to be followed during the disposal of such items. The USEPA monitors and regulates hazardous materials used structural and building components and affects on human health.

[a] U.S. Nuclear Regulatory Commission, Atomic Energy Act of 1954, as amended, http://www.nrc.gov/about-nrc/governing-laws.html, accessed January 7, 2009.
[b] Radioactive material is any material or combination of materials that spontaneously emit ionizing radiation.
[c] A hazardous biologic material is any potentially harmful biologic material (including infectious agents, oncogenic viruses, and recombinant DNA) or any material contaminated with a potentially harmful biologic material.

SOURCE: ESA, 2009

The FAA's Heliport Design Advisory Circular (AC 150/53990-2A) and Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, define the final approach and takeoff area (FATO) and safety areas for helipads. Clear approach and takeoff areas that extend well beyond the landing pad must exist in order to permit the establishment of the helipad; and these areas must be maintained clear of obstructions for operations to continue.

4.7.2.2 State

In January 1996, Cal/EPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program (CA EPA, 2009). In San Francisco, the San Francisco Department of Public Health is the designated CUPA for all businesses.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a Hazardous Materials Business Plan, which must include the following:[39]

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses

Hazardous Waste Handling

DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Under the federal Resource Conservation and Recovery Act of 1976 (RCRA), whose responsibilities are described in Table 4.7-1, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management standards for hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

[39] "Hazardous Materials Release Response Plans and Inventory Law," California Health and Safety Code, Chapter 6.95.

Hazardous Materials Transportation

The State of California has adopted USDOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the California Code of Regulations (CCR). In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California (State of California, 2007).

The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

The CHP enforces hazardous material and hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at as many as 72 locations throughout the state that can respond quickly in the event of a spill.

Common carriers of hazardous waste are licensed by the CHP, pursuant to California Vehicle Code Section 32000. Every type of hazardous waste package used by a hazardous materials shipper must undergo tests that imitate some of the possible rigors of travel. While not every package must be put through every test, most packages must be able to be: kept under running water for a time without leaking; dropped, fully loaded, onto a concrete floor; compressed from both sides for a period of time; subjected to low and high pressure; and frozen and heated alternately.

Medical Waste

Within the regulatory framework of the Medical Waste Management Act, the Medical Waste Management Program of the California Department of Health Services (CDHS) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste offsite treatment facilities and transfer stations throughout the state. The CDHS also oversees all medical waste transporters. UCSF, as a state agency, works with San Francisco Department of Public Health to ensure the Medical Waste Management Program is enforced.

Occupational Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations (CFR). Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous

substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that Materials Safety Data Sheets (MSDSs) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

State laws, like federal laws, include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. Specific, more detailed training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR. Emergency equipment and supplies, such as fire extinguishers, safety showers, and eye washes, must also be provided and maintained in accessible places.

Cal/OSHA (8 CCR), like Fed/OSHA (29 CFR) includes extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials, including maintenance, renovation, and demolition. These regulations are also designed to ensure that persons working near maintenance, renovation, or demolition activity are not exposed to asbestos.

Radioactive Materials

Pursuant to the federal Atomic Energy Act, which requires states to assume responsibility for the use, transportation, and disposal of low-level radioactive material and for the protection of the public from radiation hazards, the Radiologic Health Branch (RHB) of the CDHS administers the state's Radiation Control Law, which governs the storage, use, transportation, and disposal of sources of ionizing radiation (radioactive material and radiation-producing equipment). Radioactive material regulations require registration of sources of ionizing radiation, licensing of radioactive material, and protection against radiation exposure. The RHB also regulates the transportation of radioactive materials and disposal of radioactive waste. Users of radioactive materials must maintain detailed records regarding the receipt, storage, transfer, and disposal of such materials (RHB, 2009). State regulations concerning radioactive substances are included in 17 CCR. The regulations specify appropriate use and disposal methods for radioactive substances, as well as worker safety precautions and worker health monitoring programs. Radioactive materials at WHHS are regulated under its Radioactive Material License issued by the RHB.

Biosafety Standards

Similar to federal laws, state laws establish standards for working with biohazardous materials. A hazardous biologic material is any potentially harmful biologic material (including infectious agents, oncogenic viruses, and recombinant DNA) or any material contaminated with a potentially harmful biologic material. The National Institutes of Health and the Centers for Disease Control and Prevention operate under the U.S. Department of Health and Human Services and establish standards for working with biohazardous materials.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies, including Cal EPA, CHP, the Department of Fish and Game, the San Francisco Bay Regional Water Quality Control Board, and the San Francisco Fire Department (SFFD). The SFFD provides first response capabilities, if needed, for hazardous materials emergencies within the 2014 LRDP area.

Structural and Building Components

Asbestos

State laws and regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. Asbestos represents a human health risk when asbestos fibers become airborne (friable) and are inhaled into the lungs.

The Bay Area Air Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/altered including size, age, and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition or abatement; nature of planned work and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. The BAAQMD randomly inspects asbestos removal operations and will inspect any removal operation about which a complaint has been received. Cal/OSHA regulates asbestos removal to ensure the health and safety of workers removing asbestos containing materials (ACM) and also must be notified of asbestos abatement activities.

Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos.

Asbestos abatement contractors must follow state regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of ACMs. Asbestos removal contractors must be certified by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a hazardous waste generator number assigned by and registered with the DTSC in Sacramento. The applicant and the transporter of the waste are required to file a hazardous waste manifest that details the transportation of the material from the site and its disposal.

Polychlorinated Biphenyls (PCBs)

As previously discussed, PCBs are organic oils formerly used in many types of electrical equipment and in fluorescent lighting ballasts. PCBs are highly persistent in the environment and are toxic. In 1979, the USEPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (40 CFR). Fluorescent lighting ballasts that contain PCBs, regardless of size and quantity, are regulated as hazardous waste and must be transported and disposed of as hazardous waste.

Lead and Lead-Based Paint

The California Code of Regulations, Title 22, considers waste soil with concentrations of lead to be hazardous if it exceeds a total concentration of 1,000 parts per million (ppm) and a soluble concentration of 5 ppm.[40] Both the federal and California OSHAs regulate all worker exposure during construction activities that involve lead-based paint. The Interim Final Rule found in 29 CFR Part 1926.62 covers construction work where employees may be exposed to lead during such activities as demolition, removal, surface preparation for re-painting, renovation, clean up and routine maintenance. The OSHA-specified method of compliance includes, among other things, respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training.

Aboveground and Underground Storage Tanks

The State Water Resources Control Board (SWRCB) administers the Aboveground storage tank (AST) program. Facilities that store petroleum in a single tank greater than 1,320 gallons or facilities that store petroleum in ASTs or containers with a cumulative storage capacity of greater than 1,320 gallons are subject to SWRCB regulations. The AST Program requires that the owners or operators file a storage statement, pay a facility fee, and prepare and implement a federal Spill Prevention Control and Countermeasure (SPCC) Plan. The SPCC Plan must discuss the procedures, methods, and equipment in place at the facility to prevent discharges of petroleum from reaching navigable waters. AST oversight is provided by the San Francisco Department of Public Health, in accordance with the CUPA Program.

State laws governing underground storage tanks (UST) specify requirements for permitting, construction, installation, leak detection monitoring, repairs, release monitoring, corrective actions, cleanup, and closure. The San Francisco Department of Public Health and the SFFD are the local agencies designated to permit and inspect USTs and to implement applicable regulations.

Heliports and Helipads

Caltrans' Division of Aeronautics (DOA) issues permits for all heliports in the State of California. Heliports must meet the FAA's FATO standards in order to obtain a Caltrans operating permit, in addition to complying with Title 21 CCR, Airports and Heliports, which is based upon the FAA's Advisory Circular on Heliport Design.

[40] Susceptible of being dissolved, especially in water.

California Office of Statewide Health Planning and Development

The Office of Statewide Health Planning and Development (OSHPD) is a department of the California Health and Human Services Agency. OSHPD serves as the regulatory building agency for all hospitals and nursing homes in California (OSHPD, 2009). Its primary goal in this regard is to ensure that patients in these facilities are safe in the event of an earthquake or other disaster, and to ensure that the facilities remain functional after such an event in order to meet the needs of the community affected by the disaster.

4.7.2.3 Local

San Francisco

The City and County of San Francisco has enacted local regulations to address the potential to encounter hazardous materials in the soil and hazardous building materials, and to ensure the safe handling of hazardous materials and hazardous wastes. The following sections of the San Francisco Health Code, implemented by the San Francisco Department of Public Health (DPH) as the Hazardous Materials Unified Program Agency and briefly summarized below, would apply to the potential to encounter hazardous materials in the soil, and the use of hazardous materials under project sites:

- Article 22A (Analyzing the Soils for Hazardous Waste, known as the Maher Ordinance) requires that projects located in certain specified areas that would involve disturbance of more than 50 cubic yards of soil prepare a site history report to identify whether past site uses may have caused contamination, conduct soil testing for the presence of the potentially hazardous constituents, prepare a soils analysis report, and prepare a Site Mitigation Plan (if contamination is identified). The specified areas included land located bayward of the historic high tide line, areas currently or previously zoned industrial, areas currently or previously with industrial land uses, areas within 150 feet of Highway 101, Interstate 80, or Interstate 280, areas of Bay fill, areas within 100 feet of know hazardous waste site (Geotracker/Envirostor), and areas within 100 feet of an underground storage tank. If hazardous materials remain in the soil or groundwater, approval of the Site Mitigation Plan by the DPH may be conditioned upon submittal of a Risk Management Plan, Health and Safety Plan, and possibly a Cap Maintenance Plan to prevent exposure to hazardous materials in soil or groundwater after construction of the project. Upon completion of site mitigation, the site owner must submit certification that the project has received certification or verification from the appropriate state or federal agency that mitigation is complete. As master developer for the former redevelopment area, the Mission Bay Development Group (MBDG) is responsible for obtaining Maher site clearance from SFPDH for the University's Mission Bay parcels. The entire waterfront from Aquatic Park to Pier 80 is located bayward of the historic high tide line, and the DPH may also require compliance with Article 22A at sites westward of the historic high tide line if the DPH has reason to believe that hazardous materials may be present in the soil at the property.

- Article 21 (Hazardous Materials) provides for safe handling of hazardous materials in the city. It requires any person or business that handles, sells, stores, or otherwise uses specified quantities of hazardous materials to keep a current certificate of registration and to implement a hazardous materials business plan (HMBP). Threshold quantities are 500 pounds for solids, 55 gallons for liquids, and 200 cubic feet for compressed gases.

Every business that must implement an HMBP must also obtain a certificate of registration certifying that the HMBP meets the requirements of Article 21. This article also specifies requirements for the installation and operation of underground storage tanks, reporting of unauthorized releases, and closure of permitted facilities.

- Article 21A (Risk Management Plan) requires any business that handles, sells, stores, or otherwise uses regulated substances[41] in quantities exceeding specified threshold amounts to register with the DPH and prepare a Risk Management Plan. The Risk Management Plan must be submitted to the DPH before a Certificate of Occupancy can be issued.

- Article 22 (Hazardous Waste) provides for safe handling of hazardous wastes in the City. It authorizes the DPH to implement the state hazardous waste regulations, including authority to conduct inspections and document compliance.

Lead-Based Paint

Work that could result in the disturbance of lead-based paint must comply with Section 3425 of the San Francisco Building Code, Work Practices for Lead-Based Paint on pre-1979 Buildings and Steel Structures. Where there is any work that may disturb or remove lead-based paint on the exterior of any building built prior to December 31, 1978, Section 3425 requires specific notification and work standards and identifies prohibited work methods and penalties.

Section 3425 applies to the exterior of all buildings or steel structures on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces, unless demonstrated otherwise through laboratory analysis), and to the interior of residential buildings, hotels, and child care centers. The ordinance contains performance standards, including establishment of containment barriers, at least as effective at protecting human health and the environment as those in the U.S. Department of Housing and Urban Development Guidelines (the most recent Guidelines for Evaluation and Control of Lead-Based Paint Hazards) and identifies prohibited practices that may not be used in disturbances or removal of lead-based paint. Any person performing work subject to the ordinance shall, to the maximum extent possible, protect the ground from contamination during exterior work; protect floors and other horizontal surfaces from work debris during interior work; and make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work. Cleanup standards require the removal of visible work debris, including the use of a High Efficiency Particulate Air Filter (HEPA) vacuum following interior work.

The ordinance also includes notification and signage requirements. Prior to the commencement of work, the responsible party must provide written notice to the director of the San Francisco Department of Building Inspection (DBI) indicating the address and location of the project; the scope of work, including specific location; methods and tools to be used; the approximate age of the structure; anticipated job start and completion dates for the work; whether the building is residential or nonresidential, owner-occupied or rental property; the dates by which the responsible party has or will fulfill any tenant or adjacent property notification requirements; and the name, address,

[41] Regulated substances include those regulated under Section 68.130 of Title 40 of the Code of Federal Regulations, or those identified as an extremely hazardous substance in Appendix A of Part 355 of Title 40 of the Code of Federal Regulations, and those identified in Chapter 6.95, Article 2 of the California Health and Safety Code.

telephone number, and pager number of the party who will perform the work. Further notice requirements include signage when containment is required, requirements for signage when containment is required, notice to occupants, availability of pamphlet related to protection from lead in the home, and Early Commencement of Work (Requested by Tenant). The ordinance contains provisions regarding inspection and sampling for compliance by the DBI and enforcement, and describes penalties for non-compliance with the requirements of the ordinance.

4.7.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Regarding the criterion e), after evaluation of the activities proposed by the LRDP, the Initial Study concluded that implementation of the 2014 LRDP would clearly result in no impact or a less-than-significant impact at all campus sites. Therefore, this criterion is not discussed further in the EIR.

4.7.4 Analysis Methodology

This analysis evaluates the potential effects related to hazards and hazardous materials from implementation of the 2014 LRDP, including impacts from operation and construction related effects. Construction-related effects would be impacts that could occur during construction activities, including the potential for a release of hazardous materials during relocation of existing

tenants, the potential for a release of hazardous materials during construction, potential exposure to hazardous materials in soil, and potential exposure to hazardous building materials. Overall, compliance with regulatory requirements for these activities would ensure that hazardous materials impacts would be less than significant, as described.

4.7.5 References

URS Corporation, *San Francisco Hazard Mitigation Plan, Wildfire Hazard Area*, September 2008.

4.8 Hydrology and Water Quality

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Hydrology and Water Quality impacts. 2014 LRDP Hydrology and Water Quality effects are discussed in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures.* Hydrology and Water Quality effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures,* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.8.1 Regional Setting

4.8.1.1 Fluvial Hydrology and Stormwater Management

With the primary exception of parklands, much of the City of San Francisco is urbanized and covered in impermeable surfaces. There are few daylighted streams within the City, though topographic drainages in some park areas may have ephemeral surface flows during storms. Rainfalls rapidly produce surface runoff that is routed into a combined sewer system (CSS).

The CSS is a network of pipes and tunnels that convey combined stormwater and sanitary sewage flows, referred to as combined sewer discharge, to City wastewater treatment plants. During non-storm conditions, the City's CSS collects and treats up to 80 million gallons per day (MGD) of wastewater, primarily municipal sewage. The CSS routes flows to two treatment plants: the Southeast Treatment Plant in the Bayview/Hunters Point neighborhood, and the Oceanside Treatment Plant east of the Great Highway near the San Francisco Zoo. The Southeast plant receives approximately 80% of the combined wastewater and stormwater flows, including flows from the Mount Zion and Mission Center campus sites, and discharges them to San Francisco Bay. The Oceanside plant treats the remaining 20% of flows from the west side of the city, including wastewater from the Parnassus Heights campus site[42], and discharges them to the Pacific Ocean. During rainstorms, these facilities can collect and treat more than 500 million gallons per day (MGD) of combined inflows. These plants normally employ a minimum of secondary treatment to the combined inflows, before discharging the effluent. However, depending on individual storm characteristics and timing, the treatment plants can be overwhelmed, which results in discharge of minimally treated flows to the Bay and/or Ocean. Such overflows are expected to occur one to ten times per year (Gresgson, 2011).

The Mission Bay area, including the Mission Bay campus site, was formerly connected to the combined storm drain / sewer system. This system was separated in 2011 and stormwater flows are now discharged to San Francisco Bay.

[42] Due to campus topography, about half of the overland stormflow from the Parnassus Heights campus site goes to the Southeast plant.

Flooding

Mean annual rainfall for north central San Francisco (Richmond District gage) is 20.0 inches (WRCC, 2014). The rainy season for San Francisco's Mediterranean-type climate normally extends from October through March. Substantial floods occur in response to Pacific frontal-system storms of 3-5 days duration, with nested bursts of high-intensity rainfall. For the higher elevation zones of the City, such as Mount Sutro above Parnassus Heights, flooding is localized and occurs periodically due to obstructed storm drains, plugged catch basin inlets or undersized drain segments.

The Federal Emergency Management Agency (FEMA) is in the process of preparing Flood Insurance Rate Maps (FIRMs) for the City and County of San Francisco (CCSF).[43] FIRMs identify areas that are subject to inundation during a flood having a 1-percent chance of occurrence in a given year (also known as a "base flood," "100-year flood," or "1 percent annual chance flood"). FEMA refers to an area that is at risk from a 100-year flood as a special flood hazard area.

FEMA has delayed publication of a final FIRM until a more detailed analysis of flood hazards is completed. In 2008, the City agreed to join the National Flood Insurance Program (POSF, 2008). FEMA approved San Francisco's application for participation in the National Flood Insurance Program in April 2010, meaning that homeowners, renters, and business owners in the City are now eligible to purchase federally subsidized flood insurance for their property. The City Administrator's Office and the San Francisco Department of Emergency Management are also working to identify potential hazard mitigation projects that may be eligible for FEMA grants.

4.8.1.2 Water Quality

Central San Francisco Bay

Various contaminants are transported into the San Francisco Bay by sources that include urban uses, industrial outfalls, municipal wastewater outfalls, municipal stormwater, upstream farming, upstream historic and current mining discharges, legacy pollutants,[44] and various other sources.

Water depths along the San Francisco waterfront and piers are relatively shallow and suspended sediment loads are strongly influenced by nearshore discharges and wind- and wave-generated sediment disruption; they likely are similar to the higher sediment concentrations typically found near the bottom of the Bay or in other shallow environments.

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43 In September 2007, FEMA issued a preliminary FIRM of San Francisco for review and comment by the City. The City submitted comments that year, and FEMA anticipated publishing a revised preliminary FIRM by 2012, after completing a more detailed analysis of flood hazards associated with San Francisco Bay as requested by Port and City staff. FEMA will finalize the FIRM and publish it for flood insurance and floodplain management purposes after reviewing comments and appeals related to the revised preliminary FIRM. As of August 2014, final FIRM maps for San Francisco are still not available on the FEMA web page. https://msc.fema.gov/webapp/wcs/stores/servlet/mapstore/homepage/MapSearch.html

44 Legacy pollutants are water quality constituents that are considered harmful to human health or the environment, that were historically emitted by industry or other human activities, and that are in general banned or significantly restricted from current usage. Examples include mercury, lead, PCBs, and DDT.

Pollutants enter the Central San Francisco Bay primarily through runoff, combined sewer overflows, stormwater discharges, spills and leaks, and remobilization of contaminants from sediment into the overlying water column. The San Francisco Bay Regional Water Quality Control Board (RWQCB) listed the Central Bay as an impaired water body, as defined under Section 303(d) of the Clean Water Act (discussed in Section 4.8.2, Regulatory Considerations, below), that does not meet water quality standards, implementation of pollution control technology at point sources of pollution.

Central San Francisco Bay and Mission Creek at China Basin near the Mission Bay campus site are identified as impaired water bodies under Section 303(d) of the Clean Water Act (see Section 4.8.2.2 below).

4.8.2 Regulatory Considerations

4.8.2.1 Federal Regulations

Clean Water Act – Water Quality

In 1972, the Clean Water Act (CWA) established the basic structure for regulating discharges of pollutants into the waters of the U.S. and gave the U.S. Environmental Protection Agency (U.S. EPA) the authority to implement pollution control programs such as setting wastewater standards for industries. The CWA sets water quality standards for contaminants in surface waters. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The U.S. EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and programs, in California to the State Water Resources Control Board and the nine RWQCBs. Water quality standards applicable to the project are listed in the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), discussed further below under State Regulations in Section 4.8.2.2.

Executive Order 11988 and National Flood Insurance Program

Under Executive Order 11988, FEMA is responsible for management of floodplain areas, which are defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a one percent or greater chance of flooding in any given year. Also, FEMA administers the National Flood Insurance Program, which requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the one percent annual chance flood zone. FEMA prepares FIRMs that are used to identify areas prone to flooding.

4.8.2.2 State Regulations

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides for protection of the quality of all waters of the State of California for use and

enjoyment by the people of California. The act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the State are increasingly influenced by interbasin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the State. The statewide program for water quality control is therefore administered most effectively on a local level with statewide oversight. Within this framework, the act authorizes the SWRCB and regional boards to oversee the coordination and control of water quality within California.

San Francisco Bay Water Quality Control Plan (Basin Plan)

San Francisco Bay waters are under the jurisdiction of the San Francisco Bay RWQCB which established regulatory standards and objectives for water quality in the Bay in the *Water Quality Control Plan for the San Francisco Bay Basin*, commonly referred to as the Basin Plan (RWQCB, 2010). The Basin Plan identifies existing and potential beneficial uses for surface waters and provides numerical and narrative water quality objectives designed to protect those uses. The preparation and adoption of water quality control plans is required by the California Water Code (Section 13240) and supported by the federal CWA. Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plan is a regulatory reference for meeting the State and federal requirements for water quality control. Adoption or revision of surface water standards is subject to the approval of the USEPA.

Total Maximum Daily Loads

Under Section 303(d) of the Federal CWA, states must present the USEPA with a list of "impaired water bodies," defined as those water bodies that do not meet water quality standards. As discussed in the Setting section above under Water Quality, the San Francisco RWQCB has listed the Central Bay portion of the San Francisco Bay as well as Mission Creek as impaired water bodies (RWQCB, 2007), and as required by the CWA requires the development of Total Maximum Daily Loads (TMDLs) to improve water quality of impaired water bodies.

NPDES Waste Discharge Regulations

Section 402 of the federal CWA established the National Pollutant Discharge Elimination System (NPDES) program to protect the water quality of receiving Federal waters. The NPDES program requires all facilities that discharge pollutants into waters of the United States to obtain a permit. The permit provides two levels of control – technology-based limits and water-quality-based limits – to control discharge of pollutants for the protection of water quality. Technology-based limits are based on the ability of dischargers in the same category of industry to treat wastewater, while water quality-based limits are required if technology-based limits are not sufficient to provide protection of the water body. Water quality-based effluent limitations required to meet water quality criteria in the receiving water are based on criteria specified in the National Toxics Rule, the California Toxics Rule, and the Basin Plan. NPDES permits must also incorporate TMDL wasteload allocations when they are developed.

The regulations initially focused on municipal and industrial wastewater discharges in 1972, followed by stormwater discharge regulations, which became effective in November 1990. NPDES permits for wastewater and industrial discharges specify discharge prohibitions and effluent limitations and also include other provisions (such as monitoring and reporting programs) deemed necessary to protect water quality. In California, the SWRCB and the RWQCBs implement and enforce the NPDES program.

Construction General Stormwater Permit (SWRCB Order No. 2009-09-DWQ)

For stormwater discharges associated with construction activity in the state of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (Construction General Stormwater Permit) in order to avoid and minimize water quality impacts attributable to construction activities. The Construction General Stormwater Permit became effective on July 1, 2010 and expires on September 2, 2014; it applies to all projects where construction activity disturbs one or more acres of soil. Construction activities subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation. The Construction General Stormwater Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which includes and specifies best management practices (BMPs) designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving offsite into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Stormwater Permit. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges pollutants directly into a water body listed as impaired under the CWA's Section 303(d) list for sediment.

The Construction General Stormwater Permit is implemented and enforced by the San Francisco Bay RWQCB, which administers the stormwater permitting program for the program area. Dischargers are required to submit a notice of intent (NOI) and permit registration documents (PRDs) in order to, at the discretion of the SWRCB, obtain coverage under this Construction General Stormwater Permit. Dischargers are responsible for notifying the relevant RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected.

Phase II General Stormwater Permit (SWRCB Order No. 2003-0005-DWQ)

In 2003 the SWRCB adopted the General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer System (MS4s), SWRCB Order No. 2003-0005-DWQ (Phase II General Stormwater Permit). A revised permit applying to the MS4 at UCSF was approved in 2013. The revised Phase II General Permit requires UCSF to develop, implement and enforce a Storm Water Management Plan/Program (SWMP) by July 2016 that is designed to minimize the discharge of pollutants into receiving waters; identify appropriate stormwater treatment practices with measurable performance criteria; and ensure that the program includes provisions to address six minimum measures to promote pollutant load reduction. These measures are public education, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control and pollution prevention and good housekeeping.

The revised Phase II permit also requires that by July 2015, plans for UCSF projects that create and/or replace (including projects with no net increase in impervious footprint) more than 2,500 square feet of impervious surface include the following:

- Site design measures such as porous pavement, setbacks, and impervious area disconnections to reduce project site runoff
- Low-Impact Design (LID) standards to effectively reduce runoff and pollutants from the project site, including:
  - Source control measures such as permanent and/or operational source control measures at loading docks, fuel dispensing areas, pools, and other areas;
  - Numeric sizing criteria for stormwater retention and treatment; and
  - Stormwater treatment measures and baseline hydromodification management measures

Oceanside and Southeast Plant Permits

The City and County of San Francisco operates the Oceanside and Southeast Water Treatment Plants and their related transport and outfall facilities under the regulatory provisions in NPDES Permits No. CA0037681 and CA0037664, and the Waste Discharge Requirements (WDRs) cited in Orders No. R2-2009-0062 and R2-2008-0007, respectively (RWQCB, 2008 and 2009). These Orders stipulate protocols for the monitoring of dry and wet weather Water Treatment Plant influent and effluent and limitations on sampled constituents of concern. The Southeast Water Treatment Plant also maintains a pretreatment program for CSS flows.

4.8.2.3 Local Regulations

In 2013, UCSF was designated by the SWRCB as a Phase 2 non-traditional MS4 (State Water Quality Board Order 2013-0001-DWQ) because its campus facilities (with the exception of the Mission Bay campus site) feed into the City's CSS. Elsewhere in the City, stormwater discharges to the CSS are governed by the SFPUC *Stormwater Design Guidelines* (SFPUC, 2010). Practically speaking, UCSF manages its stormwater in a way that is consistent with the guidelines (Franke, 2014), but the guidelines are not enforceable on UCSF campus sites due to their coverage under the Phase 2 MS4.

San Francisco Floodplain Management Ordinance

As noted above in Section 4.8.1, *Regional Setting*, in 2008 the City agreed to join the National Flood Insurance Program (NFIP). As a condition for joining the NFIP, the City adopted the Floodplain Management Ordinance, which requires new or substantially improved structures in designated flood hazard areas be protected against flood damage, and prohibits uses that would increase flood risks. In general, the Floodplain Management Ordinance requires the first floor of structures in flood zones to be constructed above the floodplain or to be flood-proofed. (CCSF, 2011)

4.8.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Violate any water quality standards or waste discharge requirements?

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f) Otherwise substantially degrade water quality?

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

j) Inundate by seiche, tsunami, or mudflow?

4.8.4 Analysis Methodology

This analysis evaluates the potential effects on hydrology and water quality from implementation of the 2014 LRDP, including effects from construction and operation. Construction-related effects on hydrology and water quality include direct impacts that could occur during demolition, renovation, and construction activities, including contributions to combined sewer flows. In addition, indirect impacts on water quality could occur as a result of increased campus growth and the conversion of undeveloped areas to developed areas.

Overall, compliance with regulatory requirements for these activities and implementation of project-specific plans prepared for the 2014 LRDP would ensure that both direct and indirect water quality-related effects would be minimized. Operational impacts of the 2014 LRDP are related to stormwater runoff at the campus sites and similarly, compliance with regulatory requirements would ensure that water quality effects related to stormwater runoff would be reduced.

4.8.5 References

City and County of San Francisco (CCSF), Office of the City Administrator, *San Francisco Floodplain Management Program Fact Sheet*, Revised January 25, 2011.

Franke, Paul, UCSF, personal communication, February 28, 2014.

Gregson, John, San Francisco Water Department, personal communication to Clearwater Hydrology, 8/1/11; museumca.org/creeks/1690-OBSFSewers.htm

Port of San Francisco (POSF), Memo from Monique Moyer, Executive Director, to Members of the Port Commission, Informational Presentation Regarding the National Flood Insurance Program, June 4, 2008.

San Francisco Bay Public Utilities Commission (SFPUC), 2010. Stormwater Design Guidelines. January. http://www.sfwater.org/index.aspx?page=446

San Francisco Bay Regional Water Quality Control Board (RWQCB), 2006 *CWA 303(d) List of Water Quality Segments Requiring TMDLs*, approved by the United States Environmental Protection Agency on June 28, 2007.

RWQCB, 2008, Order R2-2008-007 Waste Discharge Requirements for the City and County of San Francisco: Southeast Water Pollution Control Plant (Southeast Plant), the North Point Wet Weather Facility, the Bayside Wet Weather Facilities, and the Wastewater Collection System within the City and adjoining service areas. SF Bay Regional Water Quality Control Board (Region 2), Oakland, CA. Effective date: April 1, 2008. http://www.swrcb.ca.gov/rwqcb2/board_decisions/adopted_orders/2009/R2-2009-0062.pdf.

RWQCB, 2009, Order R2-2009-0062 Waste Discharge Requirements for the City and County of San Francisco: Oceanside Water Pollution Control Plant (Southwest Ocean Outfall) and Collection System, including the Westside Wet Weather Facilities. SF Bay Regional Water Quality Control Board (Region 2), Oakland, CA. Effective date: Oct. 1, 2009. http://www.swrcb.ca.gov/rwqcb2/board_decisions/adopted_orders/2009/R2-2009-0062.pdf

RWQCB, 2010, *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), www.swrcb.ca.gov/rwqcb2/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf, December 31, 2010.

Western Regional Climate Center (WRCC), www.wrcc.dri.edu

4.9 Land Use and Planning

This section presents the Regional Setting, Regulatory Considerations, Significance Standards, and Analysis Methodology for the evaluation of Land Use and Planning impacts. 2014 LRDP Land Use effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Land Use effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.9.1 Regional Setting

While the regional setting for the 2014 LRDP is the San Francisco Bay Area, the changes proposed by the LRDP would occur at campus sites located entirely within the City of San Francisco, a relatively dense urban environment that is built out in most areas. Few large tracts of vacant or underused land are available for new development. San Francisco consists of a number of neighborhoods, each with its own unique physical characteristics and mix of land uses.

4.9.2 Regulatory Considerations

The 2014 LRDP is a comprehensive land use plan intended to guide growth and other physical changes at UCSF in order to achieve its academic, research and clinical missions through 2035. The 2014 LRDP will establish general types of campus development and land uses to support projected on-campus population and research growth at UCSF, and to facilitate expanded and new program initiatives. It provides objectives to guide decisions for future facilities to meet needs over the next 20 years and projects the quantities and uses of new building space needed during this time frame. The 2014 LRDP includes land use or "functional zone" maps for its major campus sites, Parnassus Heights, Mission Bay, and Mount Zion, which will guide the location of future capital construction and infrastructure development. Following public review, the EIR and 2014 LRDP will be submitted to the Regents for their approval. Upon adoption by the Regents, this 2014 LRDP will replace UCSF's 1996 LRDP, as amended.

The LRDP also references community planning principles that formalize UCSF's commitment to communicate with neighbors regarding its space needs and potential future development, in order to identify potential community concerns that may arise from UCSF's physical development prior to the time that individual projects are brought forward for approval.

Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. However, UCSF reviews local land use policies as planning guidelines and includes those policies that are germane to the analysis of land use impacts in this EIR.

In 1987, the City and UCSF entered into a *Memorandum of Understanding* (MOU) to foster harmonious relations between the City and UCSF regarding the growth and development of UCSF facilities within the City's boundaries. The MOU describes the responsibilities of the City and UCSF for the oversight of their respective land uses and the development, maintenance and use of physical facilities, including methods of communication and consultation regarding UCSF's proposed development.

UCSF consults with the City when planning new development, especially if improvements are being proposed within City rights-of-way adjacent to campus sites. In addition, it is UCSF's intent to adhere substantially, to the extent practicable, to City zoning codes related to building use, height, and bulk limitations; floor area ratios; and parking requirements or restrictions for the purpose of ensuring compatibility with surrounding areas. At the Mission Bay campus site, UCSF development is subject to agreements that were negotiated by UCSF with the City, the City's former Redevelopment Agency and other developers in Mission Bay as part of the *Mission Bay Redevelopment Area North and South Plans* and the subsequent implementation of those Plans.

The major land use planning documents of the City are summarized below.

4.9.2.1 San Francisco General Plan

The *San Francisco General Plan* provides general policies and objectives to guide land use decisions and includes policies that relate to environmental issues. Although the University is constitutionally exempt from land use regulation by local agencies when using its properties to further its educational mission, the University strives to be substantially consistent with local policies where feasible. The General Plan contains 10 elements (Commerce and Industry, Recreation and Open Space, Housing, Community Facilities, Urban Design, Environmental Protection, Transportation, Air Quality, Community Safety and Arts) that set forth goals, policies and objectives for the physical development of the City.

4.9.2.2 San Francisco Planning Code

The San Francisco Planning Code regulates development in the City by prescribing the permitted uses and development standards consistent with the land use designations and policies in the *San Francisco General Plan*. The San Francisco Zoning Map defines the locations and boundaries of zoning use, building height and bulk limit districts. Zoning in San Francisco generally consists of multiple layers of districts. Use Districts are the base zoning districts that prescribe permitted land uses and most development standards (except height and bulk). Height and Bulk Districts are mapped separately from Use Districts and prescribe the permitted height and bulk of buildings. In some instances, on top of the Use Districts and Height and Bulk Districts, Special Use Districts (SUDs) are mapped to address particular issues for targeted areas; SUDs provide controls that supersede some or all of the underlying Use Districts to meet certain goals.

4.9.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

d) Conflict with local land use regulations such that a significant incompatibility is created with adjacent land uses?[45]

Regarding criteria a) and c), after evaluation of the activities proposed by the 2014 LRDP, the Initial Study concluded that implementation of the 2014 LRDP would clearly result in no impact or a less-than-significant impact at all campus sites. Therefore, these criteria are not discussed further in the EIR.

4.9.4 Analysis Methodology

The examination of land use impacts is based on information obtained from the 2014 LRDP; review of published environmental documentation and land use studies of the UCSF campus sites; and review of documents pertaining to land use published by the City of San Francisco, including applicable elements of the General Plan. The analysis discusses whether the 2014 LRDP would be consistent with applicable land use plans and policies that were adopted for the purpose of avoiding or mitigating an environmental effect. Land use policies are policies that pertain to the type, location and physical form of new development. For this analysis, policies "adopted for the purpose of avoiding or mitigating an environmental effect" are considered those that, if implemented and adhered to, would avoid or mitigate physical impacts on the environment. For each potential impact, the analysis compares the impact to the standards of significance listed above and determines the impact's level of significance under CEQA.

[45] Although the standard of significance previously adopted in the 1996 LRDP EIR focused on whether implementation of the 1996 LRDP would "substantially conflict with the use designations, height and bulk, and density restrictions of local zoning," this EIR adopts a different standard of significance that focuses on compatibility with adjacent uses. Given the University's constitutional exemption from local land use regulations and the fact that 2014 LRDP proposals will be implemented on UCSF's four main campus sites, this new standard of significance will provide a more context-sensitive evaluation of land use impacts that takes into account the purpose of the local use, height and bulk, and density restrictions, which is to ensure compatibility with adjacent land uses. This new standard of significance will therefore provide a more informed and accurate analysis of the 2014 LRDP's land use impacts. For example, while the proposed new office/research building at the Mount Zion campus site would exceed the bulk restrictions of the Planning Code, the proposed building would be designed to align with the existing hospital building and located in a setting already built out with other UCSF facilities. Accordingly, although it would technically exceed the local bulk restrictions, it would be compatible with adjacent land uses and would not therefore create a significant land use impact.

4.10 Noise and Vibration

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Noise and Vibration impacts. 2014 LRDP Noise and Vibration effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Noise effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures,* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.10.1 Setting

4.10.1.1 Noise Background

Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that it travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called "A-weighting," expressed as "dBA." The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. A 10-dBA increase in the level of a continuous noise represents a perceived doubling of loudness. The noise levels presented herein are expressed in terms of dBA, unless otherwise indicated. **Table 4.10-1** shows some representative noise sources and their corresponding noise levels in dBA (HUD, 1985).

Planning for acceptable noise exposure must take into account the types of activities and corresponding noise sensitivity in a specified location for a generalized land use type. Some general guidelines are as follows: sleep disturbance can occur at levels above 35 dBA; interference with human speech begins at about 60 dBA; and hearing damage can result from prolonged exposure to noise levels in excess of 85 to 90 dBA (USEPA, 1974).

Attenuation of Noise

Sound from line sources of noise, such as roadway traffic, attenuates (lessens) at a rate of 3.0 to 4.5 dBA per doubling of distance from the source, based on the inverse square law and the equation for cylindrical spreading of noise waves over hard and soft surfaces.

TABLE 4.10-1
TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT

Examples of Common, Easily Recognized Sounds	Decibels (dBA)	Subjective Evaluations
Near Jet Engine	140	Deafening
Threshold of Pain (Discomfort)	130	
Threshold of Feeling – Hard Rock Band	120	
Accelerating Motorcycle (at a few feet away)	110	
Loud Horn (at 10 feet away)	100	Very Loud
Noisy Urban Street	90	
Noisy Factory	85	
School Cafeteria with Untreated Surfaces	80	Loud
Near Freeway Auto Traffic	60	Moderate
Average Office	50	
Soft Radio Music in Apartment	40	Faint
Average Residence Without Stereo Playing	30	
Average Whisper	20	Very Faint
Rustle of Leaves in Wind	10	
Human Breathing	5	
Threshold of Audibility	0	

NOTE: Continuous exposure above 85 dBA is likely to degrade the hearing of most people. Range of speech is 50 to 70 dBA.

SOURCE: United States Department of Housing and Urban Development, *The Noise Guidebook*, 1985.

Sound from point sources of noise,[46] including stationary mobile sources such as idling vehicles or onsite construction equipment, attenuates at a rate of 6.0 to 7.5 dBA per doubling of distance from the source, based on the inverse square law and the equations for spherical spreading of noise waves over hard and soft surfaces. For the purposes of this analysis, it is assumed that noise from line and point sources to a distance of 200 feet attenuates at rates of between 3.0 and 6.0 dBA per doubling of distance, and the noise from line and point sources at a distance greater than 200 feet attenuates at a rate of 4.5 to 7.5 dBA per doubling of distance, to account for the absorption of noise waves due to ground surfaces such as soft dirt, grass, bushes, and intervening structures (Caltrans, 2013).

Noise Descriptors

Time variations in noise exposure are typically expressed in terms of a steady-state energy level (L_{eq}) that represents the acoustical energy of a given measurement. Successive additions of sound

[46] Point sources and line sources are further defined by the California Department of Transportation (Caltrans) as follows:

> Sound from a small localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates or drops off at a rate of 6 dBA for each doubling of the distance (6 dBA/DD). This decrease, due to the geometric spreading of the energy over an ever increasing area, is referred to as the inverse square law. However, highway traffic noise is not a single, stationary point source of sound. The movement of the vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. This results in cylindrical spreading rather than the spherical spreading of a point source. (Source: Caltrans, 2013.)

to the community noise environment varies from instant to instant requiring the measurement of noise exposure over a period of time to accurately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq} The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max} The instantaneous maximum noise level for a specified period of time.

L_{50} The noise level that is equaled or exceeded 50 percent of the specified time. This is the median noise level during the specified time.

L_{90} The noise level that is equaled or exceeded 90 percent of the specified time. The L_{90} is often considered the background noise level averaged over the specified time.

DNL Sometimes referred to as Ldn, the Day/Night Average Sound Level is the 24-hour day and night A-weighed noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night. Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance from nighttime noise.

CNEL Similar to the DNL, the Community Noise Equivalent Level (CNEL) adds a 5 dBA "penalty" for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to a 10 dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.

Health Effects of Environmental Noise

The World Health Organization (WHO) is perhaps the best source of current knowledge regarding the health effects of noise impacts because European nations have continued to study noise and its health effects, while the United States Environmental Protection Agency all but eliminated its noise investigation and control program in the 1970s. According to WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels reach 45 dBA, particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria suggest that exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA. WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability of people to initially fall asleep (WHO, 1999).

Other potential health effects of noise identified by WHO include decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although shorter-term exposure to very high noise levels, for example,

exposure several times a year to concert noise at 100 dBA, can also damage hearing). Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA or moderately annoyed with noise levels below 50 dBA.

Vehicle traffic and continuous sources of machinery and mechanical noise contribute to ambient noise levels. Short-term noise sources, such as truck backup beepers, the crashing of material being loaded or unloaded, car doors slamming, and engines revving outside a nightclub, contribute very little to 24-hour noise levels but are capable of causing sleep disturbance and severe annoyance. The importance of noise to receptors depends on both time and context. For example, long-term high noise levels from large traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels, if they occur at night, can disturb sleep.

4.10.1.2 Vibration Background

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe physical vibration impacts on buildings. Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick people), and vibration-sensitive equipment.

Another useful vibration descriptor is known as vibration decibels or VdBs. VdBs are generally used when evaluating human response to vibration, as opposed to structural damage (for which PPV is the more commonly used descriptor). Vibration decibels are established relative to a reference quantity, typically 1 x 10^{-6} inches per second (FTA, 2006).

Sources of vibration in the proposed 2014 LRDP area primarily consist of Muni streetcars traveling along Third Street in the vicinity of the Mission Bay campus site. Most motor vehicles and trucks have independent suspension systems that substantially reduce if not eliminate vibration generation, barring discontinuities in the roadway.

4.10.2 Regulatory Considerations

4.10.2.1 Federal Regulations

Federal Aviation Administration

The Federal Aviation Administration (FAA) develops noise exposure maps that use average annual L_{dn} noise contours around the airport as the primary noise descriptor. The FAA states that all land uses are considered compatible when aircraft noise effects are less than 65 decibels (dB) CNEL. San Francisco International Airport is approximately seven miles south, and Oakland International Airport is approximately nine miles east, of the City of San Francisco. The entirety of the City of

San Francisco is outside the 65 dB CNEL noise contour of both airports (SFIA, 2008; OIA, 2008). The Phase 1 Medical Center at Mission Bay currently under construction will have an operational helipad that will generate operational noise. Noise contours for helicopter operations at the Phase 1 Medical Center were developed for the *UCSF Medical Center at Mission Bay EIR* and the *Final Supplemental EIR, UCSF Medical Center at Mission Bay—Residential Sound Reduction Program for Helicopter Operations Supplemental EIR* (UCSF, 2008 and 2009).

4.10.2.2 State Regulations

State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are collectively known as the California Noise Insulation Standards and are found in Title 24 of the California Code of Regulations.

For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor-ceiling assemblies must block or absorb sound. For limiting noise from exterior sources, the noise insulation standards set forth an interior standard of 45 dBA (L_{dn}) in any habitable room. Where dwelling units are proposed in areas subject to noise levels greater than 60 dBA (L_{dn}) a demonstration of how the units have been designed to meet this interior standard is required. If the interior noise level depends upon windows being closed, the design for the structure must also specify a ventilation or air-conditioning system that provides a habitable interior environment.

4.10.2.3 Local Regulations

UCSF is not subject to local plans, policies, or ordinances whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be consistent with such plans, policies or ordinances to the extent feasible. City plans, policies and ordinances that are relevant to noise are summarized below.

San Francisco General Plan

Land Use Compatibility Guidelines for Community Noise

The Environmental Protection Element of the *San Francisco General Plan* contains Land Use Compatibility Guidelines for Community Noise (CCSF, 1996). The City's guidelines indicate exterior noise levels that might be inappropriate for sensitive land uses and would therefore require additional noise insulation considerations beyond standard practices. Though this figure presents a range of noise levels that are considered compatible or incompatible with various land uses, the maximum "satisfactory" noise level is 60 dBA (L_{dn}) for residential and hotel uses; 65 dBA (L_{dn}) for school classrooms, libraries, churches, and hospitals; 70 dBA (L_{dn}) for playgrounds, parks, office buildings, retail commercial uses, and noise-sensitive manufacturing/communications uses; and 77 dBA for other commercial uses such as wholesale, some retail, industrial/manufacturing, transportation, communications, and utilities. If these uses are proposed to be located in areas with noise levels that exceed these guidelines, a detailed analysis of noise reduction requirements will normally be necessary prior to final review and approval.

Noise-Related Policies

The following policies of the *San Francisco General Plan* Environmental Protection Element that relate to noise issues are relevant to the proposed 2014 LRDP:

> ***Policy 10.1*:** Promote site planning, building orientation and design and interior layout that will lessen noise intrusion.
>
> ***Policy 10.2*:** Promote the incorporation of noise insulation materials in new construction. State-imposed noise insulation standards apply to all new residential structures except detached single-family dwellings.
>
> ***Policy 11.1*:** Discourage new uses in areas in which the noise level exceeds the noise compatibility guidelines for that use. New development should be examined to determine whether background and/or thoroughfare noise level of the site is consistent with the guidelines for the proposed use
>
> ***Policy 11.3*:** Locate new noise-generating development so that the noise impact is reduced.

San Francisco Noise Ordinance

In San Francisco, regulation of noise is stipulated in Article 29 of the Police Code (Regulation of Noise), which states that the City's policy is to prohibit unnecessary, excessive, and offensive noises from all sources subject to police power. Sections 2907 and 2908 of Article 29 regulate construction equipment and construction work at night, while Section 2909 provides for limits on stationary-source noise from machinery and equipment. Sections 2907 and 2908 are enforced by the Department of Building Inspection, and Section 2909 is enforced by the Department of Public Health. Summaries of these and other relevant sections are presented below.

Construction Noise

Sections 2907(a) and (b) of the Police Code state that it shall be unlawful for any person, including the City and County of San Francisco, to operate any powered construction equipment, regardless of age or date of acquisition, if the operation of such equipment emits noise at a level in excess of 80 dBA when measured at a distance of 100 feet from such equipment, or an equivalent sound level at some other convenient distance. Exemptions from this requirement include:

- Impact tools and equipment with intake and exhaust mufflers recommended by the manufacturers and approved by the Director of Public Works as best accomplishing maximum noise attenuation; and
- Pavement breakers and jackhammers equipped with acoustically attenuating shields or shrouds recommended by the manufacturers and approved by the Director of Public Works as best accomplishing maximum noise attenuation.

Section 2908 prohibits any person, between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day, from erecting, constructing, demolishing, excavating for, altering, or repairing any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line unless a special permit has been applied for and granted by the Director of Public Works.

Operational Noise

Section 2909 establishes a not-to-exceed noise standard for fixed sources of noise, such as building mechanical equipment and industrial or commercial processing machinery. Unlike the California Building Code (Title 24) standard, which is applicable to interior living space only, the standards in Section 2909(a), (b), and (c) are applicable outdoors, at the property line of the affected use, and vary based on the residential or commercial nature of the noise generator's use. For example, the noise limits for commercial and industrial properties provide that no person shall produce or allow to be produced a noise level more than 8 dBA above the local ambient level at the property plane. For residential properties, the noise limits are 5 dBA above the ambient level at any point outside of the property plane of a residential use. The noise limits for public property provide that no person shall produce a noise level more than 10 dBA above the local ambient level at a distance of 25 feet or more on public property.

As is common for noise standards, the permitted noise level for fixed residential interior noise limits identified in Section 2909(d) is lower at night than during the day. For example, maximum noise levels at any sleeping or living room in any dwelling unit located on residential property must not exceed 45 dBA between 10:00 p.m. and 7:00 a.m., and 50 dBA between 7:00 a.m. and 10:00 p.m. None of the noise limits set forth in this section apply to activity for which the City and County of San Francisco has issued a permit that contains noise limit provisions that are different from those set forth in this article. Additionally, the Directors of Public Health, Public Works, or Building Inspection, or the Entertainment Commission, or the Chief of Police may grant variances to noise regulations, over which they have jurisdiction pursuant to Section 2916.

Article 1, Section 47.2 of the Police Code regulates the use of any sound amplifying equipment, whether truck-mounted or otherwise, within the City and County of San Francisco and consists of the following regulations:

1. The only sounds permitted are music or human speech.

2. Hours of operation permitted shall be between 9:00 a.m. and 10:00 p.m.; operation after 10:00 p.m. is permitted only at the location of a public event or affair of general public interest or as otherwise permitted by the Entertainment Commission.

3. Except as permitted by the Entertainment Commission, sound shall not be issued within 450 feet of hospitals, schools, churches, courthouses, public libraries, or mortuaries.

4. No sound truck with its amplifying device in operation shall traverse any one block in the City and County more than four times in any one calendar day.

5. Amplified human speech and music shall not be unreasonably loud, raucous, jarring, or disturbing to persons of normal sensitiveness within the area of audibility, nor louder than permitted in Subsections (6) and (7) hereof.

6. When the sound truck is in motion, the volume of sound shall be controlled so that it will not be audible for a distance in excess of 450 feet from its source; provided, however, that when the sound truck is stopped by traffic, the said sound amplifying equipment shall not be operated for longer than one minute at such a stop.

7. Except as permitted by the Entertainment Commission for public gatherings, in all cases where sound amplifying equipment remains at one location or when the sound truck is not in motion, the volume of sound shall be controlled so that it will not be audible for a distance in excess of 250 feet from the periphery of the attendant audience.

8. No sound amplifying equipment shall be operated unless the axis of the center of any sound reproducing equipment used shall be parallel to the direction of travel of the sound truck; provided, however, that any sound reproducing equipment may be so placed upon said sound truck as to not vary more than 15 degrees on either side of the axis of the center of the direction of travel and, provided further, that radial, nondirectional type of loudspeakers may be used on said sound trucks either alone or in conjunction with sound reproducing equipment placed within 15 degrees of the center line of the direction of travel.

4.10.3 Significance Standards

Would implementation of the proposed 2014 LRDP result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

4.10.4 Analysis Methodology

4.10.4.1 Exposure of Persons to or Generation of Noise in Excess of Established Standards

The first two thresholds of significance examine (1) the extent to which development under the 2014 LRDP would expose people to noise levels that exceed established noise standards or (2) whether development under the 2014 LRDP would generate noise in excess of established noise standards. Because later thresholds address permanent and temporary increases in ambient noise levels in the vicinity of the project site, the evaluation of this threshold focuses on exposure of people within the 2014 LRDP campus sites to noise in excess of established standards.

To assess the extent to which implementation of the 2014 LRDP would expose receptors to noise levels in excess of established standards, future 2014 LRDP activities were evaluated against the policies and programs of the City of San Francisco General Plan Noise Element and the General Plan Guidelines of the State of California. The acceptable noise exposures for land use compatibility published by the State of California, which differ marginally from those of the City of San Francisco, are presented in **Figure 4.10-1**. The noise environment of surrounding land uses proposed under the 2014 LRDP were assessed for compatibility with these standards.

4.10.4.2 Exposure of Persons to or Generation of Groundborne Vibration

Impacts from groundborne vibration during 2014 LRDP construction activities are assessed using vibration damage threshold criteria expressed in PPV for architectural damage. The Caltrans measure of the threshold of architectural damage for conventional sensitive structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings.

Impacts from groundborne vibration during 2014 LRDP construction activities are also assessed for their potential to cause annoyance to adjacent residents. Caltrans vibration annoyance potential criteria characterize vibrations of 0.01 in/sec PPV as "barely perceptible," 0.04 in/sec PPV as "distinctly perceptible," 0.1 in/sec PPV as "strongly perceptible," and 0.4 in/sec PPV as "severe" (Caltrans, 2004).

4.10.4.3 Substantial Permanent Increases in Ambient Noise Levels

The impact assessment of substantial permanent increases in noise levels resulting from development under the 2014 LRDP is based on a combination of existing ambient noise conditions at a given receptor and the incremental increase in noise caused by 2014 LRDP development activities. LRDP development-related noise generally would be associated with increased traffic generation. Guidance on the significance of changes in ambient noise levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations (FICON, 1992). The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. The term "annoyance" is a summary measure of the general adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, they are considered applicable to all sources of transportation noise that are described in terms of cumulative noise exposure metrics such as the DNL, as shown in **Table 4.10-2**. The rationale for the Table 4.10-2 criteria is that, as ambient noise levels increase, a small increase in decibel levels is sufficient to cause significant annoyance. The quieter the ambient noise level is, the more the noise can increase (in decibels) before it causes significant annoyance. Thus, the significance of permanent increases in noise levels is evaluated based on the information provided in Table 4.10-2.

Figure 4.10-1
Land Use Compatibility for Community Noise Environment

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, 2003. *General Plan Guidelines*.

TABLE 4.10-2
MEASURES OF SUBSTANTIAL INCREASE IN TRANSPORTATION NOISE EXPOSURE

Ambient Noise Level Without Project (DNL)	Significant Impact Assumed to Occur if Project Site Development Increases Ambient Noise Levels By:
<60 dB	+ 5.0 dB or more
60-65 dB	+ 3.0 dB or more
>65 dB	+ 1.5 dB or more

NOTES:
DNL = day-night noise level. dB = decibels.

SOURCE: FICON, 1992.

4.10.4.4 Substantial Temporary or Periodic Increases in Noise Levels in the Vicinity of the Campus Sites above Levels Existing without 2014 LRDP Development

Temporary increases in noise levels in the vicinity of a development site are typically the result of site development and construction activities. Assessment of noise from construction activities resulting from development under the 2014 LRDP employs the restrictions established by Sections 2907 and 2908 of the San Francisco Police Code (which also indirectly applies to exposure of people or generation of noise in excess of established standards). These sections of the Police Code limit construction hours. Further, the Police Code prohibits individual pieces of construction equipment from operating at a noise level in excess of 80 dBA at a distance of 100 feet from such equipment. These requirements were used as the basis of analyzing temporary or periodic noise impacts of the proposed development under the 2014 LRDP.

4.10.4.5 Exposure of People to Excessive Airport Noise

The potential for exposure of people to excessive noise from public airports adequately was addressed in the Initial Study and is not evaluated further in this EIR. There are no public airports within two miles of the City and County of San Francisco.

4.10.4.6 Exposure of People to Excessive Noise from Private Airstrip Operations

The only UCSF campus site within two miles of what may be considered a private airstrip is Mission Bay. On completion of the current construction of the Phase 1 Medical Center at Mission Bay, UCSF will operate an active helipad. The proposed UCSF and non-UCSF facilities that would be closest to this helipad will be the proposed buildings constructed under implementation of the 2014 LRDP, including the new housing at the Mission Bay campus site, and existing nearby residential housing. Noise contours for helicopter operations at the Phase 1 Medical Center were developed as part of the analysis of the Phase 1 Medical Center (UCSF 2008 and 2009). The potential for noise exposure to residents of the proposed new housing at the Mission

Bay campus site will be analyzed, considering, among other things, acceptable noise exposures for land use compatibility published by the State of California presented in Figure 4.10-1.

4.10.5 References

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United States Department of Housing and Urban Development (HUD), *The Noise Guidebook*, 1985, http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/environment/training/guidebooks/noise; divided into chapters with Chapter 1 at http://portal.hud.gov/hudportal/documents/huddoc?id=DOC_16414.pdf, accessed February 20, 2014.

UCSF, *UCSF Medical Center at Mission Bay Environmental Impact Report*, September 2008.

UCSF, *UCSF Medical Center at Mission Bay—Residential Sound Reduction Program for Helicopter Operations Supplemental Environmental Impact Report*, April 2009.

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4.11 Population and Housing

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Population and Housing impacts. 2014 LRDP Population and Housing effects are discussed in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures.*

4.11.1 Regional Setting

The City and County of San Francisco would be the primary area affected directly by 2014 LRDP-related population and housing effects. However, effects may extend beyond San Francisco to neighboring counties in the Bay Area. The 2013 UCSF Transportation Commute Survey prepared in support of the LRDP indicates that over half of UCSF students and employees commute from San Francisco, and therefore likely reside in San Francisco. Besides San Francisco, commuters largely travel from four other counties to UCSF campus sites: Alameda, Contra Costa, Marin, and San Mateo. Therefore, the discussion below provides information on San Francisco with additional information on these four counties.

4.11.1.1 Population

In 2010, there were about 805,000 people living in San Francisco. There were approximately 346,000 households in San Francisco, and the average household size was 2.3 persons per household (U.S. Census, 2010). The number of people living in San Francisco increased by about 4% between 2000 and 2010, and during this period the City's population exceeded its prior peak of 780,000 residents recorded in 1951. The City's population in 2013 is estimated to be approximately 825,000, an increase of about 2.5% since 2010 (DOF, 2013). In 2010, the five-county region's population was approximately 4.34 million, an increase of about 5.1% since 2000. The 2013 population for the five-county region is estimated to be 4.44 million, an increase of about 2.3% since 2010 (DOF, 2013).

4.11.1.2 Housing

According to the decennial census, there were 379,900 housing units in San Francisco in 2010 — an increase of 30,400 units since 2000 (U.S. Census, 2010). During the period from 2008 to 2012, San Francisco had an estimated homeowner vacancy rate of 1.4% and rental vacancy rate of 4.3% (U.S. Census, 2012). The five-county region contains a total of approximately 1,742,000 housing units with an average vacancy rate of 6.6%. The estimated household size for the region overall is 2.6 persons per household. San Francisco's population accounts for about 19% of the five-county region's total population. With its housing growth and consistent gains in population over the last 15 years, San Francisco has generally maintained its share of regional population, which represents a marked change from the historical trend of declining regional share.

4.11.1.3 Regional Projections

The Association of Bay Area Governments (ABAG) is the regional planning agency for the nine Bay Area counties and provides projections of future Bay Area population, housing, and employment. In April 2010, ABAG, MTC, the BAAQMD, and the BCDC launched a "One Bay Area" outreach and planning initiative to coordinate efforts among the region's nine counties and 101 towns and cities in the development of an integrated transportation, land use and housing plan. A major effort of the agencies, in partnership with the region's counties, cities and towns, has been the development of "Plan Bay Area" as the region's long-range plan for sustainable land use, transportation and housing. Adopted in July 2013, *Plan Bay Area* is intended to respond to requirements of Senate Bill 375, which requires the Regional Transportation Plan to contain a Sustainable Communities Strategy that integrates land use planning and transportation planning and identifies where the region's population will be housed. The plan will be updated every four years (ABAG, 2013).

Table 4.11-1 shows ABAG's current forecast for San Francisco and the four other counties affected by the LRDP, which was prepared in 2013 for *Plan Bay Area*. The *Plan Bay Area* forecasts show that of the five counties, San Francisco will have the second highest growth in households and jobs over the 2010–2040 planning period. The City's population is expected to increase by 280,490 new residents between 2010 and 2040, which would represent a 35% increase over the City's 2010 population levels. Over the same 30-year period, the five-county region's population is expected to increase by 29%, or by nearly 1.267 million new residents. Household growth is expected to be slightly below population growth, with the number of households in San Francisco increasing by 29% between 2010 and 2040 and households in the five-county region increasing by 26%.

The rate of future job growth in San Francisco is expected to be similar to the rate of population growth. Between 2010 and 2040, San Francisco is expected to add about 191,000 new jobs, which would represent nearly a 34% increase over its 2010 employment levels. Over the same 30-year period, the five-county region's employment is expected to increase by 33%, or by about 685,000 new jobs.

4.11.1.4 University of California, San Francisco

As indicated in Chapter 3, *Project Description*, UCSF currently (2013) has approximately 6,310 students and postdoctoral scholars; 8,090 paid and upaid faculty; and 16,440 full-time equivalent staff.

4.11.2 Regulatory Considerations

Population and housing changes, in and of themselves, are not normally considered to be significant impacts (i.e., substantial, adverse impacts on the physical environment) under CEQA, but CEQA does allow inclusion of these effects as indicators of other impacts. Therefore, this analysis quantifies and describes the magnitude of such potential changes. The potential physical environmental impacts associated with changes in population and housing are analyzed in other sections of this EIR (e.g., transportation, public services, air quality). Direct increases in

TABLE 4.11-1
PLAN BAY AREA FORECAST OF POPULATION, HOUSEHOLDS, AND EMPLOYMENT FOR SAN FRANCISCO AND THE FIVE-COUNTY REGION (2010-2040)

Factor	2010	2040	2010 to 2040	
			Increase	Percent
Population				
San Francisco	805,240	1,085,730	280,490	35%
Alameda	1,510,270	1,987,950	477,680	32%
Contra Costa	1,049,030	1,338,440	289,410	28%
Marin	252,410	285,400	32,990	13%
San Mateo	718,450	904,430	185,980	26%
Five-County Region	4,335,400	5,601,950	1,266,550	29%
Households				
San Francisco	345,810	447,350	101,540	29%
Alameda	545,140	705,330	160,190	29%
Contra Costa	375,360	464,150	88,790	24%
Marin	103,210	112,050	8,840	9%
San Mateo	257,840	315,090	57,250	22%
Five-County Region	1,627,360	2,043,970	416,610	26%
Employment				
San Francisco	568,720	759,500	190,780	34%
Alameda	694,450	947,650	253,200	36%
Contra Costa	344,920	467,390	122,470	36%
Marin	110,730	129,140	18,410	17%
San Mateo	345,200	445,080	99,880	29%
Five-County Region	2,064,020	2,748,760	684,740	33%

NOTE: Numbers may not sum due to rounding

SOURCE: ABAG and MTC, Plan Bay Area: Strategy for a Sustainable Region, Final Forecast of Jobs, Population, and Housing, July 2013.

employment can create secondary impacts, such as an increased demand for housing. This housing demand would be considered a significant effect if the housing demand could not be met with existing or future housing supply within the housing market for new UCSF students and employees. While the development of housing itself would not be a significant adverse impact, construction of housing could create other short-term environmental impacts, such as air quality or noise impacts.

4.11.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

d) Exceed the LRDP EIR standard of significance by creating a demand for housing outside the market area where the facilities or site are located?

Regarding criteria b) and c), the Initial Study concluded that implementation of the 2014 LRDP would clearly result in no impact or a less-than-significant impact. Therefore, these criteria are not discussed further in the EIR.

4.11.4 Analysis Methodology

The analysis estimates the amount of population and related housing needs that would result from implementation of the 2014 LRDP. To evaluate the relative magnitude of the increases in population and housing needs resulting from implementation of the 2014 LRDP, the analysis compares these estimates with growth estimates developed for both the City and the entire five-county region. "Substantial" growth resulting from implementation of the 2014 LRDP is defined as increases in population or employment that are unplanned, i.e., are inconsistent with growth anticipated in planning documents.

4.11.5 References

ABAG and MTC, Plan Bay Area: Strategy for a Sustainable Region, Final Forecast of Jobs, Population, and Housing, July 2013

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4.12 Public Services

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Public Services impacts. 2014 LRDP Public Services effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Public Services effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.12.1 Regional Setting

The study area is defined as the four UCSF main campus sites and surrounding areas for which the 2014 LRDP development activities are proposed and which are relevant to the public services under discussion. The campus sites in the study area include Parnassus Heights, Mission Bay, Mount Zion, and Mission Center.

4.12.1.1 Fire Protection

UCSF does not have its own fire department. The San Francisco Fire Department (SFFD), headquartered at 698 Second Street, provides fire protection and emergency services to the City of San Francisco, as well as to all UCSF facilities within the City. SFFD serves an estimated 1.5 million people within the 49 square miles of the city. Emergency medical transportation to San Francisco hospitals is provided by a dynamically deployed fleet of both public and private ambulance services.

Fire suppression companies are organized into two divisions, which are further divided into nine battalions, located throughout the City (SFFD, 2013b). As of 2013, the SFFD consists of 1,500 firefighting and emergency medical field personnel and resources include 44 Engine companies, 19 Truck companies, a dynamically deployed fleet of Ambulances, two Heavy Rescue Squad units, two Fireboats and multiple special purpose units. The Airport Division is comprised of three firefighting stations and seven companies located at the San Francisco International Airport (SFFD, 2013b).

The San Francisco Public Utilities Commission-City Distribution Division operates and maintains an Auxiliary Water Supply System (AWSS) used for fire protection use only. This high pressure water supply system is distinct and separate from the City's domestic water and fire hydrant system. The AWSS consists of 150 miles of 8- to 20-inch diameters mains, 1,550 special hydrants, a high elevation water reservoir and two large water tanks, emergency saltwater pump stations, and series of underground cisterns. The two AWSS emergency saltwater pumping stations (located at Second and Townsend streets and at Fort Mason) each have a pumping capacity of 10,000 gallons per minute (gpm) to supplement the AWSS with saltwater.

Each UCSF campus site is assigned a designated station that responds to university-related calls.

- **Parnassus Heights campus site:** Station 12, located at 1145 Stanyan Street, 0.5 mile from the campus core.
- **Mission Bay campus site:** Station 8, located approximately 1.5 miles north of the campus site at 36 Bluxome Street.
- **Mount Zion campus site:** Station 10, located 0.5 mile west at 655 Presidio Avenue.
- **Mission Center campus site:** Station 7, located at 2300 Folsom Street, 0.5 mile south of the campus site.

Other stations in proximity to each campus site include:

- **Parnassus Heights:** Station 20 at 285 Olympia Way (1.5 miles); Station 22, at 1290 16th Avenue (1.0 mile); and Station 24 at 100 Hoffman Avenue (2.0 miles).
- **Mission Bay:** Station 29 at 299 Vermont Street (0.8 miles); and Station 37 at 798 Wisconsin Street (1.1 miles).
- **Mount Zion:** Station 5 at 1301 Turk Street (0.9 miles); Station 21 at 1443 Grove Street (0.8) miles; and Station 38 at 2150 California Street (0.8) miles.
- **Mission Center:** Station 6 at 135 Sanchez Street (1.3 miles); Station 29 at 299 Vermont Street (0.8 miles); and Station 36 at 109 Oak Street (1.3 miles).

Table 4.12-1 provides a summary of the staffing and equipment for each of the four designated response stations.

TABLE 4.12-1
SUMMARY OF EXISTING SFFD STAFFING AND EQUIPMENT IN 2014 LRDP AREA

SFFD Designated Fire Station	Staffing per Shift	Total Members	Fire Engines/ Trucks
Parnassus Heights No. 12: Stanyan St./Grattan St.	9	32	E12 T12
Mission Bay No. 8: Bluxome St./4th St.	10	35	E08 T08
Mount Zion No. 10: Presidio Ave./Bush St.	9	32	E10 T10
Mission Center No. 7: Folsom St./19th St.	15	53	E07 T07

SOURCE: San Francisco Fire Department, 2014

Table 4.12-2 summarizes SFFD responses at the four designated response stations in the year from August 2012 to August 2013.

TABLE 4.12-2
SUMMARY OF SFFD RESPONSES FOR FIRE STATIONS IN PROJECT AREA (AUGUST 2012 TO AUGUST 2013[a])

SFFD Fire Station No.	Fire Responses	Medical Responses	Total Responses
12	1,278	2,521	3,799
8	2,039	6,179	8,218
10	1,975	3,200	5,175
7	3,144	11,335	14,479

SOURCE: San Francisco Fire Department, 2014.

Fire Support Standards

Emergency calls for fire and medical services at UCSF campus sites are routed to the SFFD for dispatching. Response times generally reflect the seriousness of the call. As of 2013, the SFFD has a response time goal for the first arriving unit of 5:00 minutes, while actual response times averaged 4:52 minutes (SFFD, 2013b).

4.12.1.2 Police Services

University of California Police Department

The UC Police Department (UCPD) provides police protection services for University of California properties and facilities that comprise UCSF. The UCPD is responsible for approximately 38,600 patients, visitors, students, faculty, staff and affiliates. Headquartered at 654 Minnesota Street, just south of the Mission Bay campus site, the UCPD employs approximately 120.5 authorized staff. UCPD headquarters is approximately 4 miles from Parnassus Heights, 0.25 miles from Mission Bay, and 4.1 miles from Mount Zion. UCPD operates a patrol station at both the Parnassus Heights and Mission Bay campus sites, and UCPD has offices in the Mission Center building.

The UCPD is comprised of the Field Services Division, which provides police and investigative services, the Technical Services Division, the Professional Standards Division, and the Homeland Security and Emergency Management Division.

As of 2012, the service ratio of police personnel to UCSF population is 1.9 sworn police officers per 1,000 persons (UCPD, 2012). Police officers patrol by car, bicycle and on foot to maintain high-profile, proactive and preventive public safety services (UCPD, 2014). In 2012, UCSF police responded to 49,883 calls for service and processed 313 arrests. UCSF police also conducts Community Oriented Policing and Problem Solving (COPPS) activities, in which the police work with community members to fight crime, of which 3,094 activities were conducted in 2012 (UCPD, 2012).

San Francisco Police Department

The San Francisco Police Department (SFPD) is responsible for police protection services in the City and County of San Francisco. The UCPD has a mutual-aid agreement with the SFPD to provide cooperative assistance within a 1-mile radius of each UCSF campus site. A memorandum of understanding between the UCPD and the SFPD establishes that UCPD has exclusive jurisdiction over police service on UCSF properties. Depending on the nature of the emergency, the UCPD may request assistance from the SFPD (UCSF, 2005).

SFPD is comprised of the Patrol Division, Airport Division, Investigations Division, Homeland Security Department, and Administrative Division. The Patrol Division is divided into the Metro Division and the Golden Gate Division, which oversee ten separate districts. The Golden Gate Division districts encompass the Parnassus Heights, Mission Bay, and Mount Zion campus sites.

The Mission Center campus site falls within the jurisdiction of the Metro Division and is located in the Mission District, headquartered at 630 Valencia Street. The Parnassus Heights campus site is located in the Park District, headquartered at 1899 Waller Street. The Mount Zion campus site is located in the Richmond District, headquartered at 461 6th Avenue. The Mission Bay campus site is located within the Bayview District, headquartered at 201 Williams Street.

In 2011, the City broke ground on a new Public Safety Building in Mission Bay, located at Third Street and Mission Rock Street, which is scheduled to be operational in late 2014. The Public Safety Building will house a new fire station and also serve as the new home of the SFPD Headquarters and Southern District Station.

The SFPD is mandated by the City Charter to maintain a sworn staff of 1,971, excluding officers assigned to the San Francisco International Airport and officers not available for field duty (e.g., due to on-duty injuries, temporary modified duty, medical leave, and administrative leave). During 2012, the Department averaged 1,644 total full-duty sworn officers (SFPD, 2012). In 2012, the SFPD changed how it assigned its officers to ensure adequate staff would be available to provide minimum safety services, as well as to staff special events and deploy officers to meet unexpected needs when services require “all hands,” such as during the month of October 2012 when multiple major events were held in the city. Throughout 2012, days off were cancelled and/or shifts modified in order to meet the needs of the SFPD (SFPD, 2012). In order to address the anticipated retirement of over 100 sworn officers in mid-2013, the SFPD drafted a six-year hiring plan, approved by the Mayor, which will return the SFPD to its Charter-mandated staffing level of 1,971 sworn officers (SFPD, 2012).

San Francisco Sheriff’s Department

The San Francisco Sheriff’s Department (SFSD) manages the San Francisco County Jail and protects City-owned critical infrastructure. In addition, the SFSD augments law enforcement at the request of the SFPD.

California Highway Patrol

The California Highway Patrol (CHP) provides law enforcement services on state highways including the San Francisco-Oakland Bay Bridge. The San Francisco CHP station is located at 455 Eighth Street in San Francisco.

4.12.1.3 Public Schools

San Francisco Unified School District

The San Francisco Unified School District (SFUSD) operates San Francisco's public schools. During the 2011–2012 academic year, the SFUSD managed 115 schools (73 elementary schools, 16 middle schools, 18 high schools, six alternative schools, and two continuation schools), with a total enrollment of approximately 56,200 (EDP, 2014).

In general, student enrollment within the SFUSD has steadily decreased since the late 1990s. However, enrollment has begun to increase since reaching a low of approximately 55,100 during the 2007–2008 academic year (CDE, 2014). The SFUSD anticipates that elementary school enrollment will grow due to the large birth rates earlier in the decade. Middle school enrollment is anticipated to rise as well, but remain below current enrollment in 2013. High school enrollment will experience a continuous decline through 2013 due to the declining births of the 1990s (SFUSD, 2014). There are multiple schools that serve each campus site; the current enrollment and historic enrollment trends are discussed below.

Schools serving the area around the Parnassus Heights campus site include Alice Fong Yu Alternative School (K-8) at 1541 12th Avenue, Clarendon Alternative Elementary School (K-5) at 500 Clarendon Avenue, Grattan Elementary School (K-5) at 165 Grattan Street, Everett Middle School (6-8) at 450 Church Street, and Mission High School (9-12) at 3750 18th Street. Enrollment at Alice Fong Yu Alternative School has increased steadily over the last decade from 486 students to 574 students during the 2012-13 school year. Clarendon Alternative Elementary School experienced a steady decrease with a low of 528 students during the 2008-09 academic year, then reaching 585 students in 2012-13. Over the last decade, Grattan Elementary School has increased significantly from 254 students to 390 students in 2012-13, with rapid growth over 5 percent per year from 2007 to 2010. Everett Middle School has generally declined in enrollment, from 588 to a low point of 341 students during the 2010-11 school year, at which point, enrollment began to increase reaching 406 in 2012-13. Enrollment at Mission High School has fluctuated over the years, with a high of 978 students and a low of 835 students, and currently has 927 students enrolled (EDP, 2014).

Schools serving the area around the Mission Bay campus site include Bessie Carmichael/Filipino Education Center School (K-5) at 375 Seventh Street and 824 Harrison Street (6-8), Daniel Webster (elementary) located at 465 Missouri Street, and International Studies Academy at 655 De Haro Street. Enrollment at Bessie Carmichael averaged fewer than 400 students during the 1990s through the 2004–2005 academic year, when the school served kindergarten through 5th grades. Grades 6 through 8 were subsequently added to the school during the period from 2005 through 2008. Approximately 648 students are enrolled for the 2012–2013 academic year.

Enrollment at Daniel Webster also declined during the early 2000s, but has steadily increased since 2007–2008. Approximately 262 students are enrolled for the 2012–2013 academic year. Around 400 students are currently enrolled at International Studies Academy (EDP, 2014).

Schools serving the area around the Mount Zion campus site include Dr. William L. Cobb Elementary School (PK-5) at 2725 California Street, Rosa Parks Elementary School (K-5) at 1501 O'Farrell Street, Theodore Roosevelt Middle School (6-8) at 460 Arguello Boulevard, and Raoul Wallenberg Traditional Alternative High School (9-12) at 40 Vega Street. Dr. William L. Cobb Elementary School has fluctuated in enrollment over the last decade from 195 students to a low of 167; in the 2012-13 school year when 201 students were enrolled. Rosa Parks Elementary School increased significantly from 246 students to 369 students in the 2006-07 school year, at which point, enrollment growth slowed; 411 students were enrolled from 2012-13. Theodore Roosevelt Middle School has steadily decreased over the years from 787 students in 2003-04 to 710 students from 2012-13. Raoul Wallenberg Traditional Alternative High School has remained relatively consistent since 2003, with a low of 613 students enrolled and a current enrollment around 637 students (EDP, 2014).

Schools serving the area around the Mission Center campus site include Marshall Elementary School (K-5) at 1575 Fifteenth Street**,** Everett Middle School (6-8) at 450 Church Street, Mission High School (9-12) at 3750 Eighteenth Street, and John O'Connell High School (9-12) at 2355 Folsom Street. Marshall Elementary decreased from 228 students to 214 students in 2006-07 and then increased to 249 students by 2012-13. As discussed above, Everett Middle School has generally declined in enrollment, from 588 in 2003-04 to 406 in 2012-13, and Mission High School has fluctuated over the years from a high of 978 students and a low of 835 students. John O'Connell High School has decreased significantly over the last decade from 932-students in 2003-04 to 449 students in 2012-13.

As discussed in Section 3, *Project Description*, Block 14 of the Mission Bay campus site is currently reserved for use by the SFUSD as a public school site. Per the agreements through which the Mission Bay campus site was acquired by the Regents, the SFUSD has until 2027 to request conveyance of the 2.4-acre site for use as a school. If the SFUSD does not request Block 14 during that timeframe, UCSF may then develop Block 14 for its own use after the necessary planning, environmental review, and amendment of the LRDP.

4.12.1.4 Parks

Effects on local and regional parks are discussed in Section 4.13, *Recreation*.

4.12.2 Regulatory Considerations

4.12.2.1 California Master Mutual Aid Agreement

The California Master Mutual Aid Agreement is a framework agreement between the State of California and local governments for aid and assistance by the interchange of services and facilities, including but not limited to fire, police, medical and health, communication, and transportation

services and facilities to cope with the problems of rescue, relief, evacuation, rehabilitation, and reconstruction.

Fire Regulations

All projects undertaken at UCSF are subject to the approval of the State Fire Marshal and compliance with California Health and Safety Code Sections 13000 et seq. which sets forth State fire regulations concerning building standards (as set forth in Title 24 of the California Building Code), fire protection and notification systems, fire protection devices (such as fire extinguishers and smoke alarms), high-rise building and child care facility standards, and fire suppression training. California Fire Code Section 403.2 addresses public safety for both indoor and outdoor gatherings, including emergency vehicle ingress and egress, fire protection, emergency medical services, public assembly areas and the directing of both attendees and vehicles (including the parking of vehicles), vendor and food concession distribution, and the need for the presence of law enforcement and fire and emergency medical services personnel at the event. The Fire Marshal's office has review and approval authority over all development proposals on the UCSF campus sites.

Police Regulations

As noted above, the UCPD has a mutual-aid agreement with the SFPD to provide cooperative assistance within a 1-mile radius of each UCSF campus site. A memorandum of understanding between the UCPD and the SFPD establishes that UCPD has exclusive jurisdiction over police service on UCSF properties (UCSF, 2005).

Projects implemented under the 2014 LRDP would be required to comply with applicable rules of the California Office of Statewide Health Planning & Development (OSHPD) with respect to the incorporation of security features in standard building design plans.

Schools

The University is not subject to fee requirements such as those paid by developers pursuant to California Government Code Sections 53080, 65995, and 66001.

4.12.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

   i) Fire protection?
   ii) Police protection?
   iii) Schools?
   iv) Parks?
   v) Other public facilities?

4.12.4 Analysis Methodology

Implementation of the proposed 2014 LRDP could have a significant impact if (1) it would require the construction of new or physically altered governmental facilities in order to maintain acceptable levels of public services, and (2) the construction or alteration of such facilities would result in one or more substantial adverse impacts on the environment.

In general, development that would occur on UCSF campus sites under the 2014 LRDP would increase demand for public services. While some impacts would result from on-campus activities, such as new buildings requiring additional fire coverage, other impacts would occur with the increase in population in surrounding communities.

While the 2014 LRDP includes space at the Mission Bay campus site that may be considered for UCSF police services in the future, the potential for impacts on public services is analyzed at the program level. With respect to specific projects, UCSF would determine the appropriate level of environmental review when more detailed plans become available.

Public service providers that would be affected by the changes in the 2014 LRDP were consulted to determine if new facilities would need to be built, or existing facilities would need to be expanded, in order to maintain current levels of service, including response times, service ratios and other performance objectives. If new or altered public service facilities are determined to be required to serve the 2014 LRDP planning area, then the analysis evaluates whether construction of such facilities would have a substantial adverse physical impact on the environment. For example, if the SFPD determined that a new police station would be required to be constructed to maintain adequate service levels for law enforcement, the impact analysis would evaluate whether construction or operation of the new police station would have significant impacts on the physical environment.

For purposes of the impact analysis, it is assumed that all temporary and permanent improvements would be designed and constructed in compliance with all applicable building and fire codes, which include requirements for fire alarms, security systems, smoke detectors, sprinkler systems, fire extinguishers, and the number and location of exits.

4.12.5 References

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San Francisco Police Department (SFPD), *2012 Annual Report*, available online at https://dl.dropboxusercontent.com/u/76892345/Annual%20Reports/2012%20Annual%20Report.pdf, accessed February 6, 2014.

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SFFD, San Francisco Fire Department, http://www.sf-fire.org/index.aspx?page=164, accessed on September 22, 2013b.

San Francisco Unified School District (SFUSD), *Capital Plan, FY 2010-2019*, September 2009, available online at http://www.sfusd.edu/en/assets/sfusd-staff/about-SFUSD/files/capital-plan-final-2010-2019.pdf, accessed February 7, 2014.

University of California, San Francisco, Police Department (UCPD), UC Police Department Reports Dashboard, Annual Report 2012.

UCPD, Police Department Annual Report and Crime Statistics, Program Highlights http://police.ucsf.edu, accessed January 27 and February 5, 2014.

4.13 Recreation

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Recreation impacts. 2014 LRDP Recreation effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Recreation effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.13.1 Regional Setting

In addition to UCSF, additional agencies that own and manage recreation facilities on and near the UCSF campuses include: the San Francisco Recreation and Park Department, and the agencies that manage the Mission Bay Park System.

4.13.1.1 UCSF Recreation Facilities

Parnassus Heights

The Parnassus Heights campus site features three primary areas with open space and recreation opportunities. The campus has several plazas of various sizes, including Saunders Court, which is considered the primary designed open space on campus. In addition, the Millberry Fitness and Recreation Center is the primary recreational facility for students, staff, and neighbors of the Parnassus Heights campus site. The Center offers a full gym, indoor pool, spinning studio, and fitness classes.

Mount Sutro Open Space Reserve

The University-owned Mount Sutro Open Space Reserve consists of 61 acres of largely undeveloped forest located near the geographical center of San Francisco. The Reserve is surrounded by the UCSF campus to the north and northwest, and by urban residential neighborhoods to the south, east and west. In addition, the Interior Greenbelt natural area, owned by the City and County of San Francisco, is adjacent to the east side of Reserve. The Reserve is open to the general public.

Mission Bay

Koret Quad is located near the center of the Mission Bay campus site, and serves as a public plaza and open space, with large lawn areas surrounded by shade trees. The Bakar Fitness and Recreation Center is located in the center of campus, in the William J. Rutter Center complex, and offers a variety of indoor and outdoor athletic activities for students, faculty, staff, and the public.

4.13.1.2 City and County of San Francisco

The San Francisco Recreation and Park Department (SFRPD) maintains more than 200 parks, playgrounds, and open spaces throughout the City. The City's park system also includes 15 recreation centers, nine swimming pools, and five golf courses, as well as tennis courts, ball diamonds, athletic fields and basketball courts. The SFRPD manages the Marina Yacht Harbor, Candlestick Park, the San Francisco Zoo, and the Lake Merced complex. In total, the SFRPD currently owns and manages roughly 3,400 acres of parkland and open space. Together with other City properties and state and federal open space properties within the City, about 5,250 acres of recreational resources (consisting of a variety of parks, walkways, landscaped areas, recreational facilities, playing fields, and unmaintained open areas) serve San Francisco (SFPD, 2011).

Within San Francisco, publicly accessible open spaces and recreational facilities are categorized according to their size and particular amenities as serving the City, district, neighborhood, or sub-neighborhood (a smaller area within an established neighborhood). Several larger open space areas, including Golden Gate Park (1,017 acres), the Lake Merced complex (700 acres; including the 368-acre lake) and John McLaren Park (317 acres) comprise about one half of the total City-owned acreage in recreational use. Unlike neighborhood facilities, these larger facilities provide programs, activities and recreational opportunities that serve the City as a whole.

In addition to the larger open spaces, SFRPD land comprises more than 100 parks and recreational facilities (both outdoor and indoor), which function mainly for neighborhood use. These smaller facilities are primarily used by residents in the immediate surrounding area and are categorized by size and intended service area. District-serving parks are generally larger than 10 acres and have a service area consisting of a three-eighths-mile radius around the park, while neighborhood-serving parks are generally one to 10 acres and have a service area of one-quarter mile. Sub-neighborhood-serving open spaces, often referred to as mini parks, are too small to accommodate athletic facilities and have a service area of one-eighth of a mile.

4.13.1.3 National Parks

The Golden Gate National Recreation Area (GGNRA) includes over 80,000 acres and more than two dozen natural, historic, and cultural sites interspersed throughout the San Francisco and Bay Area from northern San Mateo County to southern Marin County and parts of San Francisco. The GGNRA includes Muir Woods National Monument, Alcatraz, the Presidio of San Francisco, and the Marin Headlands, among other sites.

4.13.2 Regulatory Considerations

4.13.2.1 UCSF Physical Design Framework

The UCSF *Physical Design Framework* describes the vision for the physical development of UCSF campus sites, serving as the foundation for the planning and designing of future projects. The *Physical Design Framework* includes a goal to expand the open space network at the Parnassus Heights campus site by renovating Saunders Court, creating new open spaces and

accommodating a wider variety of activities. For the Mission Bay campus site, the framework includes goals to complete the Open Space Network, and enhance the Campus Core (Koret Quad).

4.13.2.2 Mission Bay Campus Master Plan and Design Guidelines

The Mission Bay Campus Master Plan and Design Guidelines provides the framework for the development of the UCSF Mission Bay campus site, including 160,000 gsf of support space allocated to outdoor recreation, fitness, childcare and food services.

4.13.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

4.13.4 Analysis Methodology

This analysis focuses on (1) how the implementation of the 2014 LRDP would affect the demand for regional and City parks and recreational facilities in the vicinity of the LRDP planning area, and (2) the impacts of construction of recreational facilities under the proposed 2014 LRDP. Consideration is given to whether the 2014 LRDP includes features that would reduce the demand for off-site recreation and park services (e.g., on-site recreation facilities or land dedication).

4.13.4.1 Assessment of Impacts to Existing On-Campus Recreation Facilities

The analyses of general impacts to on-campus recreation are based on a programmatic, qualitative analysis of whether the 2014 LRDP continues to address maintenance and expansion of such resources. The severity of impacts to recreational facilities is addressed using measurements such as population increase and condition.

4.13.4.2 Assessment of Impacts to Existing Off-Campus Recreation Facilities

Direct impacts resulting from population growth on campus sites with housing (i.e., Parnassus Heights and Mission Bay) would primarily affect campus facilities and adjacent recreation facilities. However, induced growth associated with the 2014 LRDP may result in impacts to surrounding communities and their recreation facilities. Analysis of recreation effects primarily considers such factors as park accessibility, location, maintenance, capacity, and usability.

4.13.4.3 Assessment of Impacts of Proposed Recreational Facilities

The analysis considers the environmental impacts of construction of the recreational facilities proposed by the 2014 LRDP. Impacts of constructing these facilities and, as needed, mitigation measures and other regulatory requirements, are discussed below as well as in other chapters of this EIR as listed in the impact analyses for each campus site.

4.13.5 References

San Francisco Planning Department (SFPD), *Draft Update of the Recreation and Open Space Element*, November 2013. Available online at: http://openspace.sfplanning.org/docs/Recreation_and_Open_Space_Element_NOVEMBER_2013.pdf, accessed on February 5, 2014.

4.14 Transportation and Traffic

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Transportation and Traffic impacts. 2014 LRDP Transportation and Traffic effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Transportation and Traffic effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.14.1 Regional Setting

4.14.1.1 Regional Roadway Network

Regional roadway access to the UCSF campus sites is provided by several major regional freeways and roadways, as discussed below.

Interstate 80 (I-80) is located approximately three miles east of the Parnassus Heights campus site, about one mile northwest of the Mission Bay campus site, about two mile southeast of the Mount Zion campus site, and about half a mile northeast of the Mission Center campus site. I-80 connects San Francisco to the East Bay and other points to the east of the City via the San Francisco-Oakland Bay Bridge.

U.S. Highway 101 (U.S. 101) is located approximately two miles east of the Parnassus Heights campus site, about one mile west of the Mission Bay campus site, about one mile east of the Mount Zion campus site, and one block north of the Mission Center campus site. U.S. 101 connects San Francisco with the Peninsula and the South Bay to the south, and with the North Bay to the north via the Golden Gate Bridge. U.S. 101 connects to I-80 north/northeast of the Mission Bay campus site. Within the northern part of San Francisco, U.S. 101 operates on surface streets (i.e., Van Ness Avenue and Lombard Street).

State Highway 1 (19th Avenue) is located approximately one mile west of the Parnassus Heights campus site, connecting San Francisco to the North Bay via the Golden Gate Bridge and to the South Bay via a connection to I-280 south of the Parnassus Heights campus site. Within the study area, 19th Avenue has six lanes, with left turns prohibited at most intersections.

Interstate 280 (I-280) is located adjacent to the Mission Bay campus site to the west and connects San Francisco to the South Bay. I-280 connects to U.S. 101 south of the Mission Bay campus site. Access to I-280 is provided at the on-and off-ramps at Mariposa and Eighteenth streets.

4.14.1.2 Regional Transit Service

Golden Gate Transit. The Golden Gate Bridge, Highway, and Transportation District operates Golden Gate Transit (GGT), which provides bus and ferry service between the North Bay (Marin and Sonoma counties) and San Francisco. GGT operates 22 commuter bus routes, nine basic bus routes, and 16 ferry feeder bus routes into San Francisco. Bus routes operate at headways of 15 to 90 minutes depending on time and day of week and bus type. Golden Gate Transit also operates ferry service between the North Bay and San Francisco, connecting Larkspur and Sausalito with the Ferry Building during the morning and evening commute periods. Golden Gate Transit riders would need to transfer to Muni to access the Parnassus Heights, Mission Bay, Mount Zion, or Mission Center campus sites.

Alameda-Contra Costa County Transit District (AC Transit). AC Transit operates bus service in western Alameda and Contra Costa Counties, as well as routes to the City of San Francisco and San Mateo County. AC Transit operates 33 "Transbay" bus routes between the East Bay and the Temporary Transbay Terminal, temporarily located at Howard Street and Beale Street. The Temporary Transbay Terminal is accessible from the Parnassus Heights campus site via Muni. The majority of Transbay service is provided only during commute periods in the peak direction of travel, with headways between buses from 15 to 20 minutes. The peak direction of service is into San Francisco during the AM peak period and out of San Francisco during the PM peak period. All-day service is provided on a few lines, with headways of approximately 30 minutes. AC Transit riders need to transfer to Muni to access the Parnassus Heights, Mission Bay, Mount Zion, or Mission Center campus sites.

San Mateo County Transit District (SamTrans). SamTrans operates bus and rail service in San Mateo County. A few SamTrans routes also serve the Temporary Transbay Terminal in downtown San Francisco, including Routes 292, 391, and 397. Route 292 makes San Francisco stops along Potrero Avenue and Mission Street throughout the day. AM peak hour headways are between 10 and 15 minutes, and PM peak hour headways are 20 minutes. Routes 391 and 397 run along Mission Street in San Francisco but stop only at the Temporary Transbay Terminal. Route 391 operates only during the peak travel periods with 15 minute headways; Route 397 is a late night service route with headways of one hour. SamTrans riders need to transfer to Muni or UCSF shuttle to access the Parnassus Heights, Mission Bay, Mount Zion, or Mission Center campus sites.

Bay Area Rapid Transit (BART). BART provides regional commuter rail service between San Francisco and the East Bay (Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont), as well as between San Francisco and San Mateo County (SFO Airport and Millbrae). Weekday hours of operation are between 4 AM and midnight. During the weekday PM peak period, headways are 5 to 15 minutes along each line. Within San Francisco, BART operates underground along Market Street to Civic Center Station where it turns south through the Mission District towards Daly City. The closest BART station to the Parnassus Heights campus site is the Civic Center BART station, which is accessible via Muni or UCSF shuttle, as are the Mission Bay, Mount Zion, or Mission Center campus sites.

Caltrain. Caltrain provides passenger rail service on the Peninsula between San Francisco and Downtown San Jose with several stops in San Mateo County and Santa Clara County. Limited service is available south of San Jose. Caltrain service headways during the AM and PM peak periods are 10 to 60 minutes, depending on the type of train. The peak direction of service is southbound during the AM peak period and northbound during the PM peak period. Caltrain service terminates at the San Francisco Station at Fourth and King streets (Fourth/ King station). The Fourth/King station is served by local, limited, and express "Baby Bullet" trains that are accessible from the Parnassus Heights, Mission Bay, Mount Zion, or Mission Center campus sites via Muni or UCSF shuttle.

Caltrain is proposing to implement a Modernization Program that will electrify the railway to provide upgraded performance and allow more efficient operations and a higher capacity (scheduled to be complete by 2019). Currently, Caltrain crosses Sixteenth Street at-grade at the intersection of Sixteenth Street/Seventh Street/Mississippi Street. There are currently 10 trains per hour during peak periods, and the Modernization Program will allow the number of trains to increase to 12 trains per hour. Additionally, Caltrain is anticipating a "blended system", with California High Speed Rail trains running alongside Caltrain on the same tracks. The blended system may require a grade separation at Sixteenth/Seventh/Mississippi streets. Electrification of Caltrain (and the associated improved travel times and frequencies), as well as the introduction of High Speed Rail, may improve transit access for the Mission Bay campus site.

4.14.1.3 UCSF Transportation Demand Management Plan (TDM)

There are many different factors that determine how people travel to/from work, including home location, work shifts, access to transit, and travel incentives and disincentives (e.g., how convenient or costly it is to park). A TDM program is a set of policies and programs that include incentives, information, and education to encourage employees to commute to work by modes other than driving alone. The UCSF TDM program includes strategies that emphasize alternative commuting options, such as public transit, private shuttle service, biking, walking, and carpooling. The key elements of the UCSF TDM program are summarized in **Table 4.14-1**.

4.14.1.4 UCSF Shuttle System

The core element of UCSF's TDM plan is the shuttle service that UCSF operates throughout San Francisco. The shuttle system fleet (currently 60 shuttles) provides service between transit facilities, remote parking lots, the various UCSF campus sites, and UCSF-affiliated hospitals / medical centers within the City. The primary shuttle routes serve the Parnassus Heights, Mission Bay, Mission Center, San Francisco General Hospital, Mount Zion and Laurel Heights campus sites. Service includes 13 fixed-route lines and two on-demand evening services. Fixed-route shuttle headways are generally between 15 to 25 minutes, and most routes operate between 6:00 AM and 9:00 PM, Monday through Friday. The two on-demand services operate both weekday and weekend nights. Riders can request on-demand service within a pre-defined border around the Parnassus Heights and Mission Bay campus sites by calling UCPD dispatch. All shuttle buses are equipped with bike racks, and many are equipped with WiFi. The service is free for UCSF faculty, staff, students, patients, and visitors.

TABLE 4.14-1
EXISTING UCSF TDM PROGRAM ELEMENTS

TDM Strategy	Description
Annual Transportation Survey	Annual employee and student survey to learn more about travel to, from, and within UCSF campus sites
Bicycle Racks	Total of approximately 970 bike stalls distributed throughout campus sites with capacity exceeding demand, with one exception – Parnassus Heights campus site
Showers and Lockers	Showers and lockers are provided at various campus sites, which can be used by bicyclists
Bicycle Permits	Free bicycle permits are provided, allowing free access to enclosed bicycle parking facilities; free tire repair kits; bike fix-it stations available at Parnassus and Mission Bay campus sites; discounted SF Bike Coalition membership.
Shuttle	UCSF shuttle system serving all main campus sites
Priced Permit Parking	UCSF offers over 30 varieties of parking permits to employees, students and departments. The price of individual permits range from $20 to $161 per month. Departmental permits are $266 per month. A limited number of permits are issued per year and are distributed based on a prioritization hierarchy
Priced Visitor Parking	UCSF offers short-term visitor parking. Both hourly and daily rates are available
City Carshare	UCSF staff and students qualify for personal memberships at a discounted rate; 18 City Carshare vehicles are available at various campus sites.
Pre-Tax Program	The Pre-Tax program allows employees to reduce their public transit and non-UCSF vanpool costs by about one-third. The program works by allowing participants to deduct up to $125 per month from their paycheck without paying payroll taxes on this income
Carpool Parking	Preferential parking for UCSF employees with a valid carpool permit
Zimride	UCSF-specific Zimride (ride sharing) website
Emergency Ride Home	Employees who need an emergency ride home can be reimbursed up to $50 for a transit, taxi or rental car trip
Telecommuting Policy	Determined by job position/requirements and Department
Vanpool Program	The vanpool program requires a minimum of eight participants per vanpool. The driver participates for free and the riders pay about $240 per month per person, Currently, there are 33 vanpools that travel throughout the Bay Area, and as far as Sacramento.

SOURCE: UCSF Staff, 2013

The seated per-vehicle capacity of the shuttle buses (Blue, Tan, Black, Purple, Green, Pink, Bronze, Yellow, Lime, Red, Grey, Gold and VA lines) varies from 22 to 33 persons. The capacity utilization of the shuttle program is as follows: four lines (Grey, Blue, Gold, and Black) operate above 100 percent capacity during the AM peak period, the Tan line operates above 100 percent capacity in the midday period, and five lines (Bronze, Tan, Gold, Grey, and Black) operate above 100 percent capacity during the PM peak period. Of these instances, the highest ridership was found on the Grey and Blue lines in the AM peak period, and the Yellow and Tan lines in the PM peak period, where capacity utilization is above 120 percent for one or more hours. The following UCSF shuttle lines operate below 50 percent capacity during part or all of the day:

- Lime line during all times but the PM peak;
- Black, Gold, and Tan lines during the evening;
- Grey line midday; and
- Purple line during all times.

4.14.2 Regulatory Considerations

UCSF is situated on land that is owned or controlled by the Regents of the University of California. As such, UCSF generally is exempted by the federal and state constitutions from compliance with local land use regulations, including general plans and zoning. Specifically, transportation improvements or modifications required to mitigate impacts of the 2014 LRDP to roadways under the authority of the City of San Francisco would be responsibility of the City, and would need to be approved by the applicable City agencies. However, as stated in Section 3.4.1.1, it is a LRDP objective that UCSF consults and coordinates on a regular basis with the City (e.g., the Planning Department, Municipal Transportation Agency, Department of Public Works, and Office of Community Investment and Infrastructure) when planning new development, especially if improvements are being proposed within City rights-of-way adjacent to campus sites.

4.14.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Result in inadequate emergency access?

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

g) Exceed the applicable LRDP EIR standard of significance by causing substantial conflict among autos, bicyclists, pedestrians, and transit vehicles?

Regarding criterion c), after evaluation of the activities proposed by the 2014 LRDP, the Initial Study concluded that 2014 LRDP activities would clearly result in no impact or a less-than-significant impact at all campus sites. Therefore, this criterion is not discussed further in the EIR.

4.14.3.1 Analysis Methodology

Below is a list of thresholds of significance used by UCSF to assess whether the 2014 LRDP would result in significant impacts to the transportation network.

Traffic

Signalized Intersections – a significant impact would occur if:

- LRDP traffic causes intersection LOS D or better to deteriorate to LOS E or F.
- LRDP traffic causes intersection LOS E to deteriorate to LOS F.
- LRDP increases traffic by five percent on critical movements operating at LOS E or F of an intersection operating at LOS E or F under Existing conditions.

Unsignalized Intersections – a significant impact would occur if:

- LRDP traffic causes the LOS at the worst approach to deteriorate from LOS D or better to LOS E or F and Caltrans signal warrants would be met.
- LRDP traffic causes Caltrans signal warrants to be met when the worst approach is already operating at LOS E or F.
- LRDP adds traffic to an intersection that operates at LOS E or F under Existing conditions and makes a considerable contribution (five percent on critical approaches operating at LOS E or F) to the worsening of the average delay per vehicle and Caltrans signal warrants would be met.

Cumulative – a significant impact would occur if:

- LRDP would make a considerable contribution to the deterioration of intersection conditions (LOS E or F) if LRDP-generated traffic contributes five percent or more to the critical movements operating at LOS E or F under cumulative conditions.

Transit

The LRDP would have a significant effect on the environment if project demand for public transit causes the need for development or expansion of mass transit facilities, the development of which would cause significant environmental impacts.

Pedestrians and Bicycles

The LRDP would have a significant effect on the environment if it would cause a substantial conflict among autos, bicyclists, pedestrians, and transit vehicles.

Loading

The LRDP would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, or if it created

potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians.

Parking

LRDP-generated parking demand that is not met by the project is not considered significant.

Construction

Construction-related impacts generally would not be considered significant due to their temporary and limited duration.

4.15 Utilities and Service Systems

This section presents the Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for the evaluation of Utilities and Service System impacts. 2014 LRDP Utilities and Service System effects are discussed in Chapter 5, *2014 LRDP –Impacts and Mitigation Measures.* Utilities and Service System effects resulting from 2014 LRDP proposals at each of the four affected campus sites are discussed in Chapter 6, *Parnassus Heights – Impacts and Mitigation Measures,* Chapter 7, *Mission Bay – Impacts and Mitigation Measures*, Chapter 8, *Mount Zion – Impacts and Mitigation Measures* and Chapter 9, *Mission Center – Impacts and Mitigation Measures*.

4.15.1 Regional Setting

4.15.1.1 Water Supply and Infrastructure

Existing and Planned Future Water Supply

The San Francisco Public Utilities Commission (SFPUC) provides regional water services to approximately 2.6 million people in San Francisco, Santa Clara, Alameda, San Mateo, and Tuolumne Counties, including all of the City and County of San Francisco. About 85% of the water delivered to SFPUC customers comes from Tuolumne River water stored in Hetch Hetchy Reservoir in the Sierra Nevada, and the remaining 15% comes from runoff in the Alameda and Peninsula watersheds captured in reservoirs located in San Mateo and Alameda Counties, supplemented with local groundwater and recycled water. The regional water system conveys Tuolumne River water to the Bay Area and blends it with local runoff before supplying its customers with potable water. The system includes over 280 miles of pipelines, over 60 miles of tunnels, 11 reservoirs, 5 pump stations, and 2 water treatment plants, and currently delivers a total of approximately 219 million gallons of water per day (mgd) to its customers (SFPUC, 2013).

The SFPUC serves water to both retail and wholesale customers, with about one third of its water supplies for retail customers (primarily located in San Francisco), including the 2014 LRDP area.[47] Retail customers include the residents, businesses, and industries within the City as well as other customers such as the Town of Sunol, San Francisco International Airport, and the Lawrence Livermore National Laboratory, among others. Within the City, the SFPUC provides distribution and storage for water and fire protection for the local water system; this system includes 10 reservoirs, 8 water tanks, 17 pump stations, and approximately 1,250 miles of transmission lines and water mains. For its retail customers, the SFPUC supplements its supplies from the regional water system, which provides more than 97% of the supply, with a small portion of local groundwater and recycled water (less than 3%). In 2010, available supply for retail customers, including in-City users, was 83.2 mgd (SFPUC, 2010).

[47] In addition to retail demand, the SFPUC provides water to 27 wholesale customers in San Mateo, Alameda, and Santa Clara Counties by contractual agreement. The wholesale customers receive about two-thirds of the SFPUC's regional water system supply. Under the 2009 Water Supply Agreement among the SFPUC and wholesale customers, wholesale customers are assured 184 mgd of supply and retail customers are assured 81 mgd of supply through 2018 during normal hydrologic years. As reported in the SFPUC's 2010 *Urban Water Management Plan*, wholesale customers used about 149.5 mgd in 2010.

In 2008, the SFPUC adopted the Water System Improvement Program (WSIP), a multi-billion dollar capital program, to improve and enhance water quality, seismic reliability, delivery reliability, and water supply of the regional water system. Since then, the SFPUC has been implementing numerous WSIP projects—which are now in various stages, ranging from planning and construction to fully operational facilities—and moving towards achieving the WSIP objectives. Included in the WSIP projects are local water supply projects to diversify the retail water supply sources to meet the future water needs of its retail customers.

The SFPUC plans to augment local supplies for its retail customers by extracting up to 4 mgd of groundwater from new wells in the Westside Groundwater Basin located on the west side of the City; this project is anticipated to provide an additional 1 mgd of water supply upon initial startup in mid-2016, up to 3 mgd during Phase 1, and up to 4 mgd total by the end of Phase 2. In addition, the SFPUC has plans to provide an additional 4.0 mgd of recycled water through the Westside and Eastside Recycled Water Projects, primarily for landscape irrigation, toilet flushing and industrial uses, which in turn would increase the availability of potable water for retail customers. With implementation of these projects, total retail supply is anticipated to be 83.5 mgd in 2015 and to increase to 90.3 mgd by 2035 during normal hydrologic years (SFPUC, 2013).

Dry Year Water Supplies

The above water supply estimates are based on typical years with normal (i.e., average or above average) precipitation. However, in any given year, the amount of water available to the SFPUC is constrained by hydrology, physical facilities, and institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is dependent on local reservoir storage to maximize the reliability of its water supplies, particularly during dry years, when stored water from wet years can be used (SFPUC, 2011). Local water supply sources, including local groundwater and recycled water, are very important during dry years.

During a prolonged drought, the water supplies from the regional water system would be curtailed, and the SFPUC has adopted a Water Shortage Allocation Plan that outlines procedures for allocating water from the regional system among its retail and wholesale customers. The allocation methodology depends on the extent and duration of the shortage. **Table 4.15-1** summarizes the existing and future SFPUC retail water supplies during normal and representative dry years.

TABLE 4.15-1
EXISTING AND PLANNED FUTURE SFPUC RETAIL WATER SUPPLIES
(million gallons per day)

Hydrologic Year Type	2010	2015	2035
Normal Year, existing sources	83.2	83.5	83.5
Normal Year, existing + planned future sources	83.2	83.5	90.3
Years 2 and 3 of Multiple Dry Years	--	82.0	88.8

SOURCE: SFPUC, 2013

Existing and Projected Water Demand

Water use within San Francisco is currently below historical consumption levels, and both total consumption and per capita water use have generally been declining since the mid-1970s. In 2012, SFPUC retail water use was 77.8 mgd, comprised of 72.8 mgd of in-City retail use and 5.0 mgd of suburban retail use (SFPUC, 2013).

In summer 2012, the San Francisco Planning Department updated its Land Use Allocation (LUA) for the Association of Bay Area Governments (ABAG) Sustainable Community Strategy Jobs-Housing Connections Scenario. The revised LUA projects an additional 11,235 dwelling units and 35,068 jobs in 2035 over the previous LUA projections from 2009 considered in the SFPUC's *2010 Urban Water Management Plan* (UWMP). The SFPUC thus concluded that its 2010 UWMP did not account for every project requiring a water assessment within San Francisco. Therefore, this EIR does not rely on the 2010 UWMP for determining impacts on the water supply system, but rather uses updated information developed by the SFPUC in 2013.

Because the SFPUC will not be preparing an update to the UWMP until 2015, the SFPUC developed a Water Availability Study (WAS) during the interim period to document current and projected water supplies compared to projected demands associated with this updated growth projection. As a result of the updated growth projections discussed in the WAS, the SFPUC anticipates total retail demand to increase to 83.7 mgd in 2015 and 84.2 mgd in 2035 (SFPUC, 2013).

Table 4.15-2 summarizes the existing and projected future water SFPUC retail customer water demands and shows the breakdown of in-City and suburban customer demands.

TABLE 4.15-2
EXISTING AND PROJECTED FUTURE SFPUC RETAIL WATER DEMANDS
(million gallons per day)

Retail Customer	2012	2015	2035
In-City (in San Francisco)	72.8	78.1	78.6
Suburban (outside San Francisco)	5.0	5.6	5.6
Total Retail Demand	77.8	83.7	84.2

SOURCE: SFPUC, 2011 and 2013

According to the recently published UCSF *2014 Water Action Plan*, the average water demand for UCSF during the three-year period of 2007 to 2010 was 226,024,565 gallons per year (excluding the UCSF Medical Center). The Parnassus Heights and Mission Bay campus sites consumed about 119 million gallons and 66 million gallons per year during this three-year period, respectively (UCSF, 2014).

Water Supply and Demand Comparison

As described above, in 2010, available water supply for SFPUC retail customers was 83.2 mgd, which is more than enough to meet the 2012 demand of 77.8 mgd.

In 2015, the SFPUC estimates water supplies for retail customers of 83.5 mgd in a normal hydrologic year, and a retail demand of 83.7 mgd; this indicates a deficit of about 0.2 mgd for that year. By 2035, however, the SFPUC anticipates that there will be 90.3 mgd of water supply available to retail customers from existing and planned future water sources; this would more than meet the estimated 84.2 mgd of water demand (SFPUC, 2013).

According to the WAS, the SFPUC can meet the future demands of its retail customers in normal years, single dry years, and multiple dry year events, with the exception of 2015, which is prior to full implementation of new supplies under the WSIP. The deficit for 2015 in a normal year represents less than a 0.25% shortfall, and during a multiple dry year event represents a 2.0% shortfall; these small percentage shortfalls can generally be managed through voluntary conservation measures or, if necessary, rationing. However, based on current trends of decreasing retail demand—as evidenced by the 2011–2012 demand of 77.8 mgd — the projected 2015 demand may be overly conservative (that is, actual demand may be lower than projected). Regardless, between now and 2015, the SFPUC has procedures in place to meet retail customer water demands over a range of hydrologic conditions, and, if determined to be necessary, the SFPUC could impose delivery reductions or rationing, or it could purchase additional water from the regional water system.

4.15.1.2 Wastewater Collection and Treatment / Stormwater

The SFPUC maintains and operates a combined sewer system (CSS) that serves most of San Francisco, including all UCSF sites. This system collects stormwater runoff and wastewater flows in the same network of pipes. It conveys flows to facilities where they are treated prior to discharge through outfalls into the Bay or Pacific Ocean. The Mission Bay area, including the Mission Bay campus site, was formerly connected to the CSS. This system was separated in 2011 and stormwater flows are now discharged to San Francisco Bay. Discharges are regulated under National Pollutant Discharge Elimination System (NPDES) permits from the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region.

The collection system consists of about 976 miles of underground pipes throughout the City, which is divided into an eastern and western basin. In the eastern basin, average dry weather flows of 63 mgd are directed to the Southeast Water Pollution Control Plant (SEWPCP) located on Phelps Street, south of Islais Creek on the eastern waterfront. The SEWPCP receives flows from the Mission Bay, Mount Zion and Mission Center campus sites and about half of the stormwater from the Parnassus Heights campus site. Sewage flows from the Parnassus Heights campus site are directed to the Oceanside Water Pollution Control Plant (OWPCP) east of the Great Highway near the San Francisco Zoo. The SEWPCP has a dry weather capacity of 84.5 mgd, and all dry weather flows receive secondary treatment before being discharged to San Francisco Bay through the Pier 80 outfall, which has a capacity of 110 mgd. Flows from the western basin are directed to the OWPCP and discharged by gravity approximately four miles offshore in the Pacific Ocean. During wet weather the OWPCP provides primary treatment for flows up to 65 mgd and secondary treatment to a maximum flow rate of 43 mgd (SFPUC, 2010).

During wet weather, up to 150 mgd of wet weather flows receive secondary treatment at the SEWPCP. The SEWPCP can also treat up to an additional 100 mgd to a primary treatment standard plus disinfection. Up to an additional 150 mgd of wet weather flows receive primary treatment plus disinfection at the North Point Wet Weather Facility, located on the north side of the City at 111 Bay Street, which operates only during wet weather. Treated effluent from this facility is discharged through four deep water outfalls, approximately 800 feet from the bay shoreline. Two of the deep water outfalls terminate at the end of Pier 33 and two terminate at the end of Pier 35 on the northeastern Bay shore.

The CSS includes storage and transport boxes that, during wet weather, retain the combined stormwater and sewage flows that exceed the capacities of the SEWPCP and the North Point Wet Weather Facility for later treatment. The transport boxes connect to 29 combined sewer outfalls to the Bay. When rainfall intensity results in combined flows that exceed the total capacity of the SEWPCP, the North Point Wet Weather Facility, and the storage and transport structures, the excess flows are discharged through the combined sewer discharge structures in compliance with NPDES permits. Citywide, discharges from these discharge structures receive "flow-through treatment," which is similar to primary treatment, to remove settleable solids and floatable materials. Wet weather flows are intermittent throughout the rainy season, and combined sewer overflow events vary in nature and duration depending largely on the intensity of individual rainstorms.

4.15.1.3 Solid Waste Collection and Disposal

According to the California Integrated Waste Management Act of 1989 (AB 939), San Francisco is required to adopt an integrated waste management plan, implement a program to reduce the amount of waste disposed, and have its waste diversion performance periodically reviewed by the California Department of Resources Recycling and Recovery (CalRecycle). In 2012, San Francisco sent approximately 455,000 tons of solid waste to landfills, up from 447,000 tons in 2011 (CalRecycle, 2014). San Francisco diverted more than 80% of waste material from landfill disposal in 2011 through recycling, composting, and reuse (CCSF, 2012).

Beginning with the 2007 jurisdiction annual reports, diversion rates were no longer used to measure compliance with AB 939. With the passage of SB 1016 in 2006 (the Per Capita Disposal Measurement System), per capita disposal rates are instead measured to determine if a jurisdiction's efforts are meeting the intent of AB 939. The City's per resident disposal target rate is 6.6 pounds per person per day (PPD), and its per employee disposal target rate is 10.6 PPD. In 2012, which is the most recent date for which data are available, the measured disposal rate was 2.9 PPD for residents and 4.2 PPD for employees, thereby meeting the City's target rates (CalRecycle, 2014).

More than 80% of solid waste generated in San Francisco is transported to the Altamont Landfill in Alameda County. The Altamont Landfill has a permitted peak maximum daily disposal of 11,150 tons per day and accepted 1.06 million tons in 2009, down from 1.31 million tons in 2005. The landfill has an estimated remaining capacity of approximately 46 million cubic yards or 74% of its permitted capacity. The estimated closure date of the landfill is 2025 (CalRecycle, 2014).

In 1988, San Francisco contracted for the disposal of 15 million tons of solid waste at the Altamont Landfill. The City contract with the Altamont Landfill expires in 2015. Through August 1, 2009, the City had used approximately 12.5 million tons of this contract capacity. The City projects that the remaining contract capacity will be reached no sooner than August 2014. In 2009, the City announced that it could award its landfill disposal contract to a Recology subsidiary for shipment of solid waste by truck and rail to the Recology Ostrom Road Landfill in Yuba County. This facility has an expected closure date of 2066 with a total design capacity of over 41 million cubic yards. The City is also considering the Recology Hay Road Landfill in Solano County as a disposal site and is currently conducting environmental review of this location. The ultimate determination with respect to future landfill contracting will be made by the Board of Supervisors on the basis of solid waste planning efforts being undertaken by the City's Department of the Environment.[48]

UCSF Facilities Management is responsible for implementing the UC *Policy on Sustainable Practices* solid waste goal of zero waste by 2020 (not including waste from the Medical Center). In 2012, the diversion rate was 63%.

4.15.1.4 Electricity and Natural Gas

Electrical and natural gas service is provided to northern and central California, including San Francisco, by Pacific Gas and Electric Company (PG&E). In 2012-2013, UCSF purchased 6,871,248 therms of natural gas from PG&E and used 41,560,148 kilowatt hours of electricity.

The majority (67%) of UCSF's 2008 electricity purchases from the state grid came from PG&E. The 2008 PG&E power mix consisted of non-emitting nuclear generation (22%), large hydroelectric facilities (16%) and renewable resources (14%), such as wind, geothermal, biomass and small hydro. The remaining portion came from natural gas (39%), coal (8%), and other fossil-based resources (1%).

The remainder of UCSF's electricity purchases come from a UC system-wide direct access supplier, currently Sempra Energy, and the Western Area Power Administration (WAPA)[49]. In order to "green" the direct access supply of electricity, UCSF along with the other UC campuses served under the direct access contract have purchased renewable energy certificates equal to approximately 18% of the direct access electricity supply. These certificates guarantee that renewable energy equal to 18% of the direct access load is placed on the grid on behalf of the Universities (UCSF, 2009).

[48] San Francisco is currently participating as a responsible agency in the environmental review process that Yuba County has begun for the Recology Ostrom Road Green Rail and Permit Amendment Project and to conduct CEQA review of San Francisco's proposal to enter into one or more new agreements with Recology. On March 28, 2013, Yuba County and San Francisco entered into a Cooperative Agreement to designate Yuba County as the lead agency for this project and to outline their cooperative efforts concerning environmental review.

[49] While WAPA does not provide a generation source breakdown to specific users, its primary supply is from hydropower (approximately 90%). http://ww2.wapa.gov/sites/western/Pages/default.aspx

The Parnassus Heights campus site has a central utility plant (PCUP) which serves the campus site buildings, including three Medical Center buildings: Moffitt Hospital, Long Hospital and the Ambulatory Care Center. The plant includes a cogeneration system which provides electricity to the whole Parnassus Heights campus site. The PCUP also produces steam, which is distributed throughout the campus site, and chilled water, which is distributed to University buildings on the south side of Parnassus Avenue. The cogeneration system comprises two combustion turbines burning natural gas and nominally generating 5 megawatts each.

The Mission Bay campus site has a central utility plant on Block 16 that serves four research buildings through a steam / chilled water distribution system. The Mount Zion campus site has a central boiler plant that serves five hospital buildings on the main block.

4.15.2 Regulatory Considerations

Urban Water Management Plan

In 1983, the California Legislature enacted the Urban Water Management Planning Act (California Water Code Sections 10610 through 10656). The act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure reliable water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The act describes the contents of the Urban Water Management Plan as well as how urban water suppliers should adopt and implement the plans. The plan must be updated at least every five years on or before December 31 in years ending in five and zero. The provisions of the Urban Water Management Plan for the SFPUC are described above.

Water Supply Assessment

The State of California adopted Senate Bill 610 (SB 610) effective January 1, 2002. SB 610 requires cities and counties, when evaluating large development and redevelopment projects, to request an assessment of the availability of water supplies from the water supply entity that will provide water to a project. The Water Supply Assessment (WSA) is performed in conjunction with the land use approval process associated with a project and must include an evaluation of the sufficiency of the water supplies available to the water supplier to meet existing and future demands, including the demand for a project over a 20-year time period that includes normal, single-dry, and multiple dry years.

When a new development project is accounted for in the demand projections of an UWMP, the WSA can refer to the UWMP and no further analysis is necessary. As described in Section 4.15.1, above, the SFPUC allows for all development projects requiring a WSA under SB 610 to rely solely on the SFPUC's adopted UWMP without having to prepare individual WSAs. However, because the SFPUC will not be preparing an update to the UWMP until 2015, a Water Availability Study was prepared by the SFPUC during the interim period. This study documented current and projected water supplies compared to projected demands associated with growth not covered in the UWMP in order to satisfy the requirement for the preparation of a WSA.

Water Code Section 10910 and 14 CCR 15155 (entitled "City or County Consultation with Water Agencies") apply only to cities and counties. Water Code Section 10910(a) states: "Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part." Although these requirements do not specifically apply to UCSF, or the University of California, UCSF voluntarily requested a WSA be prepared following the requirements of SB 610 for informational purposes for the net new development proposed under the 2014 LRDP.

RWQCB Permits

The Porter-Cologne Water Quality Control Act authorizes the SWRCB, which, in turn, delegated certain authority to the several Regional Water Quality Control Boards (RWQCB) to issue and enforce NPDES permits. In addition, the SWRCB develops water quality standards and performs other functions to protect California's waters. The RWQCBs, pursuant to their delegated powers, carry out the SWRCB regulations and standards as well as issue and enforce permits. In 2003, the SWRCB adopted the General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer System (MS4s). A revised permit applying to the MS4 at UCSF was adopted in 2013 and requires UCSF to develop, implement and enforce a Storm Water Management Plan/Program (SWMP) by July 2016. See Section 4.8, *Hydrology and Water Quality*, for further discussion of NPDES permits.

Assembly Bill 939 and Senate Bill 1016

The California Integrated Waste Management Act of 1989, or Assembly Bill 939, established the Integrated Waste Management Board, required the implementation of integrated waste management plans, and mandated that local jurisdictions divert at least 50% of all solid waste generated (from 1990 levels), beginning January 1, 2000, and divert at least 75% by 2010. Projects that would have an adverse effect on waste diversion goals are required to include waste diversion mitigation measures to assist in reducing these impacts to less-than-significant levels. With the passage of Senate Bill 1016 (the Per Capita Disposal Measurement System) in 2006, only per capita disposal rates are measured to determine if a jurisdiction's efforts are meeting the intent of Assembly Bill 939.

UCSF Water Conservation Plan

The UCSF 2014 Water Action Plan (WAP) is the blueprint for reaching a per capita 20% reduction in water consumption by 2020. The WAP fulfills the UC *Policy on Sustainable Practices* requirement regarding Sustainable Water Systems and outlines the path to achieving UCSF's contribution to UC President Janet Napolitano's goal to reduce per capita water use by 20% throughout the UC system by 2020. UCSF has made substantial progress towards reaching its goals having reduced per capita consumption 4.4% by the end of fiscal year 2012-2013. Initial projects that contributed to this reduction include the recycling of condensed steam and recycling excess filtered water from laboratories. Additional projects that UCSF is implementing include replacing older and wasteful restroom fixtures with high and ultra-high efficiency fixtures;

retrofitting or replacing water consuming equipment such as walk-in boxes, sterilizers, and autoclaves; eliminating once-through cooling devices; reducing continuous flow; and addressing leaks (UCSF, 2014).

On January 17, 2014 the Governor announced an emergency drought declaration for the State and asked each State agency to reduce their water consumption by 20% over the next year. In response to the declaration and the Governor's Office request for the University to take immediate actions, President Napolitano presented the UC Chancellors with drought response measures to reduce short-term water consumption to the extent possible on their respective campuses (UCOP, 2014). In response to the President's letter, UCSF has committed to the following strategic actions to reduce water use:

- Accelerate and expand leak detection program and/or install "report a leak" stickers to engage the campus community.
- Reduce research/agricultural water consumption.
- Implement an education outreach water conservation campaign targeting office, laboratories, and student housing.
- Provide incentives for paying customers that reduce water and fee hikes for users that do not.
- Prioritize energy efficiency retrofit and deferred maintenance projects that also result in water savings.
- Incorporate water-saving guidelines for new facilities into the Campus Standards and Design Guide. (UCSF, 2014)

4.15.3 Significance Standards

Would implementation of the proposed 2014 LRDP:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?

h) Result in the wasteful, inefficient and unnecessary consumption of energy (see CEQA Statutes Section 21100(b)(3))?

i) Exceed the LRDP EIR standard of significance by requiring or resulting in the construction of new electrical or natural gas facilities, which would cause significant environmental effects?

4.15.4 Analysis Methodology

The environmental impact analysis for utilities and service systems begins with an assessment of existing utility use and infrastructure services at the main UCSF campus sites. The projected demands for utilities and infrastructure services generated are then calculated and compared to existing usage to determine the net increase resulting from implementation of the 2014 LRDP. Typically, utility assessments focus on supply, treatment or generation capacity and distribution or collection infrastructure requirements. For each potential impact, the analysis compares the net increase resulting from implementation of the 2014 LRDP against the significance criteria set forth above. If the impact would be significant, the analysis identifies feasible mitigation measures that would eliminate the impact or reduce it to a less-than-significant level. If the impact cannot be reduced to a less-than-significant level after implementation of all feasible mitigation measures, then it would remain significant and unavoidable.

4.15.5 References

California Department of Resources Recycling and Recovery (CalRecycle), http://www.calrecycle.ca.gov/, accessed February 20, 2014.

City and County of San Francisco (CCSF), Press Release, "Mayor Lee Announces San Francisco Reaches 80 Percent Landfill Waste Diversion, Leads All Cities in North America," Office of the Mayor, October 5, 2012.

San Francisco Public Utilities Commission (SFPUC), *2013 Water Availability Study for the City and County of San Francisco*, May 2013.

SFPUC, *2010 Urban Water Management Plan for the City and County of San Francisco*, June 2011.

SFPUC, *Sewer System Improvement Program Report: Draft Report for SFPUC Commission Review*, prepared by Wastewater Enterprise Staff, August 10, 2010.

University Office of the President (UCOP), Letter to the Chancellors, March 21, 2014.

UCSF, *Climate Action Plan*, December 2009.

UCSF, *Water Action Plan*, 2014.

UCSF, Letter to UC San Francisco Community from Sam Hawgood, MBBS, Interim Chancellor and Dean, School of Medicine, 2014 (undated).

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CHAPTER 5
2014 LRDP – Impacts and Mitigation Measures

5.0 Components of the 2014 LRDP

5.0.1 Introduction

This LRDP EIR evaluates the environmental impacts of the proposed 2014 Long Range Development Plan of UCSF, which has been prepared to guide the physical development of the campus to accommodate increases in enrollment and academic and research activities at UCSF to meet the projected educational and research demand through the year 2035.

This chapter provides a program-level analysis of the proposed 2014 LRDP, evaluates the effects of maximum growth that could occur throughout all of the UCSF major campus sites under the proposed LRDP through 2035, and identifies the LRDP-level mitigation measures to reduce the potential significant effects from implementation of the 2014 LRDP.

In addition, this EIR also analyzes a number of specific development proposals at a program-level or at a project-level in Chapters 6, 7, 8 and 9. The analysis of these development proposals at the project-level is intended to provide sufficient detail to permit project approval and implementation following certification of the EIR. The program-level 2014 LRDP mitigation measures in this chapter also may be applicable to 2014 LRDP proposals at the campus sites.

The LRDP plans for projected campus growth of approximately 2.39 million gsf by 2035, to accommodate approximately an additional 600 students and 11,000 employees. Although it is not proposed as part of the 2014 LRDP, the EIR analysis assumes that the Phase 2 Medical Center at Mission Bay would be constructed during the LRDP horizon. Therefore, the projected campus growth analyzed in the EIR is 3.18 million gsf.

The EIR identifies and uses “standard” LRDP-level mitigation measures that apply to many (but not necessarily all) impacts of the proposed actions. This approach simplifies and shortens the presentation of impacts and mitigation measures in the four campus site chapters that follow. Some of these measures apply to all sites, while some are site-specific. Some apply to all projects and some must be customized for each project.

5.0.2 Major Components of the 2014 LRDP

5.0.2.1 Functional Zones

The LRDP contains land use maps, or "functional zone" maps for UCSF's three main campus sites: Parnassus Heights, Mission Bay and Mount Zion. The maps reflect the proposed geographical organization of the predominant land use functions at these campus sites, and they provide guidance for capital construction and infrastructure development to accommodate a building program for campus growth. The functional zones and their predominant and secondary uses are described in Table 3-1 in Chapter 3, *Project Description*. The functional zones are generally consistent with UCSF building space categories, except that Instruction space is distributed throughout the Research, Clinical and Support zones. There are also functional zones for Housing, Open Space and Parking (structured).

5.0.2.2 Space Program

The LRDP plans for projected campus growth of approximately 2.39 million gsf by 2035. Most of this space is allocated into the following major use categories: Instruction, Research, Clinical, Support and Housing.

5.0.2.3 Average Daily Population

The estimated UCSF average daily population across all campus sites, including patients and visitors, was approximately 39,420 in 2013. At LRDP horizon in 2035 (which includes the Phase 2 Medical Center at Mission Bay), total population is projected to reach approximately 56,420, an increase of about 17,000.

5.0.3 Other LRDP Programs and Policies

5.0.3.1 Greenhouse Gas Reduction Strategy

As part of implementing the UC *Policy on Sustainable Practices*, UCSF has developed a Climate Action Plan, a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the *California Global Warming Solutions Act of 2006* (AB 32). In addition, as part of the 2014 LRDP, UCSF proposes a Greenhouse Gas Reduction Strategy to provide streamlined analysis under CEQA for future development projects. The GHG Reduction Strategy, includes two categories of GHG reduction measures: those to which UCSF is currently committed to in terms of funding and/or implementation (called "Tier 1" measures), and those that are in the planning stages (called "Tier 2" measures). Tier 2 measures chiefly involve the expansion or intensification of the Tier 1 measures. The implementation of the GHG Reduction Strategy to a large degree involves improving the energy efficiency of existing buildings on UCSF campus sites and incorporating green building standards into the designs of future buildings. Renovations of existing buildings would likely be limited primarily to building interiors with no resulting adverse environmental effects. These types of activities would generally be considered to be part of normal, routine maintenance operations of the University and would not be subject to environmental review

under CEQA. The environmental effects of the construction of new buildings by UCSF during the 2014 LRDP planning horizon are analyzed in the relevant sections of this EIR. Incorporation of green building standards into the design of proposed buildings would have beneficial effects, such as reduced energy and water demand. The GHG Reduction Strategy also includes a proposed solar photovoltaic (PV) energy installation at the Mission Bay Hospital, as well as other PV projects at other undetermined UCSF locations. Because the design of this installation on the Mission Bay campus site has not been completed, the specific characteristics of this possible facility cannot be analyzed at this time. Subsequent CEQA review may be necessary once the design of this or any other PV facility become available. Other GHG reduction strategies include increasing the University's purchase of green electricity and biogas, reducing vehicle trips, and expanding the University's fleet of fuel-efficient and alternative-fuel vehicles. The physical effects of these measures are primarily limited to the land use decisions the University is making as part of the LRDP. These decisions include increasing on-site campus amenities (such as child care, food services, and recreation/fitness facilities) and housing for faculty and students in order to reduce vehicle trips. Any physical environmental effects resulting from the University's land use decisions and building program are analyzed in the applicable sections of this EIR.

5.0.3.2 Transportation Demand Management Program

To minimize traffic generated by UCSF current and planned facilities, UCSF proposes to implement more robust Transportation Demand Management (TDM) measures. These include enhancing the City CarShare and UCSF's carpool programs, expanding bicycle parking and access to showers and lockers, promoting ridesharing participation, and, with new campus development, enhancing the shuttle system. Similar to the GHG Reduction Strategy, the TDM Program could result in physical environmental effects across multiple campus sites. As with the GHG Reduction Strategy, these effects are analyzed in the appropriate sections of this EIR, primarily in Section 5.14, *Transportation and Traffic Impacts of the 2014 LRDP*.

5.0.4 Proposals under the 2014 LRDP

The 2014 LRDP is driven by the need to comply with the requirements of the *Alquist Seismic Safety Act* and subsequent amendments, the UC *Policy on Seismic Safety*, UC's *Policy on Sustainable Practices* and the 1976 Regents' Resolution regarding the Parnassus Heights campus site space ceiling, as well as a number of other state and local policies.

To support and achieve its missions, UCSF proposes to grow where growth can be reasonably accommodated at its currently owned sites: primarily at Mission Bay, to a limited extent at Mount Zion, and if needed, in a new building at Mission Center. While most of this growth is proposed to be accommodated in new buildings, a portion would be met through better utilization of existing space through implementation of a new UCSF-wide space policy, renovation of obsolete labs and repurposing of vacant and underutilized space. It is also envisioned that new space would be developed to accommodate a greater density of occupants than in the past for greater space efficiency and higher utilization.

A primary focus of the LRDP is to address Senate Bill 1953 (SB 1953), which mandates that all inpatient facilities in the State of California meet more stringent seismic regulations by 2030. The opening of the first phase of the Medical Center at Mission Bay in 2015 will provide opportunities at the Parnassus Heights and Mount Zion campus sites to re-occupy (or "backfill") space that will be vacated when programs and occupants relocate to the new Medical Center at Mission Bay. Many of the highly complex adult clinical programs will remain at Parnassus Heights. Mount Zion will be developed into an ambulatory care center and outpatient hub. Both the Parnassus Heights and Mission Bay campus sites will provide inpatient, outpatient, research and administrative functions, as well as campus housing. All four schools—Dentistry, Medicine, Nursing and Pharmacy, as well as the Graduate Division—will remain at the Parnassus Heights campus site. To meet the SB 1953 mandate at Parnassus Heights, UCSF proposes to decommission inpatient care in Moffitt Hospital by the 2030 SB 1953 deadline, build a new hospital addition to Long Hospital and reconfigure its inpatient and outpatient programs across the three major campus sites. To meet housing demand and reduce commute traffic, UCSF also proposes additional campus housing at the Parnassus Heights and Mission Bay campus sites where demand for housing is greatest. More housing at both campus sites would make it possible to realign students, postdoctoral scholars and faculty to live where they attend classes or work. Other campus facilities would be developed, including more child care space where it is most needed, indoor and outdoor recreation and fitness facilities, shuttle support facilities, retail and more and enhanced open space areas.

The LRDP sets overall guidelines for the facilities needed to serve the projected activities of UCSF through 2035. The 2014 LRDP proposes an additional 2.39 million gsf of space at LRDP horizon in 2035. Of this new space, roughly 1.5 million gsf would be built at the Mission Bay campus site. Thus, most of the potential environmental effects resulting from implementation of the 2014 LRDP would occur at the Mission Bay campus site.

The LRDP considers how the campus sites and buildings will be used, the amount of building space needed (in gsf), and the resulting populations at UCSF campus sites. Population campus-wide, including patients and visitors, is projected to be approximately 56,420 in 2035. Population is projected to increase by approximately 600 at the Parnassus Heights campus site, 1,600 at Mount Zion and 500 at Mission Center by 2035. The average daily population at the Mission Bay campus site would increase by about 17,000 at the LRDP horizon.

The LRDP, by assigning uses and a space program at each campus site, directs the growth and change that is projected to occur at each site during the lifetime of the LRDP. Specifically, the LRDP proposes that the major physical changes due to these programs would occur only at four campus sites: Parnassus Heights, Mission Bay, Mount Zion and Mission Center. These interrelated aspects of the LRDP will be implemented, in part, by undertaking a step-wise series of individual "proposals": 1) at Parnassus Heights to demolish buildings to reduce existing building space, to renovate two existing buildings to make office and new housing space available, and by 2030, to decommission and reuse Moffitt Hospital and build a new hospital addition to Long Hospital; 2) at Mount Zion to demolish existing buildings on the main block to make room for a new office and research building; 3) at Mission Bay, to construct new housing,

office, research and clinical buildings, as well as infrastructure and, 4) at Mission Center, to construct a new office building and garage.

These LRDP actions proposed at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites naturally group into four general categories – 1) demolition, 2) renovation and re-use of existing structures, 3) construction of new facilities, and 4) circulation, open space, and utilities/infrastructure proposals – that are convenient ways to organize and consider the physical actions that would occur with the implementation of the 2014 LRDP. These LRDP proposals, grouped in four categories, are:

2014 LRDP Demolition Proposals[1]

- Surge (PH)
- Woods (PH)
- Medical Research 4 (PH)
- Laboratory of Radiobiology (PH)
- Proctor (PH)
- Environmental Health and Safety (PH)
- Koret Vision Research (PH)
- Langley Porter Psychiatric Institute (LPPI) and support structures (PH)
- Hellman (MZ)
- Harold Brunn Institute (Brunn) (MZ)
- Dialysis Center (MZ)
- 2255 Post (or retrofit) (MZ)

2014 LRDP Renovation Proposals

- UC Hall (PH)
- Millberry Union towers (PH)
- Moffitt Hospital (PH)
- Faculty Alumni House seismic retrofit (PH)
- Fifth Avenue houses conversion to faculty housing (PH)
- Main Hospital (MZ)
- 2255 Post Street (or demolition) (MZ)

2014 LRDP Construction Proposals

- New Hospital Addition (PH)
- New Faculty Housing at Fifth and Parnassus avenues (PH)
- New Faculty Housing on Proctor site (PH)
- New Housing on Block 15 (MB)
- Develop Additional Research Capacity on Blocks 16, 18A, 23A, 25B, 33 and 34 (MB)

[1] PH = Parnassus Heights campus site; MB = Mission Bay campus site; MZ = Mount Zion campus site; MC = Mission Center campus site.

- Phase 1 Medical Center at Mission Bay – Cancer outpatient building (MB)
- Phase 2 Medical Center at Mission Bay (MB)
- New parking structures on Blocks 18, 33/34, and 38 (MB)
- Office/Research building (MZ)
- Office building and parking facility (MC)

2014 LRDP Circulation, Open Space, and Utilities/Infrastructure Proposals

- Parnassus Avenue Streetscape Plan (PH)
- Saunders Court renovation (PH)
- Mount Sutro Open Space Reserve trails (PH)
- Medical gas storage tanks (PH)
- Diesel fuel storage tank replacement (PH)
- Retaining wall (PH)
- Block 15 pump station upgrade (MB)

2014 LRDP Proposal Construction Time Frames

Activities to implement the 2014 LRDP proposals would occur between 2015 and the LRDP horizon in 2035, as presented in **Table 5-1**, below. The 2014 LRDP proposals are generally anticipated to occur within four sequential time frames shown in this table. They are grouped here by type of activity within each five- to six-year time frame; however, their order does not indicate a proposed sequence for the activities within each time frame. The actual sequence of these activities would be determined by UCSF based on program needs and funding.

Note that there could be delays between the demolition of any given structure and the start of construction of a new building at that site. Regardless of the cause, there could be a period of time when the demolition site would remain vacant. Specific potential environmental effects of such delays are discussed in Sections 5.1, *Aesthetics*, and 6.1 for the Parnassus Heights campus site and Section 8.1 for the Mount Zion campus site. In the event that baseline environmental conditions change because of along delay between demolition and new construction, they would be analyzed under CEQA.

TABLE 5-1
LRDP PROPOSAL CONSTRUCTION TIME FRAMES

Proposal Category	Proposal Title	Square Feet / Number of Dwelling Residential Units
2015 - 2019		
Demolition	Medical Research 4 (PH)	12,300 gsf
Demolition	Laboratory of Radiobiology (PH)	18,200 gsf
Demolition	Woods (PH)	3,900 gsf
Demolition	Surge (PH)	11,400 gsf
Demolition	Hellman, Brunn, and Dialysis Center (MZ)	85,000 gsf
Renovation	UC Hall-Phase 1 (PH)	74,700 gsf/105 units
Renovation	Faculty Alumni House (PH)	7,400 gsf
Renovation	Main Hospital (MZ)	--
Construction	Housing at Fifth and Parnassus Avenues (PH)	48,400 gsf/45 units
Construction	Block 15 (MB)	418,200 gsf
Construction	Block 33 (MB)	275,000 gsf
Construction	Block 33/34 Parking Garage (MB)	167,500 gsf
Construction	Cancer outpatient (MB)	124,500 gsf
Construction	Office/Research building (MZ)	257,300 gsf[2]
Other	Parnassus Avenue Streetscape Plan-Phase 1 (PH)	--
Other	Mount Sutro Open Space Reserve trails (PH)	--
Other	Medical gas storage tanks (PH)	--
Other	Retaining wall (PH)	--
2020 -2024		
Demolition (or Renovation)	2255 Post Street (MZ)	7,450 gsf
Construction	Block 23A (MB)	232,200 gsf
Construction	Block 34 (MB)	225,000 gsf
Construction	Block 18 Parking Garage -Phase 1 (MB)	271,000 gsf
Construction	Office building (MC)	100,000 gsf
Construction	Parking Garage (MC)	95,000 gsf
Other	Parnassus Avenue Streetscape Plan-Phase 2 (PH)	--
Other	Saunders Court renovation (PH)	--
2025-2030		
Demolition	Langley Porter Psychiatric Institute and support structures (PH)	111,100 gsf
Construction	New Hospital Addition (PH)	308,000 gsf
Construction	Block 16 (MB)	377,400 gsf[3]
Construction	Block 25B (MB)	323,000 gsf

2 An additional 78,000 gsf of parking may be developed either underground or off-site.
3 Alternatively, Block 16 may include one research and/or office building and a central utility plant totaling approximately 289,000 gsf.

TABLE 5-1 (Continued)
LRDP PROPOSAL CONSTRUCTION TIME FRAMES

Proposal Category	Proposal Title	Square Feet / Number of Dwelling Residential Units
2031 -2035		
Demolition	Proctor (PH)	9,900 gsf
Demolition	Koret Vision Research (PH)	43,000 gsf
Demolition	Environmental Health and Safety (PH)	6,200 gsf
Renovation	UC Hall-Phase 2 (PH)	68,300 gsf/64 units
Renovation	Millberry Union towers (PH)	46,600 gsf/83 units
Renovation	Moffitt Hospital (PH)	378,700 gsf
Construction	Proctor housing (PH)	30,400 gsf/32 units
Construction	Block 18A (MB)	193,000 gsf
Construction	Block 18 Parking Garage-Phase 2 (MB)	271,000 gsf
Construction	Phase 2 Medical Center at Mission Bay (MB)	793,500 gsf
Construction	Block 38 Parking Garage (MB)	up to 1,300 parking spaces

5.1 Aesthetics Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that there are no scenic highways in the vicinity of the Parnassus Heights, Mission Bay, Mount Zion or Mission Center campus sites. Therefore, no impact to scenic resources would result from implementation of the 2014 LRDP.

Buildings proposed for demolition at the Parnassus Heights campus site are mostly low-rise structures, and are generally obscured from public views by surrounding buildings and/or trees and other vegetation. Although the demolition of LPPI would alter the view of that site on the north slope of Mount Sutro, its loss would not adversely affect the scenic vista of the Parnassus Heights campus site since its removal would allow for more expansive views of Mount Sutro. The Mount Zion campus site and surrounding neighborhood are located on land that is relatively flat, and offer no scenic vistas; therefore, demolition of proposed buildings would have no effect on a scenic vista.

The Initial Study prepared for the 2014 LRDP concluded that demolition and renovation proposals at the Parnassus Heights and Mount Zion campus sites would not substantially degrade the existing visual character or quality of those respective campus sites.

None of the open space or utilities proposals at the Parnassus Heights campus site has the potential to have a substantial adverse impact on scenic vistas, visual character or quality, street-level winds or shadows in public open spaces.

Impact AES-LRDP-1: Implementation of the 2014 LRDP would not have a substantial adverse effect on a scenic vista. (Less than Significant)

New growth proposed by the 2014 LRDP would occur at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites. Besides the New Hospital Addition, other development proposed at the Parnassus Heights campus site include possible faculty housing at the Proctor site and at 1414 Fifth Avenue/735 Parnassus Avenue. The proposed New Hospital Addition would be adjacent to and visible from Parnassus Avenue, and due to the combination of the elevation of the hillside site and the height of the proposed hospital, would also be visible from a number of distant public view locations, including from Golden Gate Park to the north of the campus site. Development of 2014 LRDP proposals at the Parnassus Heights campus site is discussed in Section 6.1.

Growth proposed under the 2014 LRDP at the Mission Bay campus site would occur on Blocks 15, 16, 18, 23, 25, 33, and 34 as well as the cancer outpatient building adjacent to the Phase 1 Medical Center at Mission Bay. In addition, for purposes of the EIR analysis, Phase 2 of the Medical Center is assumed to be constructed by 2035. Building designs on the North Campus (Blocks 15, 16, 18, 23, and 25) would be in accordance with the *Mission Bay Campus Master Plan and Design Guidelines* (CMPDG). Future development of the East Campus (Blocks 33 and 34), per agreement with the City under a Memorandum of Understanding (MOU), would be consistent with the *Mission Bay South Redevelopment Area Plan "Design for Development"* guidelines, and other design criteria specified in the MOU. The *Mission Bay South*

Redevelopment Area Plan "Design for Development" designated view corridors along street alignments in Mission Bay to preserve the orientation and visual linkages to the San Francisco Bay and Mission Creek, to nearby hills, the Bay Bridge and the downtown skyline; and to preserve orientation and visual linkages that provide a sense of place within Mission Bay. Continued development of the Medical Center at Mission Bay would be consistent with the development standards set forth in the MOU with the City for that site. The MOU for the Medical Center at Mission Bay modified the CMPDG guidelines and included specific standards pertaining to building height, bulk, setbacks, stepbacks, streetwall height, view corridors, streetscapes, and signage. Therefore, as discussed further in Section 7.1, new growth proposed at the Mission Bay campus site under the 2014 LRDP would not result in an adverse effect on scenic vistas.

Growth proposed at the Mount Zion campus site by the 2014 LRDP would include a new office/research building on the site currently occupied by the Hellman, Harold Brunn Institute and Dialysis Center buildings. Growth proposed under the 2014 LRDP at the Mission Center campus site includes a new office building and parking facility. As discussed in Sections 8.1 and 9.1, respectively, proposed development at the Mount Zion or Mission Center campus sites would not result in an adverse effect on scenic vistas.

In conclusion, no adverse effects on scenic vistas would result from growth proposed by the 2014 LRDP; therefore, the impact would be less than significant.

Mitigation: None required.

Impact AES-LRDP-2: Implementation of the 2014 LRDP would not degrade the existing visual character or quality of UCSF campus sites and surrounding area. (Less than Significant)

As discussed above under Impact AES-LRDP-1, growth proposed under the 2014 LRDP at the Parnassus Heights campus site includes two small residential buildings and the New Hospital Addition. Growth proposed under the 2014 LRDP at the Mission Bay campus site would occur on Blocks 15, 16, 18, 23, 25, 33 and 34 as well as the Phase 2 of the Medical Center at Mission Bay and the cancer outpatient building. The proposed office/research building at the Mount Zion campus site would be built on the east side of the main block where the Hellman, Harold Brunn Institute (Brunn) and Dialysis Center buildings are currently located. Growth proposed under the 2014 LRDP at the Mission Center campus site includes a new office building and parking facility.

Although changes in appearance at all four campus sites would be noticeable, new development proposed under the 2014 LRDP would be built in accordance with UCSF's *Physical Design Framework* and *Facilities Design Guidelines* and would comply with the 2014 LRDP's goals regarding Building and Public Realm Design. New buildings would be sited within the appropriate functional zone at each respective campus site. The Mount Zion campus site is the only location where there might be an interim condition in which a site (Hellman, Brunn, and/or Dialysis Center) remains vacant for a period of time after demolition of existing building(s) and

prior to construction of a proposed new building. The vacant site may be used on a temporary basis as parking and could include fencing and screening.

New buildings proposed at the Mission Bay campus site would also comply with the CMPDG. Proposed development on Blocks 33 and 34 would follow the *Mission Bay South Redevelopment Area Plan "Design for Development"* guidelines regarding building height, bulk, setbacks, maximum tower floorplate and other design matters. Continued development of the Medical Center at Mission Bay would be consistent with development standards set forth in the MOU with the City of San Francisco for that site, which extended the CMPDG guidelines to the Medical Center site and modified them to include specific standards pertaining to building height, bulk, setbacks, stepbacks, streetwall height, view corridors, streetscapes, and signage.

UCSF design guidelines would ensure that the final building designs respond to the form of adjacent buildings (e.g., in terms of massing and height) and the overall urban context of the campus sites and surrounding neighborhoods. Because proposed buildings would be visually similar to existing uses on and adjacent to each respective campus site, they would not substantially degrade the visual character of the campus sites and surroundings.

Therefore, effects to the existing visual quality and character of UCSF's campus sites and their surrounding areas from implementation of the 2014 LRDP would be less than significant.

Mitigation: None required.

Impact AES-LRDP-3: Implementation of the 2014 LRDP could result in flood lighting during nighttime construction activities that would adversely affect nighttime views in the area. (Potentially Significant)

Although construction operations are generally expected to take place during the day, some activities could be conducted at night to reduce noise, vibration or other effects on daytime office or research uses. To enable construction at night, flood lighting would be required. The use of night lighting would have the potential to disturb residents in neighborhoods near construction sites, and potentially also affect nighttime views. Night lighting of construction sites would be temporary and would cease upon completion of construction. Campus-wide implementation of **Mitigation Measure AES-LRDP-1** would reduce the impact of nighttime work lighting to a less than significant level.

> **Mitigation Measure AES-LRDP-1:** UCSF shall require a condition in construction contracts that flood or area lighting for construction activities be placed and directed so as to avoid potential disturbances to adjacent residences or other uses.
>
> **Significance after Mitigation:** Less than Significant

Impact AES-LRDP-4: Implementation of the 2014 LRDP could create new sources of substantial light or glare that would adversely affect day or nighttime views in the area. (Potentially Significant)

Development proposed under the 2014 LRDP could increase ambient light levels due to light dispersion from the new buildings. Increases in night lighting could affect nighttime views on campus sites or in the surrounding neighborhoods. New light sources could include street lights, illuminated signage, exterior safety lighting and light emitted from building windows. Glare could be generated from reflective building materials. Because specific architectural features and building materials of the new buildings have yet to be determined, the proposed improvements have the potential to include reflective surfaces, such as metal and glass. The resultant glare could affect nearby residents, pedestrians and passing motorists. **Mitigation Measure AES-LRDP-2** would be implemented campus-wide to reduce the impact to a less than significant level. By employing appropriate design standards and minimizing the quantity of reflective material used in new construction, light and glare impacts and impacts to views related to lighting could be reduced to less-than-significant levels.

> **Mitigation Measure AES-LRDP-2:** Minimize light and glare resulting from new buildings through the orientation of the building, use of landscaping materials and choice of primary facade materials. Design standards and guidelines to minimize light and glare shall be adopted for the new buildings, including:
>
> - Reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades.
> - Installation of illuminated building signage shall strive to be consistent with City Planning Code sign standards for illumination and/or UCSF design guidelines.
> - Exterior light fixtures shall be configured to emphasize close spacing and lower intensity light. Light fixtures shall use luminaries that do not direct the cone of light towards off-campus structures.
> - Design parking structure lighting to minimize off-site glare.
>
> **Significance after Mitigation:** Less than Significant

Impact AES-LRDP-5: Implementation of the 2014 LRDP could create street-level winds that could be hazardous to pedestrians in the area. (Potentially Significant)

Development proposed under the 2014 LRDP would have a significant effect if it would result in pedestrian-level wind speeds that exceed the hazardous level established by San Francisco Planning Code Section 148. While shorter buildings typically have little to no effect on the wind, unless they are very wide or are exposed on an open site, structures taller than 100 feet have the potential to alter wind speeds at ground level. Siting of large structures or large groups of structures can change wind flows by speeding up the wind at some locations and slowing it elsewhere in the vicinity. Large structures placed in a windy site can be expected to change or divert street-levels winds so as to alter the number and duration of Hazard Criterion exceedances. In general, implementation of **Mitigation Measure AES-LRDP-3** would reduce street-level wind impacts resulting from growth proposed by the 2014 LRDP to less than significant levels.

Discussion of site-specific wind effects resulting from implementation of the 2014 LRDP at the Parnassus Heights, Mission Bay and Mount Zion campus sites, where some LRDP proposals could exceed a height of 100 feet, is presented in Sections 6.1, 7.1 and 8.1, respectively.

> **Mitigation Measure AES-LRDP-3:** Proposed buildings that would exceed 100 feet in height shall be evaluated by a qualified wind consultant to determine the potential of the design to cause a wind hazard as defined in City Planning Code Section 148. If a hazard cannot be judged unlikely, the design shall be wind tested to verify compliance with the hazardous wind criterion of City Planning Code Section 148. Wind tunnel testing would provide site- and design-specific information pertaining to potential wind effects. Feasible means of eliminating or reducing wind hazards include modulating facades through architectural devices (e.g., articulation, variation of planes and building heights, etc.); incorporating building setbacks/terraces into building designs; and, landscaping in appropriate locations (e.g., using plantings to create wind screens). If preliminary wind testing indicates that the building design would increase pedestrian-level wind hazards, UCSF shall modify the proposed building or develop other measures to eliminate increases in hazardous pedestrian-level wind effects.
>
> **Significance after Mitigation:** Less than Significant

Impact AES-LRDP-6: Implementation of the 2014 LRDP could substantially reduce sunlight or significantly increase shadows in public open space areas. (Potentially Significant)

Development proposed under the 2014 LRDP could cast shadows on public open space under the control of the San Francisco Recreation and Park Department, which could potentially conflict with protection of such spaces as established by the City's Sunlight Ordinance (Section 295 of the Planning Code). Section 295 prohibits the issuance of building permits for structures or additions to structures greater than 40 feet in height that would shade property under the jurisdiction of or designated to be acquired by the Recreation and Park Commission, during the period from one hour after sunrise to one hour before sunset, unless the Planning Commission, following review and comment by the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission, determines that such shade would have an insignificant impact on the use of such property. Section 295 provides exceptions for buildings 40 feet or less in height and for buildings that replace shadow from previously existing structures. In general, implementation of **Mitigation Measure AES-LRDP-4** would reduce shadow impacts on public open space areas resulting from growth proposed by the 2014 LRDP to less than significant levels.

Discussion of site-specific shadow effects resulting from implementation of the 2014 LRDP at the Mount Zion campus site is presented in Section 8.1.

> **Mitigation Measure AES-LRDP-4:** UCSF shall assure that final building designs would not increase shadow on Recreation and Park Department property between one hour after sunrise and one hour before sunset, in such a way that the use of the property would be adversely affected.
>
> **Significance after Mitigation:** Less than Significant

5.2 Air Quality Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that none of the LRDP proposals would result in the creation of objectionable odors.

BAAQMD Plan-Level Impact Guidelines

The Bay Area Air Quality Management District (BAAQMD) has published Air Quality Guidelines that contain CEQA methodologies for addressing land use plan-level impacts, as well as addressing the impacts of subsequent individual projects. Most appropriate for evaluating the 2014 LRDP, the plan-level impact evaluation guidance identifies four topics for consideration:

- Criteria pollutants and precursor emissions
- Greenhouse gases
- Local community risks and hazards, and
- Odor impacts

The plan-level greenhouse gas impacts of the 2014 LRDP are addressed separately in Section 5.6 with respect to the Greenhouse Gas Reduction Strategy. The remaining topics, and the consistency with the 2010 Clean Air Plan for the San Francisco Bay Area Air Basin, are addressed below.

In addition, following the discussion of these three plan-level impact topics are impact discussions quantitatively addressing the total construction-related and operational emissions at all four campus sites that could result from implementation of the 2014 LRDP.

2014 LRDP Plan-Level Impacts

Impact AIR-LRDP-1: Implementation of the 2014 LRDP would be consistent with the primary goals of the Bay Area Clean Air Plan (CAP) and would not fundamentally conflict with the CAP because the LRDP demonstrates reasonable efforts to implement control measures contained in the CAP. (Less than Significant)

The most recently adopted air quality plan for the San Francisco Bay Area Air Basin is the 2010 Clean Air Plan (CAP). The 2010 CAP is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the state ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the 2010 Clean Air Plan, this analysis considers whether the project would: (1) support the primary goals of the CAP, (2) include applicable control measures from the CAP, and (3) avoid disrupting or hindering implementation of control measures identified in the CAP. To meet the primary goals, the CAP recommends specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. The CAP recognizes that to a great extent, community design dictates individual travel mode, and that a key long-term control strategy to

reduce emissions of criteria pollutants, air toxics, and greenhouse gases from motor vehicles is to channel future Bay Area growth into urban communities where goods and services are close at hand, and people have a range of viable transportation options. To this end, the 2010 Clean Air Plan includes 55 control measures aimed at reducing air pollution in the Air Basin.

The 2014 LRDP contains a number of new measures and broadens existing measures that would serve to support the primary goals of the CAP. Primary among these is the continued implementation and enhancement of UCSF's Transportation Demand Management program.

Key features of UCSF's existing TDM program include the following:

- 60 shuttles serving 17 locations, with over 2.3 million passengers per year
- 33 vanpools that travel as far as Sacramento and operate using the Green Road Safety System, which improves fuel consumption and safety
- 62 reserved carpool stalls at various sites
- Marin Commute Club buses with about 55 daily riders who live in Marin and Sonoma Counties to the north of the city
- 18 City CarShare vehicles, along with 1,500 UCSF members who can use these vehicles by scheduling their use on-line
- A fleet of 43 low-emitting alternative-fuel and hybrid vehicles, including cars, shuttles, golf carts, and trucks
- 18 electric-vehicle charging stations at Parnassus Heights, Mount Zion, and Mission Bay, with plans for another 20 at Mission Bay in the Owens Street Garage and 10 at other locations
- Over 1,900 UCSF users of the ZimRide online carpool matching program
- 972 bicycle parking spaces with another 100 planned at Mission Bay, as well as bike racks on shuttles, a cyclist shower program that allows bicyclists to use UCSF showers at a discount, and other bicycle-related benefits
- Bay Area Bike Share station at Mission Bay, where members would have access to bicycles provided by the Bay Area Air Quality District
- Over 400 off-street motorcycle parking stalls in garages and surface parking lots
- An "emergency ride home" program to encourage use of alternative modes of transportation
- Clipper Card (public transit pass) sales at easily accessible locations, including through UCSF's website
- Close to 1,800 employees participate in the pretax transit program that has saved UCSF employees over $700,000 on public transit commute costs in 2013

Key Goals of the proposed LRDP that address reduced vehicle trip generation and are consistent with the goals of the CAP include:

- Enhance UCSF's Transportation Demand Management program and encourage its faculty, staff and students to use alternative modes of travel to driving alone to campus sites.
- Reduce congestion and truck deliveries to campus sites through transportation improvement measures.
- Direct, aesthetic, and experiential pedestrian connectivity is stressed in the UCSF 2010 Physical Design Framework and will be considered as buildings and open space are developed.
- The needs of pedestrians on public streets, particularly Parnassus Avenue at Parnassus Heights, Fourth Street at Mission Bay, and Sutter Street at Mount Zion, that pass through campus sites and have UCSF shuttle and Muni stops, are given the greatest consideration.

The campus sites' infill location and proximity to transit reduces the distance that students and patients would drive in motor vehicles. Also, the 2014 LRDP area is located in direct proximity to the nearby employment hubs. The Mission Bay Area is also designated as a priority development area with respect to the Sustainable Communities plan developed for the Bay Area pursuant to SB 375, a measure implemented to reduce emissions through the planning process.

Table 5-2 identifies those five categories of Transportation Control Measures (TCMs) that local agencies should implement through local plans to be considered in conformance with the 2010 CAP. A review of the TCM's in Table 5-2 indicates that these measures lend themselves to application to large-scale land use development projects and would be addressed by UCSF's TDM Program, which would apply to development under the LRDP.

TABLE 5-2
TRANSPORTATION CONTROL MEASURES IN THE 2010 CLEAN AIR PLAN

1.	Improve Transit Services (TCM A)
2.	Improve System Efficiency (TCM B)
3.	Encourage Sustainable Travel Behavior (i.e., voluntary employer-based trip reduction program)(TCM C)
4.	Support Focused Growth (Bicycle and Pedestrian friendliness) (TCM D)
5.	Implement Pricing Strategies (TCM E)

SOURCE: BAAQMD, 2010.

Because UCSF would continue to implement and expand transportation control measures consistent with the 2010 CAP, implementation of the 2014 LRDP proposals would not be considered to fundamentally conflict with the 2010 CAP and would be considered to have a less-than-significant air quality impact with regard to TCM implementation.

Mitigation: None required.

Impact AIR-LRDP-2: The 2014 LRDP would provide sufficient buffer distances between sensitive land uses and those land uses associated with toxic air contaminants (TACs) such as freeways, high traffic roadways and stationary sources. (Less than Significant)

The BAAQMD plan-level impact guidance recommends addressing localized exposure to TACs though provision of adequate buffers between sources and receptors. Exposure to TACs is a localized impact. These potential local impacts would occur from the implementation of one or more of the proposals listed in Section 5.0.4, above, and described in more detail in Chapter 3, *Project Description*. These potential local impacts are assessed quantitatively for each of the four campus sites, based on formal health risk assessments that consider the sources of TACs, their location with respect to new or proposed sensitive receptors and the prevailing meteorology of San Francisco.

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of health risk impacts for new receptors introduced by a project. The method for determining health risk requires the review of health risk from permitted sources and major roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source), then adding the project impacts to determine whether the health risk thresholds for new receptors are exceeded.

As detailed in the impact analyses in Sections 6.2, 7.2, 8.2 and 9.2 of this EIR, the 2014 LRDP proposals would not result in exposure of sensitive receptors to substantial health risks or localized pollutant concentrations. Consequently, adoption of and development under the 2014 LRDP would provide sufficient buffer distances to ensure that sensitive receptors would not be exposed to substantial health risks or localized pollutant concentrations, and the impact would be less than significant.

Mitigation: None required.

Impact AIR-LRDP-3: Implementation of the 2014 LRDP proposals would provide sufficient buffer distances between sensitive land uses and sources of odors. (Less than Significant)

The proposed project would include residences at the Parnassus Heights and Mission Bay campus sites, which would be considered sensitive receptors with regard to existing odor sources. Residential housing currently exists at both of these campuses.

The BAAQMD identifies odor sources to include:

- Wastewater treatment plants;
- Landfills;
- Confined animal facilities ;
- Composting stations;
- Food manufacturing plants;
- Refineries; and
- Chemical plants.

There are no wastewater treatment plants, landfills, composting facilities, refineries, or chemical plants in the vicinity of either Parnassus Heights or the Mission Bay campus sites. Confined animal facilities exist at both the Parnassus Heights and Mission Bay campus sites. These are

enclosed facilities which are regularly inspected for sanitation and would not be a source of localized odor emissions associated with cattle ranching, zoos or other large-scale animal facilities with open air exposure.

There are no food manufacturing plants in the vicinity of the Parnassus Heights campus site, which is surrounded be residential uses. Land uses in the vicinity of the Mission Bay campus site may include boutique bakeries in the Dogpatch area to the southeast, but these are relatively small businesses that would do not generate the types of substantial odors that might be associated with large-scale cooking and processing. The Anchor Brewing Company operates a brewery on Mariposa Street, approximately one half mile to the west of the Mission Bay campus site.

Given that existing sensitive land uses presently exist at and around both campus sites, and the 2014 LRDP would maintain development consistent with present uses within the confines of each campus site, the 2014 LRDP would provide sufficient buffer distances between odor sources and receptors. Therefore, the impact associated with objectionable odors would be less than significant.

Mitigation: None required.

Impact AIR-LRDP-4: Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during demolition and construction activities. (Potentially Significant)

Demolition, renovation and construction activities would result in emissions of criteria pollutants from the use of heavy-duty construction equipment, haul truck trips and vehicle trips generated from construction workers traveling to and from the demolition and construction sites. In addition, fugitive dust or PM_{10} emissions would result from demolition, excavation, trenching and other construction activities.

It is assumed that there would be no off-road equipment involved in building renovations and that air emissions would be generated solely by vendor trips bringing materials and construction worker trips.

Implementation of the open space and utility proposals at the Parnassus Heights campus site would require minimal construction equipment and would not be expected to contribute substantially to air emissions.

Demolition, construction and renovation emissions were calculated using the California Emissions Estimator Model (CalEEMod), by grouping construction activities into five- to six-year increments. The construction timeline for proposals is presented in Table 5-1. Modeling assumed construction phasing lengths based on CalEEMod default estimates, which are based on square footage for hospitals, research/office and child care uses and the number of dwelling units for housing. Because specific details of construction are not known, CalEEMod default estimates were also assumed for vendor trips, construction worker trips, and off-road equipment use. All model inputs and outputs are in Appendix E. **Table 5-3** presents the average annual daily construction emissions generated by the 2014 LRDP. Average daily emissions conservatively assume simultaneous construction of all

proposals under each window and are averaged over all the construction days (260 per year) for each window.

TABLE 5-3
ESTIMATED DAILY CONSTRUCTION EMISSIONS
WITHOUT MITIGATION, 2014 LRDP

Years	Estimated Emissions (lbs/day)			
	ROG	NO_x	Exhaust PM_{10}	Exhaust $PM_{2.5}$
2015-2019	**80.86**	**89.52**	4.82	4.47
2020-2024	31.27	48.11	2.59	2.46
2025-2030	21.57	28.11	1.05	0.99
2031-2035	21.01	23.22	0.52	0.50
BAAQMD Considered Construction Threshold	54	54	82	54
Potential Significant Impact?	Yes	Yes	No	No

SOURCE: ESA (Appendix E)

BAAQMD's approach to analysis of construction-related particulate impacts (other than exhaust PM) is to emphasize implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions. BAAQMD considers construction-related fugitive dust impacts of projects to be less than significant if a suite of recommended dust-control measures are implemented. Therefore, campus-wide implementation of BAAQMD-identified Best Management Practices for control of fugitive dust, listed below as **Mitigation Measure AIR-LRDP-1**, would reduce impacts to less than significant levels.

Mitigation Measure AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions.

The following BAAQMD[4] Best Management Practices for particulate control will be required for all construction activities. These measures will reduce particulate emissions primarily during soil movement, grading and demolition activities but also during vehicle and equipment movement on unpaved project sites

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

[4] Bay Area Air Quality Management District, CEQA Air Quality Guidelines, Table 8-1, 2012.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, § 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publically visible sign with the telephone number and person to contact at UCSF regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's telephone number shall also be visible to ensure compliance with applicable regulations.

As can be seen in Table 5-3, estimated average daily construction-related exhaust emissions would not exceed the thresholds for particulate matter, but would exceed the NOx and ROG average daily thresholds during the 2015-2019 window if all proposals were to be constructed. While Table 5-3 indicates that these thresholds would not be expected to be exceeded during the subsequent time frames, because sequential phasing of construction projects at all campus sites cannot be assured, this impact would be significant and mitigation is identified to reduce the effects.

Mitigation Measure AIR-LRDP-2: Architectural Coatings.

ROG emissions from the use of architectural coatings shall be reduced by implementing either or both of the following measures if total emissions of ROG exceed 54 pounds per day on average over the construction period:

- Architectural coatings shall be applied over the course of 4 months or longer, in order to reduce daily ROG emissions to below the significance threshold.
- A minimum of 67% of exterior building materials shall be prefinished to reduce ROG emissions.

Mitigation Measure AIR-LRDP-3: Off-Road Equipment Control Measures for NOx.

All off-road equipment greater than 25 hp and operating for more than 20 total hours over the duration of construction activities shall meet the following requirements that will not be fully implemented via regulation until 2018 (i.e., the equipment is available for purchase or rental at present but its use not mandated throughout all fleets until 2018):

a. All off-road equipment shall have:

   i. Engines that meet or exceed either U.S. EPA Tier 3 off-road emission standards, or

   ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).

Significance after Mitigation: Significant and Unavoidable. Mitigation Measure AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions will be required for all construction activities to reduce those impacts to less than significant. **Mitigation Measure AIR-LRDP-2: Architectural Coatings** would reduce average daily construction emissions of ROG to less than 54 pounds per day of ROG. **Mitigation Measure AIR-LRDP-3: Off-Road Equipment Control Measures for NOx** would reduce average daily NOx emissions during building construction, but NOx would still exceed the 54 pound per day threshold. For that reason, the impact of increased emissions of criteria air pollutants during demolition and construction activities would be significant and unavoidable.

Impact AIR-LRDP-5: Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during operation. (Potentially Significant)

Implementation of the 2014 LRDP would result in an increase in criteria air pollutant and precursor emissions, including ROG, NOx, PM_{10} and $PM_{2.5}$ from a variety of emissions sources, including onsite area sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.) and mobile on-road sources. Operational emissions of criteria pollutants were estimated using the CalEEMod version 2013.2.2 emissions inventory model.

One of the sources of operational emissions would be increased vehicle emissions from additional staff, patients, visitors and residents. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the 2014 LRDP (Adavant, 2014). Implementation of the 2014 LRDP would generate an estimated 14,412 additional daily vehicle trips. In addition to exhaust emissions, vehicles would also generate PM_{10} and $PM_{2.5}$ from entrained road dust and tire and brake wear.

Emissions would also be generated by natural gas combustion, operation of landscape maintenance equipment, and maintenance application of paint and other architectural coatings.

Table 5-4 presents estimated operational emissions at the LRDP horizon in 2035. As Table 5-4 shows, without mitigation, operational emissions of NOx and ROG would exceed threshold levels, resulting in a significant impact. The primary contributing sources to ROG emissions would be the use of consumer products associated with over 2 million square feet of development, while for NOx emissions, the primary sources are vehicle emissions and natural gas combustion, primarily at the Mission Bay campus site.

Mitigation Measure AIR-LRDP-4: BAAQMD-Suggested Operational Measures.

The following measures identified in the 2012 BAAQMD *CEQA Guidelines* shall be considered for implementation for site-specific development projects if not already in place:

- Provide and maintain secure bike parking (at least one space per 20 vehicle spaces);
- Provide and maintain showers and changing facilities for employees;

TABLE 5-4
ESTIMATED OPERATIONAL EMISSION INCREASES AT LRDP HORIZON YEAR, 2035

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Parnassus Heights campus site	6.34	8.36	2.85	1.28
Mission Bay campus site	130.4	74.40	68.26	21.20
Mount Zion campus site	9.82	7.64	5.66	1.67
Mission Center campus site	3.76	2.94	2.87	0.84
Total	**177.98**	**93.36**	79.64	24.99
Regional Significance Threshold	54	54	82	54
Significant Impact?	Yes	Yes	No	No

SOURCE: ESA, 2014 (see Appendix E).

- Provide information on transportation alternatives to employees;
- Provide and maintain preferential carpool and vanpool parking for non-residential uses;
- Increase building energy efficiency below Title 24 (reduces NOx related to natural gas combustion);
- Require use of electrically powered landscape equipment, where feasible;
- Use low VOC architectural coatings in maintaining buildings;
- Meet California Green Building Code standards in new construction (reduces NO_x related to natural gas combustion);
- Adopt policies supporting infill development;
- Create and enhance landscaped greenway, trail, and sidewalk connections between neighborhoods, commercial areas, activity centers, and parks; and
- Ensure that proposed land uses are supported by a multi-modal transportation system and that the land uses themselves support the development of the transportation system.

Significance after Mitigation: Significant and Unavoidable. Trip generation estimates used in this analysis included adjustments for development scale, density, and diversity of uses, distance to transit and design of the campus sites, as well as a robust number of alternative transportation trips (walk, bike, and transit) and carpooling. Therefore, many key elements of alternative mode strategies have been incorporated into the trip generation assumptions.

Mitigation Measure AIR-LRDP-4 would not result in the 78% reduction necessary (for ROG) or 41% (for NOx) to reduce the impact to a less-than-significant level. This amount of traffic reduction exceeds the best reduction estimates for TDM programs (BAAQMD, 2012b). **Table 5-5** presents emissions assuming a conservative 12% reduction in vehicle miles travelled associated with TDM measures (CAPCOA, 2010). As can be seen from

TABLE 5-5
ESTIMATED MITIGATED OPERATIONAL EMISSION INCREASES AT LRDP HORIZON YEAR, 2035

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Parnassus Heights campus site	6.34	8.36	2.85	1.28
Mission Bay campus site	126.8	62.68	59.89	18.47
Mount Zion campus site	9.41	6.89	4.99	1.48
Mission Center campus site	3.61	2.65	2.53	0.74
Total	**146.16**	**80.58**	70.26	21.97
Regional Significance Threshold	54	54	82	54
Significant Impact?	Yes	Yes	No	No

Table 5-5, emissions of ROG and NOx would still exceed thresholds. Consequently, development under the 2014 LRDP with implementation of feasible mitigation measures would still result in significant environmental effects on air quality and contribute substantially to an existing air quality violation (ozone precursors). Therefore, even with implementation of Mitigation Measure AIR-LRDP-4, the impact would remain significant and unavoidable for emissions of ROG and NOx.

NOx and ROG emissions are a concern as ozone precursors. The health implications of this significant impact would result from the potential to contribute to increased violations of the air quality standards for ozone. As indicated in Table 4.2-1, state and federal standards for ozone have not been exceeded in the past five years of monitoring in San Francisco, so the degree to which a proposal would substantially contribute to a future violation of the ozone standard would be expected to be minimal. Further, the extent to which these significant ozone precursor emissions would result in adverse health effects is not readily quantifiable on a local scale because "by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards" (BAAQMD, 2011).

2014 LRDP Development Site-Specific Impacts

Impact AIR-LRDP-6: Implementation of the 2014 LRDP would result in increased emissions of toxic air contaminants that could increase health risks for nearby residents during demolition and construction activities. (Less than Significant)

Construction activities under the 2014 LRDP would produce diesel particulate matter (DPM) and $PM_{2.5}$ emissions due to combustion equipment such as loaders, backhoes, and cranes, as well as haul truck trips. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences and schools). Hospitals are also considered sensitive receptors but the duration of exposure would be substantially less than that assumed for residential receptors and the resulting risk would therefore be less. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts.

TACs do not have ambient air quality standards, but are regulated by BAAQMD using a risk-based approach based on recommended methodology of the state Office of Environmental Health Hazard Assessment, which has been adopted by BAAQMD. Consequently, a health risk assessment of the development proposals was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The cancer risk to residential receptors assumes exposure occurs 24-hours per day for 350 days per year. Cancer risk to residential receptors is based on the exposure for the duration of the construction period. These cancer risk estimates also incorporate age sensitivity factors (ASFs). This approach provides updated calculation procedures that factor in the increased susceptibility of infants and children to carcinogens as compared to adults. For estimating cancer risks for residential receptors over a 70 year lifetime, the incorporation of the ASFs results in a cancer risk adjustment factor of 1.7.

A summary of the construction-related health impacts related to implementation of the 2014 LRDP at the four campus sites is presented in **Table 5-6**. Detailed assumptions, methodology for the health risk assessment and results are included in the impact analyses in Sections 6.2, 7.2, 8.2 and 9.2 and Appendix E of this EIR. As shown in Table 5-6, construction-related health risks and hazards would be less than significant for each campus location.

TABLE 5-6
SUMMARY OF 2014 LRDP CONSTRUCTION-RELATED HEALTH IMPACTS

Receptor Type	Cancer Risk (per million) persons	Chronic Impact	Acute Impact	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Parnassus Heights Campus Site				
New Residence (adult / child)	0.05/0.59	<0.01	<0.01	<0.01
School Children	0.02	<0.01	<0.01	<0.01
Existing Residence (adult / child)	0.03 / 0.29	<0.01	<0.01	<0.01
Mission Bay Campus Site				
New Residence (adult / child)	0.63 / 7.11	0.01	0.08	0.07
School Children	0.35	0.01	0.01	0.03
Existing Residence (adult / child)	0.73 / 8.21	0.01	0.17	0.05
Mount Zion Campus Site				
School Children	0.01	0.01	0.01	0.01
Existing Residence (adult / child)	0.05 / 0.54	0.01	0.01	0.01
Mission Center Campus				
School Children	0.04	0.01	0.01	0.01
Existing Residence (adult / child)	0.64 / 7.19	0.02	0.21	0.08
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

Each campus site also operates fume hoods that emit TACs. These fume hood emissions do not require a permit from BAAQMD based on the operating throughput and therefore have not been assigned an existing risk value in BAAQMD databases like permitted sources. However, UCSF maintains an inventory of chemical throughput for each campus site and has prepared health risk assessments relative to fume hood emissions at its major campus locations (Parnassus Heights and Mission Bay). The potential for adverse health risk associated with fume hood emissions under the LRDP is assessed separately for each campus site in Sections 6.2, 7.2, 8.2 and 9.2. The relative risk from fume hoods is not a substantial contribution compared to other existing sources.

Implementation of the proposed 2014 LRDP would result in localized increases in TACs at each campus site from increased daily vehicle trips which are assessed individually for each campus site in Sections 6.2, 7.2, 8.2 and 9.2. Potential localized risk increases from new diesel generators are also addressed in these sections.

References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

BAAQMD, *CEQA Air Quality Guidelines*, May 2012, www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx; p. C-16.

California Air Pollution Control Officers Association, CAPCOA, *Quantifying Greenhouse Gas Mitigation Measures, A Resource for Local Governments to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*, August 2010.

5.3 Biological Resources Impacts of the 2014 LRDP

Impact BIO-LRDP-1: Implementation of the 2014 LRDP could have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Less than Significant)

A comprehensive list of the special-status plant and animal species that may occur or have the potential to occur within the San Francisco North and San Francisco South U.S. Geological Survey quadrangles, which include all UCSF campus sites with 2014 LRDP proposals, was developed based on data obtained from the California Natural Diversity Database (CNDDB), the California Native Plant Society (CNPS) Electronic Inventory, the U.S Fish and Wildlife Service (USFWS) and other biological literature pertaining to the bioregion (see Tables 4.3-1 and 4.3-2 in Section 4.3).

Most of the species identified within these quadrangles are associated with specific habitat types, such as dunes, valley foothill grasslands, chaparral, coastal prairie, coastal bluff scrub, marshes and swamps. None of these habitats is present at the four main campus sites.

Most special-status plant species are considered to have a low potential to occur at the four main campus sites due to the developed nature of these locations. This estimation is supported by the lack of native plants and supportive native vegetation communities, and based on the disturbed and heavily managed condition of the campus sites. Although the Parnassus Heights campus site includes the Mount Sutro Open Space Reserve (Reserve), the potential for rare plant species in the Reserve is considered low because the vegetation communities that would support rare plants, such as coastal salt marsh, coastal prairie, valley and foothill grasslands, coastal dunes, and coastal scrub are not prevalent there.

Aside from breeding birds, special-status wildlife species are not likely to occur within the campus sites because most of these areas are highly fragmented and paved or dominated by non-native ornamental or ruderal species, which have poor habitat attributes for wildlife.

Sensitive species habitat in the vicinity of the Mission Bay campus site is associated with the San Francisco Bay and the China Basin channel. Development proposed at this campus site would not be located on or near aquatic habitat or directly affect aquatic habitat and water-dependent, special-status species that may be present in the China Basin channel.

The CNDDB documents three special-status plant species within one mile of the Mount Zion campus site: Franciscan manzanita (*Arctostaphylos franciscana*), Presidio Manzanita (*Arctostaphaylos Montana* ssp. *ravenii*) and Marin western flax (*Hesperolinon congestum*). None of these species are expected to occur there due to lack of suitable habitat and lack of historic presence.

Monarch butterflies (*Danaus plexippus*) have been known to overwinter in eucalyptus groves of San Francisco and the foliage-roosting western red bat has been documented in Golden Gate Park. Parnassus Heights is the only UCSF campus site with suitable habitat for overwintering monarch aggregations; however, there are no records of such activity within the Reserve. The western red bat and Yuma myotis may potentially occur in forest edge habitat of the Reserve. Suitable roosting habitat for these bats includes tree foliage, underneath the exfoliating bark of trees and in tree cavities. The western red bat has been known to roost in the Strybing Arboretum of Golden Gate Park within 0.5 mile of the Parnassus Heights campus site.

Construction and demolition proposals, as well as open space and utilities activities within and near the Reserve at the Parnassus Heights campus site could have potentially adverse impacts on special-status wildlife and plant species in the Reserve. Discussion of biological resources and potential impacts resulting from implementation of the 2014 LRDP at the Parnassus Heights campus site is presented in Section 6.3.

2014 LRDP proposals at the Mission Bay, Mount Zion or Mission Center campus sites would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Mitigation: None required.

Impact BIO-LRDP-2: Implementation of the 2014 LRDP would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. (Less than Significant)

Implementation of 2014 LRDP proposals would occur at already developed campus sites within an urban setting. Small areas of oak woodland, eucalyptus forest, montane hardwood, non-native annul grassland, lacustine, riparian and freshwater emergent wetland habitat, are present within the City, but not at or in the vicinity of the campus sites for which proposals are included under the 2014 LRDP.

The CNDDB reports no sensitive natural community occurrences for the two-quadrangle area containing and surrounding the 2014 LRDP planning area (CDFW, 2014). The USFWS designates critical habitat for certain species listed by the agency as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the federal Endangered Species Act as those lands within a listed species' current range that contain the physical or biological features considered essential to the species' conservation, as well as areas outside the species' current range that are determined to be essential to its conservation. Proposals under the 2014 LRDP are not located within designated critical habitat for any federally listed species.

Development proposed under the 2014 LRDP would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations. The impact would be less than significant.

Mitigation: None required.

Impact BIO-LRDP-3: Implementation of the 2014 LRDP would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (No Impact)

Development proposed under the 2014 LRDP would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means because there are no jurisdictional or non-jurisdictional wetlands mapped or identified on UCSF campus sites. No impact would occur.

Mitigation: None required.

Impact BIO-LRDP-4: Implementation of the 2014 LRDP would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Potentially Significant)

The San Francisco Peninsula is an important migratory stopover for birds along the Pacific Flyway—one of the four major migratory routes in North America. Raptors, songbirds, shorebirds and waterfowl stop in San Francisco, including Golden Gate Park, Lake Merced, the Presidio and the Mount Sutro Open Space Reserve on the Parnassus Heights campus site during their fall and spring migrations. Both the Mission Bay and Parnassus Heights campus sites offer suitable and attractive habitat for birds to forage and rest along this migration route.

Bird flights close to man-made structures are at risk of collisions with such structures. Direct effects on migratory as well as resident birds moving through an area could include death or injury if birds collide with lighted structures or other birds attracted to the light, as well as collisions with glass during the daytime. Indirect effects for migratory birds include delayed arrival at breeding or wintering grounds, and reduced energy stores necessary for migration, winter survival, or subsequent reproduction (Gauthreaux and Belser, 2006). It is estimated that, in North America alone, millions of songbirds are killed due to collisions with buildings and other structures each year (Lochhead, 2008). Collisions are currently recognized as one of the leading causes of bird population declines worldwide (Brown et al., 2007).

Daytime collisions occur most often when birds fail to recognize window glass as a barrier. Regardless of overall height, the ground floor and first few stories of buildings present the greatest hazards to most birds; reflections of attractive ground-level features like vegetation draw birds toward glass surfaces and often result in collisions. Recent increases in glass surfaces used to provide more natural light to building interiors can be considered a “biologically significant” issue, potentially affecting the viability of local and regional bird populations (New York Audubon Society, 2007). The San Francisco Planning Department adopted *Standards for Bird-Safe Buildings* in 2011, adding Planning Code Section 139 (San Francisco Planning Department, 2011). However,

as discussed in Section 4.3.2.2 *Applicable Local Plans and Policies*, property owned or leased by the University that is used in furtherance of the University's educational purposes is not subject to local land use regulation, including *San Francisco General Plan* policies regarding protection of biological resources. Nonetheless, an increase in avian collisions attributed to 2014 LRDP proposals at the Parnassus Heights and Mission Bay campus sites would be a significant impact.

Implementation of **Mitigation Measure BIO-LRDP-1: Bird Safe Building Treatments** would reduce potential adverse effects on resident and migrating birds to a less than significant level by requiring design features be incorporated into proposals at the Parnassus Heights and Mission Bay campus sites that would make buildings more visible to birds.

Mitigation Measure BIO-LRDP-1: Bird-Safe Building Treatments.

- Employ glazing options such as use of either fritted glass, Dichroic glass, etched glass, translucent glass, or glass that reflects ultraviolet light in appropriate portions of the building façade.

- Minimize light and glare resulting from new buildings through the orientation of the building, use of landscaping materials and choice of primary façade materials. Design standards and guidelines to minimize light and glare shall be adopted for the new buildings, including: reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades.

Significance after Mitigation: Less than Significant

Mitigation: None required.

Impact BIO-LRDP-5: Implementation of the 2014 LRDP would not conflict with any applicable policies protecting biological resources. (No Impact)

Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation, including City of San Francisco General Plan policies regarding protection of biological resources. Although UCSF is not subject to City policies and regulations, UCSF strives to be consistent with City standards, where feasible.

Regarding City policies applicable to potential 2014 LRDP effects on birds, the San Francisco Planning Department adopted *Standards for Bird-Safe Buildings* in 2011, adding Planning Code Section 139 (San Francisco Planning Department, 2011). These standards guide the use and types of glass and façade treatments, wind generators and grates and lighting treatments. The standards impose requirements for bird-safe glazing and lighting in structures or at sites that represent a hazard to birds and provide information on educational and voluntary programs related to bird hazards. The standards define two types of bird hazards. "Location-related hazards" are buildings located inside of, or within a clear flight path of less than 300 feet from, an Urban Bird Refuge.[5]

[5] An Urban Bird Refuge is defined in the Standards for Bird-Safe Buildings as: any area of open space two acres or larger that is dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, water features, or wetlands; open water; and some green rooftops.

Such buildings require treatment when new buildings are constructed; additions are made to existing buildings; or existing buildings replace 50 percent or more of the glazing within the "bird collision zone."[6] The standards require implementation of the following treatments for façades facing, or located within, an Urban Bird Refuge:

- No more than 10 percent untreated glazing is allowed on building façades within the bird collision zone.
- Lighting must be shielded, and no uplighting is permitted. No event searchlights are permitted.
- Sites are not permitted to use horizontal access windmills or vertical access wind generators that do not appear solid.

"Feature-related hazards" include building- or structure-related features that are considered potential "bird traps" regardless of location (e.g., glass courtyards, transparent building corners, or clear glass walls on rooftops or balconies). Structures that include these elements must treat 100 percent of these elements in the building with bird-safe glazing.

As noted above under Impact BIO-LRDP-4, UCSF will adopt mitigation that is generally consistent with the City's *Standards for Bird-Safe Buildings* for new construction proposed under the 2014 LRDP. However, as noted above, UCSF is not subject to local policies protecting biological resources. Thus, no conflict would result and no impact would occur.

Mitigation: None required.

Impact BIO-LRDP-6: Implementation of the 2014 LRDP would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other applicable habitat conservation plan. (No Impact)

There are no adopted habitat conservation plans, natural community conservation plans or other applicable habitat conservation plans that would be applicable to the 2014 LRDP or any of the proposals included under the LRDP. No impact would occur.

Mitigation: None required.

Impact BIO-LRDP-7: Implementation of the 2014 LRDP would not exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance. (Less than Significant)

The San Francisco Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code) was enacted to ensure the protection of trees on private land within and adjacent to public areas. The City of San Francisco currently considers street trees, significant trees and landmark trees as protected. Significant trees are trees within 10 feet of the public right-of-way and are either 20 feet or greater in height, 15 feet or greater in canopy width, or 12 inches or greater in

[6] The "bird collision zone" is that portion of the building that begins at grade and extends upward for 60 feet.

trunk diameter at 4.5 feet above grade. Landmark trees are trees that have received special designation by the San Francisco Board of Supervisors due to species rareness, size, age, structure, ecological contribution, or historical and cultural importance. Proposals under the 2014 LRDP are not expected to affect protected trees; therefore, the impact would be less than significant.

Mitigation: None required.

References

Brown, H., Caputo, S., McAdams, E.J., Fowle, M., Phillips, G., Dewitt, C., Gelb, Y, 2007. *Bird Safe Building Guidelines*, New York City Audubon Society www.nycaudubon.org/pdf/BirdSafeBuildingGuidelines.pdf.

Gauthreaux, S.A., Belser, C.G.,2006. *Effects of Artificial Night Lighting on Migrating Birds*, In: Rich, C. and Longcore, T., Ecological Consequences of Night Lighting, Island Press, Covelo, CA, pp. 67–93.

New York Audubon Society, 2007. *Bird Safe Building Guidelines*, http://www.nycaudubon.org/pdf/BirdSafeBuildingGuidelines.pdf.

5.4 Cultural Resources Impacts of the 2014 LRDP

Impact CUL-LRDP-1: Implementation of the 2014 LRDP could result in a substantial adverse change in the significance of historical resources as defined in CEQA Guidelines Section 15064.5. (Potentially Significant)

Renovation activities proposed under the 2014 LRDP could result in adverse changes to historical resources or eligible resources as designated by the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). Under CEQA, a cultural resource is considered significant if it is at least 45 years old and meets any of the criteria listed by the CRHR. The fact that a resource is not listed in, or determined to be eligible for listing the CRHR, not included in a local register of historic resources, or identified in a historical resources survey does not preclude a lead agency from determining based on substantial evidence that the resources may be an historical resource (CEQA Guidelines Section 15064.5(a)(4)). Listing of a property in the NRHP or CRHR does not prohibit demolition or alteration of that property, but does denote that the property is a resource worthy of recognition and protection.

Public Resources Code Section 5020.1 and CEQA Guidelines Section 15064.5(b)(1) define a significant effect as one that would materially impair the significance of a historical resource. Alteration in an adverse manner of the physical characteristics of a historical resource that conveys its historical significance would be considered a significant impact under CEQA. Generally, a project that follows the Secretary of the Interior's guidelines for historic buildings would be considered mitigated to a less than significant level, according to CEQA Guidelines Section 15064.5(b)(3). Implementation of Mitigation Measure **CUL-LRDP-1** would reduce impacts to a less than significant level.

> **Mitigation Measure CUL-LRDP-1:** Before altering or otherwise affecting a building or structure 50 years old or older, the campus shall retain a qualified architectural historian to record it on a California Department of Parks and Recreation DPR 523 form. Its significance shall be assessed by a qualified architectural historian, using the significance criteria set forth for historic resources under CEQA Guidelines Section 15064.5. For historic buildings, structures or features that do not meet the CEQA criteria for historical resource, no further mitigation is required and the impact is less than significant.
>
> For a building or structure that qualifies as a historic resource, the architectural historian and UCSF shall consider measures that would enable the project to avoid direct or indirect impacts to the building or structure. These could include project redesign or other measures that would avoid altering the building. All rehabilitation work of an historic building or structure shall be conducted in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*, to the extent feasible. Alterations to cultural landscapes shall be conducted in compliance with the *Secretary of the Interior's Guidelines for Rehabilitating Cultural Landscapes*.
>
> **Significance after Mitigation:** Less than Significant. If it is not feasible to meet the Secretary's Standards, this impact could be a significant and unavoidable impact.

Impact CUL-LRDP-2: Implementation of the 2014 LRDP could result in demolition of historical resources as defined in CEQA Guidelines Section 15064.5. (Significant)

Demolition activities proposed under the 2014 LRDP could result in the loss of historical resources or eligible resources as designated by the NRHP or the CRHR, which would be considered a significant impact under CEQA. Although mitigation is available to reduce the impact, it would not reduce effects to a less than significant level. As noted in CEQA Guidelines Section 15126.4 (b)(2), documentation of an historical resource by way of historic narrative, photographs, or architectural drawings as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

> **Mitigation Measure CUL-LRDP-2:** If a significant historic building or structure is proposed for substantial alteration or demolition, UCSF shall ensure that a qualified architectural historian thoroughly documents the building and associated landscaping and setting. Documentation shall include still photography and a written documentary record of the building to the National Park Service's standards of the Historic American Building Survey or Historic American Engineering Record, including accurate scaled mapping and architectural descriptions. If available, scaled architectural plans will also be included. Photos include large-format (4"X5") black-and-white negatives and 8"X10" enlargements. Digital photography may be substituted for large-format negative photography if archived locally. The record shall be accompanied by a report containing site-specific history and appropriate contextual information. This information shall be gathered through site specific and comparative archival research, and oral history collection as appropriate. A copy of the record shall be archived with the UCSF archives, the History Room of the San Francisco Public Library, the Northwest Information Center at Sonoma State University, and the San Francisco Planning Department.
>
> UCSF shall install interpretive materials at or near the site to enhance public awareness in the form of a historical marker, kiosk, or other display that contains historical photos and text about the building's historical significance.
>
> **Significance after Mitigation:** Significant and Unavoidable

The 2014 LRDP proposes to demolish existing buildings at the Parnassus Heights and Mount Zion campus sites. Two of these buildings, Surge at Parnassus Heights and Hellman at Mount Zion, are considered historical resources for CEQA purposes. The 2014 LRDP proposes to renovate and reuse UC Hall, Millberry Union towers and Moffitt Hospital on the Parnassus Heights campus site, and the Main Hospital on the Mount Zion campus site. Both UC Hall and Millberry Union towers are considered historical resources under CEQA. Saunders Court at the Parnassus Heights campus site is proposed to be renovated under the 2014 LRDP. It is considered a significant cultural landscape and presumed to be a historical resource for CEQA purposes. The Mount Sutro Open Space Reserve is considered an historic landscape. Three new trails through the Reserve are proposed by the 2014 LRDP.

Discussion of potential effects to historical resources resulting from identified 2014 LRDP demolition, renovation and open space proposals at the Parnassus Heights and Mount Zion campus sites is presented in Sections 6.4 and 8.4, respectively.

Impact CUL-LRDP-3: Implementation of the 2014 LRDP could result in a substantial adverse change to archaeological resources. (Potentially Significant)

Previous studies and archival research conducted for UCSF have not identified archaeological resources at the Parnassus Heights, Mission Bay or Mount Zion campus sites. Mission Bay is the only campus site near a watercourse or water body, which is where archaeological resources are frequently discovered. However, the Mission Bay area has been substantially altered over time, including the large amount of fill added along the shoreline; therefore, the likelihood of discovering archaeological resources is low. Additionally, these campus sites have been extensively modified over time, and the likelihood of discovering archaeological resources would thus be low. In the unlikely event that archaeological artifacts are discovered during construction at the Parnassus Heights, Mission Bay or Mount Zion campus sites (including grading, excavation, and other earthmoving activities), the following mitigation measure would be implemented:

> **Mitigation Measure CUL-LRDP-3:** Should an archaeological artifact be discovered during project construction and excavation, pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" shall be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and UCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the project, representatives of UCSF and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation (per CEQA Guidelines 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR44716)).
>
> **Significance after Mitigation:** Less than Significant

Prehistoric and historic period occupation of the Mission Center campus site suggests a high sensitivity to contain significant archaeological deposits and/or features from both prehistoric and historic-period use and occupation. For discussion of potential impacts to archaeological resources at the Mission Center campus site see Section 9.4.

Impact CUL-LRDP-4: Implementation of the 2014 LRDP could result in a substantial adverse change to paleontological resources. (Potentially Significant)

Review of geological maps and previous analysis suggests that there are no unique paleontological resources or unique geologic features at any campus site. In the event that

paleontological resources are uncovered during the course of construction, implementation of **Mitigation Measure CUL-LRDP-3** would reduce impacts to a less than significant level.

> **Mitigation Measure CUL-LRDP-4:** If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find shall be halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with UCSF and in conformance with Society of Vertebrate Paleontology Guidelines (SVP, 1995; SVP, 1996).
>
> **Significance after Mitigation:** Less than Significant

Impact CUL-LRDP-5: Implementation of the 2014 LRDP could result in a substantial adverse change to human remains. (Potentially Significant)

There are no known human remains, including those interred outside of formal cemeteries, located at any campus site. In the event of an accidental discovery or recognition of human remains during project excavation and construction, the following mitigation measure would be implemented:

> **Mitigation Measure CUL-LRDP-5:** If the discovery includes human remains, CEQA Guidelines 15064.5 (e)(1) shall be followed:
>
> > In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
> >
> > (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
> >
> > (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
> >
> > (B) If the coroner determines the remains to be Native American: (1) the coroner shall contact the Native American Heritage Commission within 24 hours. (2) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. (3) The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
> >
> > (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
> >
> > (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Significance after Mitigation: Less than Significant

5.5 Geology, Soils and Seismicity Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that there are no expansive soils on the Parnassus Heights, Mission Bay, Mount Zion or Mission Center campus sites. Therefore, no impact regarding expansive soils would result from implementation of the 2014 LRDP.

The Initial Study also determined that implementation of the 2014 LRDP would not result in the installation of septic tanks or alternative wastewater disposal systems. Therefore, no impacts regarding septic tanks or alternative wastewater disposal systems would result from implementation of the 2014 LRDP.

Impact GEO-LRDP-1: Implementation of the 2014 LRDP could result in adverse effects to people and structures resulting from geologic hazards. (Less than Significant)

Building demolitions under the 2014 LRDP would be essentially unaffected by geologic hazards, while renovation and reuse of existing buildings and all new construction activities could be strongly affected. The four campus sites where development is proposed under the 2014 LRDP are located in a seismically active region that could experience at least one major earthquake (Richter magnitude (M) 6.7 or higher) over the next 30 years. Strong ground shaking at these campus sites could occur during a moderate to severe earthquake occurring on one of the active Bay Area faults near the campus sites.

As described in Section 4.5.2, *Regulatory Considerations,* construction of proposed buildings would require design, site preparation and foundation construction in accordance with the most current version of the California Building Code as well as the seismic standards of SB 1953 and the Office of Statewide Health Planning and Development (OSHPD) requirements for proposed hospital facilities. Geotechnical review of the foundation design of new hospital facilities would be required to adhere to the guidelines presented in *California Geological Survey – Note 48, Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings.* Geotechnical review would include evaluation of slope stability hazards as required by building code requirements. Renovation of existing buildings also would be required to adhere to all applicable seismic requirements as contained in the most recent version of the California Building Code and UC *Policy on Seismic Safety.*

The Mission Bay campus site is within a California Geologic Survey (CGS) Seismic Hazard Zone and the City's Special Geologic Study Area for potential ground failure hazards caused by liquefaction and would therefore be subject to Special Publication 117A. Special Publication 117A includes protocols for the identification of potentially liquefiable materials as well as appropriate requirements to minimize potential damage from liquefaction (e.g., use of edge containment structures, removal of liquefiable soils, dynamic consolidation, injection grouting, etc.).

In general, the Mission Bay campus site contains conditions that present a number of potential geologic hazards including groundshaking, liquefaction, settlement, and differential settlement

largely due to the presence of the underlying materials (i.e., varying thicknesses of loose artificial fill, Bay Mud, older marine clays, and sandy alluvium) (Treadwell & Rollo, 1995). If not addressed appropriately in site preparation and design, the presence of heterogeneous fill materials including building debris, soft compressible Bay Mud, and loose saturated soils would make new structures susceptible to damage from dynamic (earthquake) or static (slow compression of Bay Muds) forces. However, these hazards are commonplace in areas throughout the Bay margins and, as stated above, current code requirements and design practices such as the use of deep foundation systems are effective in reducing potential impacts. Therefore, construction and design in accordance with the most recent version of the California Building Code and CGS Special Publication 117A would reduce potential geotechnical hazards to less than significant levels.

According to the CGS, the Mission Center campus site is also located within a Seismic Hazard Zone for liquefaction indicating a high potential for the presence of soils that could be susceptible to the effects of liquefaction during an earthquake (ABAG, 2014). Due to the location of the site within the seismic hazard zone for liquefaction, construction at the Mission Center campus site would be required to be in compliance with Special Publication 117A which includes measures on the identification and appropriate mitigation of any identified liquefaction hazards. Adherence to these existing regulatory requirements would ensure that seismic hazards are reduced to less than significant levels.

The University's *Policy on Seismic Safety* requires that all buildings and facilities where University operations and activities occur be acquired, built, maintained and rehabilitated to an acceptable level of earthquake safety. The policy requires that new University construction comply with the most stringent seismic building requirements, where they are embodied in the California Building Code or in local regulations. Adherence to this policy as well as other regulatory requirements described in Section 4.5, *Geology, Soils and Seismicity*, would reduce impacts to less than significant levels.

The proposed improvements to the streetscape of Parnassus Avenue on the Parnassus Heights campus site present low risk in terms of their seismic vulnerability, however they would nonetheless be subject to building code requirements, where applicable, as well as City of San Francisco Department of Public Works regulations that would ensure that proven geotechnical preparations and design would reduce potential seismic impacts to less than significant levels.

Finally, 2014 LRDP utilities improvements on the Parnassus Heights campus site and their associated connections to new and existing buildings are required to adhere to regulatory requirements that include measures such as flexible connections that minimize the potential for damage in the event of a substantial earthquake. The improvements are designed to address or eliminate any existing seismic deficiencies.

Mitigation: None required.

Impact GEO-LRDP-2: Implementation of the 2014 LRDP could result in substantial soil erosion or loss of topsoil. (Less than Significant)

The 2014 LRDP demolition of existing structures and new construction activities could expose underlying soils, while renovation and reuse of existing buildings would have essentially no effect. If not managed appropriately, exposed soils could be subject to the effects of wind and water erosion. However, all construction and demolition activities would be required to adhere to best management practices that include appropriate erosion control measures; wind erosion controls are prescribed by BAAQMD construction dust control mitigation measures (described above in Section 5.1.2) and water erosion controls are prescribed by NPDES requirements. Projects sites greater than 1 acre are subject to the National Pollutant Discharge Elimination System (NPDES) and would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) as part of the Construction General Stormwater Permit. The SWPPP specifies Best Management Practices designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off-site into receiving waters. UCSF is also considered a Municipal Separate Storm Sewer System as of 2013. This designation requires UCSF to develop, implement and enforce a Storm Water Management Plan/Program (SWMP) by July 2016 designed to minimize the discharge of pollutants into receiving waters; identify appropriate stormwater treatment practices with measurable performance criteria; and ensure that the program includes provisions to address six minimum measures to promote pollutant load reduction. In addition, by July 2015 UCSF projects that create and/or replace 2,500 square feet of impervious surface must include design measures to reduce runoff and low-impact design standards. Construction activities at the Mission Bay campus site would also be conducted in accordance with the Risk Management Plan developed for the campus which addresses measures to minimize erosion and any offsite transport of sediment due to potential legacy contaminant issues. Adherence to these and other regulatory requirements described in Section 4.8, *Hydrology and Water Quality*, would reduce water quality impacts to less than significant levels and the construction mitigation measures in Section 5.1.2, *Air Quality*, would reduce wind erosion impacts to less than significant levels.

The 2014 LRDP installation of the proposed changes to the utilities and infrastructure including the replacement of the underground storage tanks would involve ground disturbing activities which could expose soils to the effects of wind and water erosion. However, all proposed construction activities would be required to adhere to best management practices that protect any exposed soils from erosion. Once construction is complete, all trenches and other areas of excavation would be covered by asphalt, concrete, or vegetated landscaping that would protect soils from the effects of erosion. Therefore, potential impacts related to the utilities and infrastructure projects would be less than significant.

Mitigation: None required.

References

Association of Bay Area Governments, San Francisco Bay Area Hazards-Liquefaction Susceptibility map, http://quake.abag.ca.gov/earthquakes/#LIQUEFACTION, 2014.

5.6 Greenhouse Gas Emissions Impacts of the 2014 LRDP

As part of implementing the UC *Policy on Sustainable Practices*, UCSF has developed a Climate Action Plan, a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the *California Global Warming Solutions Act of 2006* (AB 32). In addition, as part of the 2014 LRDP, UCSF proposes a GHG Reduction Strategy to provide streamlined analysis under CEQA for future development projects.

The purpose of developing a "qualified" GHG reduction strategy is to ensure adequate CEQA coverage (under the streamlining provisions of CEQA Guidelines Section15183.5) of GHG analyses for UCSF's 2014 LRDP and future development activities through 2020, and provide the framework for continued CEQA coverage after 2020.

The essential requirements of a qualified greenhouse gas reduction strategy, under CEQA Guidelines Section 15183.5 and as interpreted by BAAQMD[7], include:

- Establish a baseline GHG inventory for 2008 or earlier using accepted accounting protocols;
- Establish a business-as-usual GHG forecast for 2020 based on reasonable assumptions;
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the strategy would not be cumulatively considerable;
- Specify GHG reduction measures and performance standards that, when implemented on a project-by-project basis, will collectively achieve the specified emissions target;
- Establish a mechanism to monitor the plan's progress toward achieving the target and to require amendment if the plan is not achieving specified levels; and
- Adopt in a public process following environmental review.

UCSF's existing Climate Action Plan (CAP), dated December 2009, meets many but not all of these requirements. It establishes a 1990 baseline, which in turn informs the 2020 target (consistent with AB 32 and UC Regents policy), forecasts emissions to 2020 and includes a comprehensive set of prescriptive GHG reduction measures. However, the CAP was not adopted in a public process, and it does not include a clear monitoring plan for tracking GHG emissions reductions and adjusting the CAP over time to meet the 2020 target. Also, the CAP does not look beyond 2020 in terms of GHG emissions projections, targets and reduction strategies, whereas the 2014 LRDP planning horizon is 2035. Thus, the CAP cannot be considered a qualified GHG reduction strategy for the LRDP.

[7] See Section 4.3 of BAAQMD's CEQA Guidelines (updated May 2011): http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx?la=en
See also BAAQMD's Plan Level Guidance: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/GHG%20Quantification%20Guidance%20May%202012.ashx?la=en

The following analysis applies a two tiered approach to assessing GHG impacts, consistent with Appendix G of the CEQA Guidelines. In the first tier, GHG emissions related to development at the four affected campus sites under the 2014 LRDP are quantified and assessed relative to thresholds considered by the BAAQMD for impact assessment. In the second tier, a qualitative assessment of the consistency of the 2014 LRDP is undertaken with respect to applicable state and local plans, policies and regulations adopted for the purpose of reducing GHG emissions. Assessment of this second tier of potential GHG impact acknowledges the existing CAP and proposed GHG Reduction Strategy as well as the policies and plans of the UC Regents and University of California Office of the President (UCOP).

Impact GHG-LRDP-1: Implementation of the 2014 LRDP would result in an increase in construction-related greenhouse gas emissions. (Potentially Significant)

Construction activities would result in emissions of criteria pollutants from the use of heavy-duty construction equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the site. Demolition and construction-related emissions resulting from implementation of the 2014 LRDP were calculated using the California Emissions Estimator Model (CalEEMod), assuming four discrete construction windows in five year increments.

Construction-related emissions from these project-level elements were calculated using CalEEMod, assuming completion by 2020, 2025, 2030 and 2035. Phasing lengths were based on CalEEMod default estimates which are based on square footage for hospitals, medical office buildings and number of dwelling units for housing. It was assumed that there would be no off-road equipment involved in the renovations of buildings on the Parnassus Heights and Mount Zion campus sites and that air emissions from the renovation of these buildings would be generated solely by vendor trips bringing materials and construction worker trips. Implementation of the open space and utility proposals at the Parnassus Heights and Mission Bay campus sites would require minimal construction equipment and would not be expected to contribute substantially to the emissions estimated below for building demolitions and renovations. All model inputs and outputs are provided in Appendix E.

Table 5-7 presents the annual construction-related GHG emissions generated by the 2014 LRDP for each of the four development windows assumed. Estimated emissions are 2,209 metric tons of carbon dioxide equivalent greenhouse gases (CO_2e) by 2020, an additional 862 metric tons CO_2e by 2025, an additional 1,274 metric tons CO_2e by 2031 and an additional 1,698 metric tons CO_2e in 2035[8]. As discussed earlier, BAAQMD has not established a quantitative threshold relative to construction-related emissions. In lieu of any proposed or adopted thresholds relative to construction-related emissions, these emissions are considered significant unless best management practices are implemented to reduce GHG emissions during construction, as feasible. Consequently, **Mitigation Measure LRDP-GHG-1** is identified to ensure implementation of best management practices during construction.

8 Emissions were calculated assuming construction was performed in the earliest part of the 5-year construction window to assume worst case emission factors for construction equipment and truck trips.

TABLE 5-7
ANNUAL CONSTRUCTION-RELATED GHG EMISSIONS WITHOUT MITIGATION

Emission Source	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
2015-2029	2,209	<1	<1	2,209
2020-2024	860	<1	<1	862
2025-2030	1,271	<1	<1	1,274
2031-2035	1,697	<1	<1	1,698

Project CO_2 emissions estimates were made using CalEEMod v.2013.2.

Mitigation Measure GHG-LRDP-1: Construction-Related GHG Reduction Measures.

The following BAAQMD-suggested measures shall be implemented during demolition and construction activities:

- Use alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment where feasible;
- Use locally sourced building materials for at least 10% of overall materials brought to site; and
- Recycle or reuse at least 50% of construction waste or demolition materials.

Significance after Mitigation: Less than Significant. Implementation of Mitigation Measure GHG-LRDP-1 would ensure that UCSF and its contractors employ feasible, effective measures to reduce GHG emissions during demolition and construction activities. This mitigation measure would therefore reduce this potential impact to less than significant.

Impact GHG-LRDP-2: Implementation of the 2014 LRDP would result in an increase in operational greenhouse gas emissions. (Less than Significant)

Area, Energy, and Indirect Sources. Operational GHG emissions associated with the 2014 LRDP would result from electrical and natural gas usage, water and wastewater transport (the energy used to pump water and wastewater to and from the campus sites) and solid waste generation. GHG emissions from electrical usage are generated when energy consumed by the University is generated by the non-renewable resources of an electrical supplier such as PG&E. GHG emissions from natural gas are direct emissions resulting from on-site combustion for heating and other purposes. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste-related emissions are generated when the increased waste generated by the 2014 LRDP is disposed in a landfill where it decomposes, producing methane gas.[9]

[9] CH_4 from decomposition of municipal solid waste deposited in landfills is counted as an anthropogenic (human-produced) GHG. (USEPA, 2006).

GHG emissions from electrical usage, natural gas combustion, mobile transportation, water and wastewater conveyance, and solid waste were estimated using the CalEEMod model, and are presented in **Table 5-8**. Default GHG emissions factor for PG&E was adjusted to reflect future reductions envisioned by PG&E[10] as well as to account for the portion of electrical power supplied by the Parnassus Central Utility Plant (PCUP). Based on the estimated on-campus power derived from the PCUP a composite GHG emission factor of 605.78 pounds per megawatt hour (MW-h) was assumed. Electrical and natural gas emissions also assume compliance with UCSF policy to achieve a 20% energy reduction beyond Title 24 requirements. Energy and indirect sources from previous converted uses are subtracted from the LRDP total as are the GHG emissions from energy and indirect sources from demolished uses. Energy use (electrical and natural gas) represents approximately 43% of estimated operational GHG emissions from new development and solid waste generation represents approximately 22% of new development emissions. The relatively high percentage of emissions from energy is the result of the electrical intensity factor assumed by CalEEMod for hospital land uses (6.78 kWh/sf/yr for Title 24 electricity and 5.52 kWh/sf/yr for non-Title 24 electricity).

TABLE 5-8
ANNUAL OPERATIONAL GHG EMISSIONS WITHOUT MITIGATION

Emission Source	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
New Development				
Area Sources	10	<1	<1	10
Energy Sources	14,766	<1	<1	14,842
Net New Mobile Sources	9,529	<1	<1	9,535
Solid Waste	3,380	200	<1	7,575
Water and Wastewater	1,196	35	<1	2,169
Subtotal	**28,881**	**235**	<1	**34,131**
Demolition Losses				
Area Sources	<1	<1	<1	<1
Energy Sources	-1,541	<1	<1	-1,548
Solid Waste	-660	-39	<1	-1,479
Water and Wastewater	-70	-1	<1	-114
Subtotal	**-2,271**	**-96**	<1	**-3,141**
Renovation Losses				
Area Sources	<1	<1	<1	<1
Energy Sources	-1,093	<1	<1	-1,094
Solid Waste	-184	-10.9		-413
Water and Wastewater	-180	-2.7	<1	-256
Subtotal	**-1,457**	**-13.6**	<1	**-1,763**
Total				**29,227**

NOTE: Columns may not total precisely due to rounding. Rows may not total precisely due to differences in global warming potential.

10 PG&E, Greenhouse Gas Emission Factors: Guidance for PG&E Customers, April 2013.

Mobile Emission Sources

One of the sources of operational emissions would be increased vehicle emissions from additional staff, patients, visitors and residents. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the LRDP (Adavant, 2014). Implementation of the 2014 LRDP would generate an estimated 14,412 additional daily vehicle trips. GHG emissions from motor vehicle sources were calculated using the CalEEMod. Table 5-8 presents the incremental mobile source GHG emissions associated with the 2014 LRDP, which represent approximately 28% of the total operational GHG emissions from new development.

As shown in Table 5-8, the sum of both direct and indirect GHG emissions resulting from the 2014 LRDP, including emission losses from demolition and renovation would result in an estimated 29,227 metric tons per year of CO_2e.[11] Applying a service population of 12,950 persons associated with the 2014 LRDP (950 new students and 12,000 new faculty and staff) results in emissions of approximately 2.3 metric tons per year of CO_2e/SP. This is below the service population threshold of 4.6 metric tons per year of CO_2e/SP and operational GHG emissions associated with the implementation of the 2014 LRDP across all four campus sites would therefore be a less than significant impact.

Mitigation: None required.

Impact GHG-LRDP-3: Implementation of the 2014 LRDP would not conflict with the AB32 Scoping Plan, the UCSF Climate Action Plan or the UCSF GHG Reduction Strategy (Less than Significant)

Consistency with Assembly Bill 32 and the State of California Climate Change Scoping Plan

The State of California's Climate Change Scoping Plan identifies 39 Recommended Actions (qualitative measures) to address climate change. Of the 39 measures identified, those that would be considered to have the greatest potential applications to the 2014 LRDP would be those actions related to electricity and natural gas use (E), and green building design (GB).

Scoping Plan Actions E-1 and GB-1 together aim to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of more stringent building and appliance standards. Elements of this action include encouraging construction of zero net energy (ZNE) buildings and implementation of passive solar design, all of which are proposed under the 2014 LRDP.

Proposals under the 2014 LRDP would be designed to meet certain criteria established by UCSF, including a UC-imposed goal of achieving a 20% reduction in building energy demand beyond Title 24 requirements. Achievement of such an energy reduction would demonstrate that the 2014 LRDP proposals would be highly energy, waste and water-efficient.

[11] CO_2e in all calculations include CO_2, CH_4 and N_2O.

Consequently, as proposed development under the 2014 LRDP would implement a variety of green building design measures and use renewable energy sources, it would be consistent with the Recommended Actions of the Climate Change Scoping Plan adopted by CARB to achieve the goals of AB 32.

The UCSF GHG Reduction Strategy is included in Appendix D. The GHG Reduction Strategy meets an important requirement of CEQA Guidelines Section 15183.5(b)(1) as a plan that analyzes cumulative GHG impacts. The GHG Reduction Strategy uses established protocols, methodologies and forecasts of existing and future land uses to quantify existing and projected future GHG emissions within the LRDP area. It also establishes a reduction target based on California State law (AB 32), and lays out policies, actions, and performance standards that UCSF will enact and implement over time to reduce emissions. The GHG Reduction Strategy includes GHG reduction measures that, if fully implemented, would achieve an emissions reductions target that is consistent with and supports the state-mandated reduction target embodied in AB 32.

Therefore, implementation of the 2014 LRDP would not conflict with the GHG reduction measures identified in CARB's AB 32 Scoping Plan.

Consistency with Policies and Plans of the UC Regents and University of California Office of the President (UCOP)

In 2007, the Chancellor of UCSF signed the *American College and University President's Climate Commitment* (ACUPCC)[12] to complete an emissions inventory, set target dates and interim milestones for becoming climate-neutral,[13] take steps to reduce GHG emissions, and prepare public progress reports.

As outlined in UCSF's *Climate Action Plan* of December 2009, UC adopted the President's *Policy on Sustainable Practices* in 2007, which committed UC to implementing actions intended to minimize the University's impact on the environment and reduce the University's dependence on non-renewable energy. The policy was most recently revised in November 2013, and now covers the areas of green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, and sustainable water systems.

The GHG Reduction Strategy utilizes two approaches to establishing campus-wide GHG emissions targets for 2020 that are consistent with UC Policy on GHG emissions. One approach is based on UCSF's 1990 emissions inventory, while the other is based on UCSF's verified 2008 inventory, using the 15% downward adjustment recommended by CARB to account for emissions growth since 1990. GHG emissions targets for 2035 are established by determining the

12 American College & University, 2007. Text of the American College & University Presidents' Climate Commitment. Available at: www.presidentsclimatecommitment.org/about/commitment

13 Climate neutrality for UCSF is defined as the University having a net-zero impact on the Earth's climate; it will be achieved by minimizing GHG emissions as much as possible and using other measures to mitigate the remaining GHG emissions (*UCSF Climate Action Plan,* December 2009).

midpoint between the state's 2020 target (1990 levels) and 2050 target (80% below 1990 levels), which is 40% below 1990 levels by 2035.

In order to assist with determining project consistency with the GHG Reduction Strategy, a project consistency checklist has been developed. The checklist is intended to provide individual projects the opportunity to demonstrate that they are minimizing GHG emissions, while ensuring that new development at UCSF will achieve its "fair share" of emissions reductions. The GHG Reduction Strategy stipulates a range of prescribed and planned GHG reductions measures for meeting the 2020 GHG reduction target. The project review checklist screens projects for important GHG reduction measures that, when implemented, will provide confidence that the project will not impede UCSF's ability to meet its 2020 GHG emissions target. Future development undertaken pursuant to the 2014 LRDP would be consistent with UCSF and UCOP goals by demonstrating implementation of GHG reduction measures as well as demonstrating that the growth generated by development projects is consistent with the assumptions of the GHG Reduction Strategy and CAP to attain UCSF and UCOP policies and goals.

Since the 2014 LRDP proposals would incorporate stringent design features that would reduce GHG emissions to a minimal level, the 2014 LRDP would remain in compliance with CARB's AB 32 Scoping Plan, the goals and policies of UCSF and UCOP for reducing GHG emissions, and therefore would ensure that the 2014 LRDP's impact on GHGs is less-than-significant.

Mitigation: None required.

References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

5.7 Hazards and Hazardous Materials Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that no proposals under the 2014 LRDP would be located within an airport land use plan or within 2 miles of a public airport. Therefore, the potential safety hazards for people residing or working at the Parnassus Heights, Mission Bay, Mount Zion or Mission Center campus sites would not be significant.

Impact HAZ-LRDP-1: Implementation of the 2014 LRDP could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (Potentially Significant)

Demolition, Renovation and Construction

Demolition and renovation proposals under the 2014 LRDP at the Parnassus Heights and Mount Zion campus sites may require disturbing older structures and improvements where hazardous building materials such as asbestos, lead-based paint (LBP), polychlorinated biphenyls (PCBs) and mercury may be present. The level of potential impact is dependent upon the age, construction and building materials of each building, as well as contamination received during the life of the structure[14]. Based on the age of existing structures, any of these hazardous building materials could be present that, if disturbed, could expose workers and the public during demolition and renovation activities. Potential exposure to these hazardous building materials and contamination can be reduced through appropriate abatement measures that are legally required by regulation as detailed in Sections 4.7.1 and 4.7.2.

Construction proposals under the 2014 LRDP would require the use of hazardous materials such as fuels, oils, solvents and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact workers, the public, soil, surface waters or groundwater quality. Where applicable (i.e., proposals that disturb more than one acre), the use of construction best management practices implemented as part of a Storm Water Pollution Prevention Plan (discussed further in Section 4.8, *Hydrology and Water Quality*) as required by the National Pollution Discharge Elimination System General Construction Permit would minimize the potential adverse effects to workers, the public, groundwater and soils as described in Section 4.8.2, *Regulatory Considerations.*

San Francisco is among the identified counties where ultramafic bedrock materials are present and have the potential for naturally occurring asbestos fibers, which could be encountered during excavation activities. If present, groundbreaking activities could disturb these fibers causing them to be airborne and potentially adversely affect workers and the public.

[14] For example, laboratories and medical clinics could contain hazardous chemicals in drains or other locations. Either could contain mercury in sink drains due to historic use of mercury thermometers.

The following mitigation measure would ensure that disturbance of underlying materials would not expose workers or the public to naturally occurring asbestos, if present, for any proposed earthwork activities during construction.

> **Mitigation Measure HAZ-LRDP-1:** An Excavation Management Plan shall be prepared by a qualified consultant to include the California Air Resource Board (CARB) Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations to minimize naturally occurring asbestos through the application of best management practices for fugitive dust from construction, grading and excavation operations. Unless site specific testing by a certified laboratory can demonstrate the absence of encountering naturally occurring asbestos, construction specifications shall include implementation of this CARB ATCM.
>
> **Significance after Mitigation:** Less than Significant

Operation

2014 LRDP proposals would include construction of new facilities that would have a range of uses including residential, clinics, laboratories, research and support services. The hazardous materials typically used for the majority of these proposals would be brought onto campus sites packaged in consumer quantities and used in accordance with manufacturer recommendations and in accordance with existing UCSF policies and hazardous materials management plans (e.g., Chemical Hygiene Plan, Online Tag Program for managing hazardous wastes, Environmental Health & Safety Laboratory Safety Design Guide, etc.). Residential uses would likely consist of small quantities of consumer packaged products such as cleaning supplies, paints and other materials that are generally used in accordance with manufacturer recommendations.

The overall quantities of these materials on-site at any one time would not result in large bulk amounts that, if spilled, could cause a significant soil or groundwater contamination issue. Given the required protective measures (i.e., best management practices) and the quantities of hazardous materials typically needed for construction, the threat of exposure to the public or contamination to soil and/or groundwater from construction-related hazardous materials is considered a less than significant impact.

The use, storage and disposal of hazardous materials, including biohazardous waste and low-level radioactive waste, would continue under the 2014 LRDP as part of normal operations and may expand with proposed growth. Any expansion of hazardous materials use, storage and disposal would continue under similar regulatory requirements as existing UCSF policies and hazardous materials management practices as largely documented within the Chemical Hygiene Plan. The Chemical Hygiene Plan is reviewed and updated on an annual basis and includes safety procedures, training requirements, personal protective equipment requirements, signage protocols, emergency response details and disposal guidelines that is in accordance with all federal, state, and local regulatory requirements.

Adherence to current regulatory requirements and UCSF policies and plans would provide sufficient control to minimize potential exposure to hazardous materials to a less than significant level.

Mitigation: None required.

Impact HAZ-LRDP-2: Implementation of the 2014 LRDP could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools. (Less than Significant)

There are several schools located within one-quarter mile of UCSF campus sites, including a potential San Francisco Unified School District school on Block 14 on the Mission Bay campus site, which is currently reserved for a school site. While there may be net changes in the amount and type of hazardous materials handled, stored, and disposed of, the proposed 2014 LRDP would not result in a substantive change in emissions or handling of hazardous materials and all practices would continue to adhere to federal, state, local and UCSF policies and regulatory requirements. In general, existing hazardous materials use for administrative support services or even research laboratory purposes at UCSF does not involve large enough quantities of hazardous materials or result in emissions that would represent potential health hazards to schools near UCSF campus sites. Adherence to current regulatory requirements and UCSF policies and plans would provide sufficient control to minimize potential exposure to hazardous materials to a less than significant level.

Mitigation: None required.

Impact HAZ-LRDP-3: 2014 LRDP proposals are located on campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public. (Potentially Significant)

Two listings for the Parnassus Heights campus site are found on the Geotracker database maintained by the State Water Resources Control Board (SWRCB) for releases of diesel found in subsurface soil (SWRCB, 2014a and SWRCB, 2014b). A release was documented for 315 Parnassus Avenue, an adjacent property to the campus site, and the case was subsequently closed in 1999 indicating that no further action was required. The other release (diesel fuel) on the UCSF campus at 50 Medical Center Way was also closed in 2001. As such, despite being included on a hazardous materials sites list pursuant to Government Code Section 65962.5, there is no indication that any known threat to human health or the environment remains on the Parnassus Heights campus site.

The Mount Zion campus is not found on the Geotracker or EnviroStor databases maintained by the SWRCB and Department of Toxic Substances Control (DTSC) (SWRCB, 2014c and DTSC, 2014). As such, there is no indication that any known threat to human health or the environment is present from historical activities at the Mount Zion campus site.

The entire Mission Bay campus site has a long history of industrial use and a number of environmental investigations, cleanups and removals of underground storage tanks have occurred, many of which are included in the Geotracker database. Although many of these cases have been closed indicating that no further action was required, there is still a potential to encounter previously unidentified contaminants. A Risk Management Plan (RMP) was developed for the Mission Bay

campus site for previous construction efforts and has been effective in reducing potential impacts as a result of past releases of hazardous materials. This document has been periodically amended by the San Francisco Bay Regional Water Quality Control Board (RWQCB). As called for in the RMP, at the onset of each project, UCSF hires a qualified geotechnical/environmental consultant to do soil testing and prepare a site-specific report identifying any necessary remediation. The RMP provides construction protocols and notification procedures that would protect workers, the public, and the environment from any legacy contaminants that may be discovered during groundwater breaking activities.

Considering the past industrial uses of the site, it is also possible for volatile components of subsurface contaminants, if present, to migrate through building foundations exposing residents and visitors to potential soil vapor contamination. Previous studies have identified methane as an issue of concern at the Mission Bay campus site. Working with the RWQCB, BAAQMD, and the San Francisco Department of Public Health on a project by project basis, UCSF installs subsurface engineered control systems to address venting of volatile components of subsurface contaminants, protect public health, and ensure that maximum exposure levels for building occupants are not exceeded. Characterization and risk analysis of any subsurface contaminants would be addressed either through remediation prior to commencement of construction or through design elements such as vapor barriers that would protect future occupants from adverse health effects.

The Mission Center campus site is not found on the EnviroStor database maintained by the DTSC but does contain three cases (i.e., listed as Alioto's Garage, Commercial Building and International Disposal) found on the Geotracker database maintained by the SWRCB (DTSC, 2014 and SWRCB, 2014). The three case listings are classified as closed, indicating that either the identified contamination was minimal or remediated to point such that no further action was warranted (SWRCB, 2014). However, to ensure that potential hazard to the public from residual contamination is minimized, the following mitigation measure shall be required at the Mission Center campus site:

> **Mitigation Measure HAZ-LRDP-2:** Prior to development on the Mission Center campus site, a Soil Management Plan shall be prepared by a qualified environmental consulting firm to reflect current regulatory requirements and risk management protocols that are in accordance with Regional Water Quality Control Board oversight. The Plan shall include measures to address protocols for identifying, handling, and characterizing suspect contaminated soils. Notification and sampling requirements for adequate characterization shall be in accordance with the overseeing agency (RWQCB or SFDEH) and any additional removal or remediation work completed prior to occupancy of the new structure.
>
> **Significance after Mitigation:** Less than Significant

Impact HAZ-LRDP-4: Implementation of the 2014 LRDP would not result in a safety hazard for people residing or working in the vicinity of a private airstrip. (Less than Significant)

The existing facilities at the Mission Bay campus site include a helicopter landing pad (helipad) which will be served by turbine-powered helicopters operated by REACH and Calstar. New

facilities under the 2014 LRDP could potentially expose new residents, visitors, or employees to safety hazards associated with the proximity to this helipad.

As discussed in the EIR for Phase I of the Mission Bay Medical Center, according to National Transportation Safety Board (NTSB), data collected over the period of 1997 through 2006 indicates that turbine-powered helicopters averaged 1.1 fatal accidents per 100,000 flight hours, or approximately one fatal accident per 90,000 hours of flight (Barnett, 2008). Using an average helicopter flight duration of approximately 20 minutes, the accident rate for a turbine helicopter is one fatal accident per 270,000 flights.

The accident rate for medical helicopters is slightly higher when compared with this number and averages approximately 1.8 fatal accidents per 100,000 flights (Barnett, 2008). Using the 20 minute estimate for an average helicopter flight, as assumed above, this equals to approximately one fatal accident per 180,000 flights. This risk is increased where the landing site is unfamiliar to the pilot, which is more common during emergency scene calls and would not be the case for the Mission Bay campus location because all helicopter flights will be pre-arranged between medical facilities and UCSF. Of the 56 fatal accidents in US that involved medical helicopters (1991-2007), four occurred while landing or taking off from a hospital helipad. This rate equals approximately 1 in 2.5 million and is considered a measurable yet very small risk (Barnett, 2008). None of the four fatal helicopter events at a hospital caused any ground deaths to third parties, although in one accident, a hospital security guard who was helping service the helicopter was fatally injured. Moreover, based on the statistics associated with medical helicopter operations since 1991 in the United States, the observed risk to third parties has been negligible.

The helicopter flight operations risk at the Mission Bay campus site would likely be lowered further by the fact that the helipad is located in close proximity to the bay where no physical barriers exist to obstruct views of the approach. Furthermore, REACH and Calstar have performed over 69,000 hours of service in combination, and have suffered one fatal accident, a rate that is consistent with the overall accident rate statistics described above. The accident that occurred did not cause any fatalities on the ground.

Statistics also reveal that helicopter accidents that cause serious injuries to third parties or substantial property damage are also extremely rare. Out of 132 incidents involving medical helicopters from 1991 to 2005,[15] none caused serious injury to a third party and one caused modest damage to a hospital building (Barnett, 2008).[16]

Based on information documenting national helicopter safety patterns provided above, it can be assumed that, while the risk of death or injury to third parties, and risk of property damage to structures near the project site is not zero, this risk is very small. The twelve million medical helicopter flights in the US since 1991 have caused no deaths to third parties in the vicinity of hospitals. Based on this and other statistics noted above, the likelihood of a third party death resulting from the continued operation of the inter-facility transfer operation is also extremely

15 This statistical record was achieved in the course of approximately twelve million medical helicopter flights.
16 One medical flight hit a home after losing visibility en route, causing serious injury to three occupants. But this accident was not close to the destination hospital.

small. As a result, implementation of the 2014 LRDP would have a less than significant impact as to safety for people residing or working in the vicinity of a private airstrip.

Mitigation: None required.

Impact HAZ-LRDP-5: Implementation of the 2014 LRDP would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

Fire protection and emergency response services would continue to be provided to UCSF campus sites by the City of San Francisco Fire Department. The Fire Department delivers emergency and non-emergency services, including rapid assistance for medical, fire or other hazardous situations, to the entire City. Any proposed improvements associated with the 2014 LRDP (including development of Blocks 33 and 34) would be required to ensure that the street system can accommodate emergency response and evacuation. In general, implementation of the 2014 LRDP would not substantively change the circulation plan at UCSF campus sites and all improvements would be designed to ensure appropriate emergency access to and egress from all areas. Additionally, all project-specific designs, including private internal circulation and building site plans, would be subject to review and approval by the City for emergency response and evacuation concerns. UCSF design criteria and existing emergency response requirements are sufficient to ensure that the potential health and safety effects resulting from possible impairment or implementation of any emergency response or evacuation plans would remain a less-than-significant impact.

Mitigation: None required.

Impact HAZ-LRDP-6: Implementation of the 2014 LRDP would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. (Less than Significant)

The California Department of Forestry and Fire Protection has identified urban areas considered at risk as a fire-threatened community as part of the Wildland Urban Interface program. San Francisco is among the 874 communities currently on the Communities at Risk List.

While all of California is subject to some degree of fire hazard, there are specific features that make certain areas more hazardous. The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code 4201-4204 and Government Code 51175-89). According to mapping compiled by the Association of Bay Area Governments (ABAG), of the four UCSF campus sites being evaluated here, only the Parnassus Heights campus site is located in an area considered to be a community at risk while the other three are mapped as urbanized areas (ABAG, 2014).

According to mapping for the City of San Francisco's Hazard Mitigation Plan, the Parnassus Heights campus site, which includes the Mount Sutro Open Space Reserve (Reserve), is located in an area considered to be a high to very high potential for wildfire (URS, 2008). As discussed in the Project Description (Section 3.9.1.1), under a separate process that began prior to the 2014 LRDP, UCSF proposed management activities within the Reserve which were the subject of a Draft EIR published in January 2013. Subsequently, in light of the elevated fire danger resulting from California's current drought conditions, UCSF revised its proposal to focus on reducing the danger of wildfire. It retained a professional forester with a background in firefighting to identify fire hazard reduction measures for the Reserve area. The identified fire hazard reduction measures are consistent with best management practices applied throughout California in forests located near urban areas. At the time of preparation of this document, UCSF is carefully considering the public feedback received to date to determine the best path forward. It is anticipated that the final plan, at a minimum, will include fire hazard reduction measures as recommended by the forester. Those recommendations include thinning of trees and understory in targeted areas near UCSF buildings, neighboring buildings, trails, and Medical Center Way. Any changes to the management activities analyzed in the January 2013 Draft EIR would be reviewed to determine what additional environmental analysis would be needed, if any, to comply with CEQA, separate from the 2014 LRDP and EIR.

2014 LRDP activities would not substantially increase the population at the Parnassus Heights campus site, and would not increase the number of structures within the Reserve. In addition, under a planning process separate from the 2014 LRDP, UCSF is seeking to minimize the wildfire danger within the Reserve. Therefore, the potential impact from exposure of persons or structures to wildland fires attributable to the 2014 LRDP would be less than significant.

Mitigation: None required.

References

Association of Bay Area Governments (ABAG), Wildland Urban Interface-Fire Threatened Communities map, http://quake.abag.ca.gov, 2014.

Barnett, Arnold, *Risk Assessment for Helicopter Operations at the University of California-San Francisco Medical Center at Mission Bay*, March, 2008.

State Water Resources Control Board (SWRCB), *Geotracter database*, http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607515600, accessed February 3, 2014a.

State Water Resources Control Board (SWRCB), *Geotracter database*, http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607501103, accessed February 3, 2014b.

State Water Resources Control Board (SWRCB), *Geotracter database*, http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=San+Francisco%2C+CA, accessed February 14, 2014c.

Department of Toxic Substances Control (DTSC), Envirostor Database, http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=1600%20Divisidero,%20San%20Francisco%20CA&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true, accessed February 14, 2014.

5.8 Hydrology and Water Quality Impacts of the 2014 LRDP

The Initial Study determined that implementation of the 2014 LRDP would not result in substantial depletion of groundwater supplies or interfere with groundwater recharge. Therefore, no impact regarding groundwater would result from implementation of the 2014 LRDP.

Impact HYD-LRDP-1: Implementation of the 2014 LRDP could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality. (Less than Significant)

New development proposed under the 2014 LRDP would require demolition, excavation, grading and construction activities that would require temporary disturbance of surface soils and removal of existing pavement and sub-surface structures (if present). These activities would expose soil to water runoff as well as entrainment of sediment in the runoff. If dewatering were necessary during construction, the collected water would likely contain suspended sediments and would require settling before discharge to the City's Combined Sewer System (CSS). Sediment in runoff and deposits of soil and related debris from haul truck tires on local streets could increase the amount of sediment entering the storm drains, which could potentially clog drain inlets and reduce the flow capacity of the storm drains. The accumulation of this material could potentially result in increased localized ponding or flooding, particularly after large storm events.

The use of construction equipment as well as the delivery, handling and storage of construction materials and waste could contaminate stormwater that could negatively impact water quality. Potential contaminants include, but are not limited to (CSW/Stuber-Stroeh, 2011):

- Petroleum hydrocarbons and metals from stockpiled soils excavated from the site
- Fuel from storage drums
- Diesel from refueling trucks
- Oils and grease from miscellaneous heavy equipment
- Sewage from portable sanitary facilities
- Sediment from construction generated waste – piles of concrete, rock and debris
- Sediment from rock crushing activities
- Hazardous materials storage-hydraulic oil, motor oil, and lubricating fluid
- Spills and releases of hydrocarbons and related pollutants from routine light maintenance activities such as fluid topping off, and welding and repairing belts and gears of heavy equipment

Polluted stormwater runoff could violate water quality standards and/or waste discharge requirements established in the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction and the NPDES discharge permits for the Southeast and Oceanside Treatment Plants.

In accordance with the Construction General Stormwater Permit, UCSF would be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) for proposed development activities to minimize water quality impacts during construction and demolition. SWPPPs will identify pollutant sources within the construction area and recommend site-specific BMPs regarding control of sediments in runoff and storage and use of hazardous materials to prevent discharge of pollutants into stormwater. Likely BMPs include, but are not limited to:

- Erosion control practices
- Sediment control practices
- Practices to reduce the tracking of sediment onto public and private roads
- Practices to prevent or minimize wind erosion
- Practices to minimize contact with stormwater
- Construction material loading and unloading
- Waste management and disposal
- Stormwater run-on and run-off controls
- Non-stormwater discharges and management
- Maintenance, inspection, and repair of structural controls
- Spill prevention and control
- Post-construction stormwater management
- Development of a Rain Event Action Plan (REAP)
- Construction site monitoring and reporting
- Water quality sampling and analysis

In addition, proposed development activities will need to obtain a water quality certification from the RWQCB for construction activities, which would also require implementation of BMPs and specific measures for the protection of water quality during construction.

The revised MS4 General Permit includes the following provisions for post-construction stormwater management:

- By July 2015, UCSF projects that create and/or replace (including projects with no net increase in impervious footprint) greater than 2,500 square feet of impervious surface must include the following:
    - Site design measures (porous pavement, setbacks, impervious area disconnection) to reduce project site runoff
    - LID design standards to effectively reduce runoff and pollutants from the project site
        - Source control measures including permanent and/or operational source control measures at areas such as loading docks, fuel dispensing areas, pools
        - Numeric sizing criteria for stormwater retention and treatment

  - Stormwater treatment measures and baseline hydromodification management measures

- By July 2016, UCSF shall implement an operation and maintenance program for the post-construction stormwater management measures.

Compliance with the MS4 and SWPPP regulations is expected to protect water quality and help reduce the impacts of the 2014 LRDP proposals to a less than significant level.

Mitigation: None required.

Impact HYD-LRDP-2: Implementation of the 2014 LRDP would not substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. (Less than Significant)

Demolition, renovation and construction activities proposed under the 2014 LRDP would not significantly change the volumes of stormwater runoff or the direction of flows to the CSS. Measures to prevent and minimize erosion and its potential effects on storm drain siltation are addressed under Impact HYD-LRDP-1. The impact would be less than significant.

Mitigation: None required.

Impact HYD-LRDP-3: Implementation of the 2014 LRDP would not generate runoff that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. (Less than Significant)

As discussed above under Impact HYD-LRDP-2, demolition, renovation and construction activities proposed under the 2014 LRDP would not significantly change the volumes or routing of anticipated stormwater. The proportion of impermeable surfaces at each respective campus site would not significantly change. Measures to protect water quality are described above under Impact HYD-LRDP-1. The impact would be less than significant.

Mitigation: None required.

Impact HYD-LRDP-4: Implementation of the 2014 LRDP would place housing within a 100-year flood hazard area, potentially impede flood flows and potentially expose people to a significant risk of loss, injury or death associated with flooding. (Less than Significant)

The 2014 LRDP proposes new housing at the Parnassus Heights and Mission Bay campus sites. Proposed housing at the Parnassus Heights campus site would not be located within a flood hazard area. As discussed in greater detail in Chapter 7, although portions of the Mission Bay campus site proposed for housing under the 2014 LRDP are within flood hazard areas, UCSF is currently raising ground elevations above the Base Flood Elevation via surcharging to expedite soil settlement and subsequent placement of engineered fill to specified elevations above the

100-year flood level. It is anticipated that these efforts will reduce the effects of flooding on proposed housing to a less than significant level.

Mitigation: None required.

Impact HYD-LRDP-5: Implementation of the 2014 LRDP would expose people or structures to a significant risk of loss, injury or death due to tsunami, seiche or mudflow. (Less than Significant)

The Mount Zion and Mission Center campus sites would not be exposed to tsunami, seiche or mudflow. Similarly, the Parnassus Heights campus site would not be subject to tsunami or seiche. However, much of Mount Sutro is located in a landslide hazard area. This topic is addressed above in Section 5.1.5 and also in Section 6.5.

The Mission Bay campus site would not be subject to mudflow, but portions of the campus site could potentially be inundated by a tsunami or seiche. Impacts to structures would be less than significant with incorporation of specific design features such as seismic structural elements that would increase the resilience of structures to tsunamis or seiches. Impacts to people would be less than significant with implementation of the San Francisco outdoor warning system, which would notify people of an impending tsunami or seiche. See Section 7.8 for further detail regarding potential exposure to tsunami at the Mission Bay campus site.

Mitigation: None required.

Impact HYD-LRDP-6: Implementation of the 2014 LRDP would expose people or structures to an increased risk of loss, injury or death due to flooding from sea level rise. (Less than Significant)

Portions of the Mission Bay campus site are potentially vulnerable to inundation from sea level rise, particularly if higher estimates of sea level rise are validated over time. While various state and local guidelines exist for planning for and anticipating sea level rise, there are currently no legally enforceable engineering or design standards that can be applied to proposed development in vulnerable areas aside from those that are based on existing (i.e. without sea level rise) conditions (e.g. the City's Floodplain Management Ordinance). In addition, there exists no consensus among planners and engineers about how to reconcile uncertainty in anticipated rates of sea level rise with the typical horizons for capital improvement projects and long range development plans such as the 2014 LRDP, with its 20 year time horizon. Discussion of the potential effects and mitigation of sea level rise at the Mission Bay campus site is discussed in Section 7.8.

Mitigation: See Section 7.8.

References

CSW/Stuber-Stroeh Engineering Group, Inc., *Storm Water Pollution Prevention Plan*, UCSF Medical Center at Mission Bay, San Francisco, California, August, 2011.

5.9 Land Use and Planning Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that implementation of the 2014 LRDP would not physically divide an established community. Therefore, no impact would result regarding physical division of an established community.

The Initial Study also determined that implementation of the 2014 LRDP would not conflict with any applicable habitat conservation plan or natural community conservation plan. Therefore, no impact regarding conflicts with such plans would result from implementation of the 2014 LRDP.

Impact LU-LRDP-1: Implementation of the 2014 LRDP would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

Upon adoption by the Regents, the proposed 2014 LRDP will replace the 1996 LRDP, as amended, and become the applicable campus land use plan for UCSF. Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. The University is the only agency with land use jurisdiction over programs and projects proposed at UCSF campus sites by the 2014 LRDP. Therefore, all proposed activities that would be in general conformity with the 2014 LRDP would have no significant land use impacts. However, UCSF also considers the land use policies and zoning regulations of the City when analyzing potential land use impacts under CEQA. The 2014 LRDP is not expected to conflict with those City plans and policies adopted for the purpose of avoiding or mitigating an environmental effect.

Functional Zones

The 2014 LRDP's proposed functional zones are generally consistent with the existing zones at the Parnassus Heights and Mission Bay campus sites. Proposed changes at these campus sites include reclassifying some areas as Housing in order to match uses proposed by the 2014 LRDP and combining the current Campus Community and Logistical Support zones into a single Support zone. Some building sites on the Parnassus Heights campus site would be reclassified as Open Space and would become part of the Mount Sutro Open Space Reserve subsequent to the demolition of existing buildings as proposed by the 2014 LRDP. A new separate Parking zone is proposed for areas of structured parking. Blocks 33 and 34, proposed as the new East Campus at Mission Bay, have not been designated with functional zones by UCSF. As part of the approval of the 2014 LRDP, the Regents also would designate these blocks for Research and Parking.

The Mount Zion campus site would be newly designated with functional zones under the 2014 LRDP. The majority of the campus site is proposed as Clinical, with smaller areas classified as Research and Parking.

The Mission Center campus site has not been designated with functional zones by UCSF. Construction of an additional office building under the 2014 LRDP would be consistent with the existing use on this campus site.

The functional zone changes proposed by the 2014 LRDP do not present land use conflicts with adjacent existing land uses on the Parnassus Heights, Mission Bay or Mount Zion campus sites. See Sections 6.9, 7.9 and 8.9 for detailed discussion of proposed functional zone changes at these respective campus sites. Compatibility between adjacent existing and proposed functional zones was taken into consideration in developing the proposed zones in the 2014 LRDP. Existing land use patterns reflect campus development guided by the planning principles embodied in the previous LRDPs. Therefore, implementation of the 2014 LRDP would have a less-than-significant impact regarding consistency with land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect.

Consistency with Regents' Resolution

With the 2014 LRDP UCSF is proposing that the Regents update the 1976 Regents' Resolution by modifying the way space and population are monitored at the Parnassus Heights campus site. As discussed in detail in Chapter 6, the 2014 LRDP would be consistent with the space and population commitments for the Parnassus Heights campus site upon adoption by the Regents of the proposed update to the 1976 Regents' Resolution and the impact would be less than significant.

Mitigation: None required.

Impact LU-LRDP-2: The 2014 LRDP would not result in substantial incompatibilities with adjacent land uses. (Less than Significant)

As noted above under Impact LU-LRDP-1, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. However, UCSF also considers the land use policies and zoning regulations of the City when analyzing potential land use impacts under CEQA. Development proposed by the 2014 LRDP could be accommodated by a variety of building configurations and site plans that would meet the LRDP goals and objectives, and remain responsive to the City's land use plans and policies.

Building renovations proposed by the 2014 LRDP at the Parnassus Heights and Mount Zion campus sites would be limited to the interiors of Moffitt Hospital, UC Hall, Millberry Union towers and the Main Hospital at Mount Zion. No impacts would occur with respect to conflicts with City regulations for these renovations.

Although most new buildings proposed under the 2014 LRDP have not yet been designed, conceptual drawings indicate that proposed buildings would be largely consistent with City Planning Code designations for the building sites, if applicable. However, the proposals for the New Hospital Addition at the Parnassus Heights campus site and the new office/research building at the Mount Zion campus site as currently conceptualized would conflict with Planning Code height and/or bulk regulations for these sites. See Sections 6.9 and 7.9, respectively, for discussion of compatibility of these proposed buildings with adjacent land uses.

In order to meet the SB 1953 mandate at the Parnassus Heights campus site, inpatient uses currently at Moffitt Hospital must be relocated prior to 2030, necessitating the construction of the New Hospital Addition. Therefore, to the extent feasible, UCSF would design the New Hospital Addition to avoid or minimize this conflict with the City's Planning Code, but it would not be possible to replace all clinical uses currently in Moffitt Hospital with a new hospital that complies with the City's zoning regulations for this site. UCSF would also strive to design the proposed building at the Mount Zion campus site to avoid or minimize conflicts with the Planning Code.

Notwithstanding the potential for conflicts with the Planning Code, implementation of the 2014 LRDP would not result in any incompatibility with adjacent land uses. 2014 LRDP development would occur on campus sites already developed with other similar UCSF facilities, with the same or similar land uses.

Mitigation: None required.

5.10 Noise Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that there are no public use airports within two miles of the Parnassus Heights, Mission Bay, Mount Zion or Mission Center campus sites. Therefore, no impact regarding exposure to excessive noise levels from public use airports would result from implementation of the 2014 LRDP.

The Initial Study also determined that there are no private airstrips within the vicinity of the Parnassus Heights, Mount Zion or Mission Center campus sites. Therefore, no impact regarding excessive exposure to excessive noise levels from private airstrips would result from implementation of the 2014 LRDP at these campus sites.

Impact NOI-LRDP-1: Implementation of the 2014 LRDP would result in increased ambient noise levels during demolition and construction activities. (Potentially Significant)

As noted in the Regional Setting section, the hours that construction activity noise can occur is described in Sections 2908 of the Police Code, known as the San Francisco Noise Ordinance. Although UCSF is not subject to the noise ordinance, it strives to be consistent with it. Section 2908 prohibits any person, between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day, from erecting, constructing, demolishing, excavating for, altering or repairing any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line.

Demolition and construction proposed under the 2014 LRDP would require the use of heavy duty off-road construction equipment as well as haul trucks to remove demolition debris. The number of daily truck trips would depend on the pace of demolition. Equipment typically involved with large-scale demolition would include excavators, dozers, loaders and trucks for off-hauling demolition debris. Additionally, a hoe-ram (a back-hoe fitted with a ramming bit) may be used to break up large concrete structures. Construction activities would involve excavation, grading, and earth movement and, potentially, pile driving. **Table 5-9** shows typical noise levels produced by various types of construction equipment typically involved with large-scale construction projects that would occur at a reference distance of 50 feet from the source. Noise levels at and near demolition and construction sites would fluctuate depending on the particular type, number and duration of uses of various pieces of construction equipment at any given time.

Proposed building renovations are assumed to be predominantly interior renovations and would not involve operation of off-road construction equipment other than a small crane or man lift that would not be expected to substantially alter the existing noise environments. Since these activities would be largely conducted within the existing buildings they would not result in significant construction noise impacts.

TABLE 5-9
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 Feet)
Dump truck	76
Portable air compressor	78
Concrete mixer (truck)	79
Crane	81
Excavator	81
Dozer	82
Paver	77
Generator	81
Backhoe	78
Pile driver	101
Auger Drill Rig	84

SOURCE: FHWA, 2006.

Implementation of the open space and utility proposals at the Parnassus Heights campus site may also involve limited operations of some types of construction equipment, such as a backhoe. However, the limited scope and duration of operation involved with these activities would not be expected to substantially alter the existing noise environment.

Analysis provided in Sections 6.10, 7.10, 8.10 and 9.10 indicates that noise levels from proposed demolition and construction activities at the four main campus sites could exceed existing noise levels by as much as 19 dBA. Noise levels from proposed demolition activities at the Parnassus Heights and Mount Zion campus sites could exceed 10 dBA over existing levels (a perceived doubling of loudness) during peak demolition activities. Receptors near these demolition sites would also experience noise levels approaching or exceeding a speech-interference threshold of 70 dBA and result in a temporary but significant construction noise impact from demolition activities.

Implementation of **Mitigation Measure NOI-LRDP-1a** and **b** would reduce noise levels associated with demolition and construction activities at the four main campus sites by 5 to 10 dBA. However, it is likely that noise levels in excess of 70 dBA would still occur at some sensitive receptors at the Parnassus Heights and Mount Zion campus sites after mitigation. Consequently, this impact, although temporary, would be significant and unavoidable at the Parnassus Heights and Mount Zion campus sites.

Mitigation Measure NOI-LRDP-1a: Construction Noise Control Measures.

UCSF contractors shall employ site-specific noise attenuation measures during construction to reduce the generation of construction noise. These measures shall be included in a Noise Control Plan that shall be submitted for review and approval by UCSF to ensure that construction noise is consistent with the standards set forth in the City's Noise Ordinance. Measures specified in the Noise Control Plan and implemented during project construction shall include, at a minimum, the following noise control strategies:

- Equipment and trucks used for construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds.

- Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dBA. Quieter procedures, such as use of drills rather than impact tools, shall be used where feasible.

- Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or include other measures.

Mitigation Measure NOI-LRDP-1b: Construction Hours.

Construction hours are restricted to the hours listed in the table below. In rare circumstances, work may need to occur outside of these work hour limits. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts.

Construction Hours

	"Not Noisy" Work[1]		Noisy Work	
	Regular hours	**Extended hours[2]**	**Regular hours**	**Extended hours[1]**
Monday - Friday	7:00 a.m. to 5:00 p.m.	5:00 p.m. to 8:00 p.m.	8:00 a.m. to 5:00 p.m.	
Saturday		8:00 a.m. to 5:00 p.m.		9:00 a.m. to 4:00 p.m.
Sunday		8:00 a.m. to 5:00 p.m.		

1 "Not Noisy" work = 80 decibels or less at 100 feet; "Noisy" work = more than 80 decibels at 100 feet.

2 Extended hours to be considered by UCSF Community and Government Relations with advance notice from the project manager.

Significance after Mitigation: Less than Significant

Impact NOI-LRDP-2: Implementation of the 2014 LRDP would result in increased ambient noise levels during pile-driving activities. (Potentially Significant)

Noise during construction activities could exceed existing daytime noise levels at all four campus sites by as much as 19 dBA. If an impact pile driver were required, it could result in an increase of up to 35 dBA over existing noise levels, resulting in intermittent periods of significant noise increase over existing conditions during the pile installation phase. Implementation of **Mitigation Measure NOI-LRDP-2** would reduce the effects of pile-driving activities

Mitigation Measure NOI-LRDP-2: Pile-Driving Noise-Reducing Techniques and Muffling Devices.

Noise-reducing pile-driving techniques shall be employed during project construction. These techniques shall include:

- Installing cast in place concrete piles. Noise from auger drilling is 17 dBA less than an impact pile driver.
- Vibrating piles into place, and installing shrouds around the pile-driving hammer where feasible.
- Installing intake and exhaust mufflers on pile-driving equipment
- Implement "quiet" pile-driving technology (such as pre-drilling of piles and the use of more than one pile driver to shorten the total pile driving duration).
- Use cushion blocks to dampen impact noise. Cushion blocks are blocks of material that are used with impact hammer pile drivers. They consist of blocks of material placed atop a piling during installation to minimize noise generated when driving the pile. Materials typically used for cushion blocks include wood, nylon and micarta (a composite material).
- At least 48 hours prior to pile-driving activities, UCSF shall notify building owners and occupants within 600 feet of the project site of the dates, hours, and expected duration of such activities.

Significance After Mitigation: Significant and Unavoidable. Mitigation Measure NOI-LRDP-2 would reduce the severity of noise generated by pile-driving activities and reduce the potential annoyance to nearby residents and others who could be disturbed by pile-driving to the extent feasible. If piles can be installed though drilling and cast in place measures then this mitigation measure would result in a less than significant impact.

However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration, even after mitigation the noise level above the ambient noise level would likely exceed 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.

Impact NOI-LRDP-3: Implementation of the 2014 LRDP would generate ground-borne vibration during demolition and construction activities. (Less than Significant)

The types of construction and demolition-related activities associated with propagation of ground-borne vibration include pile driving, use of hoe-rams for demolishing large concrete structures and foundations and caisson drilling.

The only demolition activity associated with propagation of ground-borne vibration would be use of hoe-rams for demolishing large concrete structures or foundations. Operation of a hoe ram can result in peak particle velocities (PPV) of up to 0.089 inches per second (in/sec) at a distance of 25 feet (FTA, 2006). The Caltrans threshold of architectural damage for conventional sensitive structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and

0.25 in/sec PPV for historic and older buildings. As discussed in Sections 6.10 and 7.10, vibration from hoe-ram operation would not exceed the Caltrans criterion for the protection of fragile older buildings, or the criterion for newer buildings at any off campus receptors at the Parnassus Heights or Mount Zion campus sites. Consequently, the demolition proposals under the 2014 LRDP would have a less-than-significant impact to ground-borne vibration.

Of the equipment likely to be used during construction activities, pile driving has the potential to result in the highest levels of ground-borne vibration. Pile driving, if required, could take a number of months, and would occur during daytime hours, consistent with the City's Police Code. Pile driving can result in peak particle velocities (PPV) of up to 1.5 inches per second (in/sec) at a distance of 25 feet (FTA, 2006), but typically results in an average of about 0.644 PPV at that distance. The Caltrans threshold of architectural damage for conventional sensitive structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings. As discussed in Sections 6.10, 7.10, 8.10 and 9.10, vibration from pile driving would not exceed the Caltrans criterion for the protection of fragile older buildings, or the criterion for newer buildings at any off campus receptors.

Consequently, demolition or construction proposals under the 2014 LRDP would have a less-than-significant impact with regard to ground-borne vibration.

Mitigation: None required.

Impact NOI-LRDP-4: Implementation of the 2014 LRDP could cause a long-term increase in ambient noise levels in the vicinity. (Less than Significant)

No long-term noise sources and no long-term noise increases would be associated with demolition proposals at the Parnassus Heights and Mount Zion campus sites under the 2014 LRDP. Renovation proposals at these campus sites may result in subtle increases in roadway traffic, but considered within the context of 2014 LRDP proposals at these sites the roadway noise increase would be less than significant. No new mechanical or other stationary noise sources would be introduced by these renovations. Consequently, operational noise increases due to these renovation proposals would be less than significant.

Long-term noise sources associated with operation of renovated buildings and new buildings would primarily consist of marginal increases in roadway traffic resulting from new and repurposed land use. There will likely be some new mechanical equipment (e.g. heating ventilation and air conditioning) associated with operation of the new buildings. The potential locations of such equipment in not known given that these buildings have not yet been designed. However, such equipment would be operated to conform to the extent feasible with the requirements of the City of San Francisco noise ordinance. Additionally, new mechanical equipment would effectively replace older and potentially noisier HVAC equipment currently existing at buildings that would be demolished.

Operation of buildings proposed under the 2014 LRDP would be considered to generate a significant impact if it resulted in a permanent increase in ambient noise levels greater than 3 dBA in the building vicinity above levels existing without the building for areas already impacted by noise. Noise levels were determined for this analysis using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model and the turning movements provided in the traffic study for the 2014 LRDP, for Existing (2014), Existing Plus LRDP and LRDP horizon year, 2035, conditions. Peak hour intersection turning data from the traffic study were analyzed to evaluate traffic increases and resulting traffic-generated noise increases on roadway links most affected by LRDP -related traffic. The roadway segments analyzed and the results of the noise increases resulting from modeling at each of the four campus sites are presented in Sections 6.10, 7.10, 8.10 and 9.10.

As indicated in the campus site analyses, the increases in traffic noise in the vicinity of the campus sites from the Existing Plus LRDP traffic scenario compared to the Existing traffic scenario would increase peak hour noise levels by less than 3 dBA at all roadway segments.

Overall, long-term increases in ambient noise levels resulting from implementation of the 2014 LRDP would be less than significant.

Mitigation: None required.

Impact NOI-LRDP-5: Implementation of the 2014 LRDP would result in exposure of persons (new residents) to noise levels in excess of standards established in the City of San Francisco General Plan. (Less than Significant)

The 2014 LRDP would renovate and repurpose UC Hall and the Millberry Union towers on the Parnassus Heights campus site to residential uses, and construct new housing on the Proctor site and Fifth and Parnassus avenues, as well as on Block 15 on the Mission Bay campus site, resulting in new sensitive receptors at these locations. Long-term noise monitoring conducted at both campus sites indicates existing exterior noise levels range from 61 to 64 DNL, which is within the "conditionally acceptable" noise exposure category for residential uses as defined by the City of San Francisco General Plan Noise Element (greater than 60 DNL).

A conditionally acceptable noise exposure is defined as one in which new construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Both UC Hall and the Millberry Union towers have air-handling systems and windows are generally kept closed. Proposed housing units on Block 15 would have air handling systems. Additionally, Section 1207 of the California Building Code (Title 24 of the California Code of Regulations) establishes material requirements in terms of sound transmission class (STC) [17] of 50 for all common interior walls and floor/ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public area. This requirement would be sufficient to achieve

[17] The STC is used as a measure of a materials ability to reduce sound. The STC is equal to the number of decibels a sound is reduced as it passes through a material.

the additional 1 to 4 dBA of sound reduction necessary to achieve the noise exposure goals of the San Francisco General Plan.

Once operational in 2015, the Phase 1 Medical Center at Mission Bay will include a helipad that will have occasional helicopter operations. Noise contours for helicopter operations at this building were developed as part of the EIR for the UCSF Medical Center at Mission Bay. These contours indicate that the proposed Block 15 housing buildings would be over 500 feet north of the 65 CNEL contour as well as the 5% awakening contour for helicopter operations and therefore, would not be exposed to significant noise from helicopter operations.

Mitigation: None required.

References

Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

5.11 Population and Housing Impacts of the 2014 LRDP

At publication of the Initial Study for the 2014 LRDP, UCSF had proposed to demolish three Aldea residential buildings containing 42 total residential units on the Parnassus Heights campus site. UCSF now proposes to retain these units. The Initial Study determined that the displacement of existing housing would be a less than significant impact due to the net new number of housing units proposed at LRDP horizon. Therefore, this less than significant impact would not occur with the retention of these housing units. No other existing housing or people would be displaced, necessitating the construction of replacement housing elsewhere, as a result of the 2014 LRDP. Therefore, no impact regarding displacement of existing housing or people would result from implementation of the 2014 LRDP.

Impact POP-LRDP-1: The 2014 LRDP would induce population growth in the San Francisco Bay area, which could create demand for housing outside the market area. (Less than Significant)

The 2014 LRDP would result in population growth in San Francisco or the wider Bay Area through increased employment and student enrollment. The 2014 LRDP would accommodate an increase in employment and students at all campus sites from the current approximately 30,840 to approximately 42,270 by 2035, or an increase of about 11,430.

According to *Plan Bay Area*, approximately 569,000 people worked in San Francisco in 2010. Between 2010 and 2040, San Francisco is expected to add about 191,000 new jobs, which would represent nearly a 34% increase over its 2010 employment levels. The UCSF share of this additional employment (including students) in 2035 would be approximately 6%. The amount of employment growth at UCSF would not add significantly to the amount of employment forecast for San Francisco during this period.

Conservatively assuming that all new UCSF students and employees would be new to San Francisco and the region, the increase in students and employment would result in an increase in the residential population of San Francisco and other communities in the Bay Area. Assuming that future students and employees would make the same residential location decisions as current UCSF employees, approximately half of new students and employees would live in San Francisco. There would also be additional population living in those UCSF employee and student households. Assuming only one UCSF employee per household and based on 2.3 persons per household for San Francisco, the total population in San Francisco associated with UCSF growth under the 2014 LRDP would be about 13,000. The share of the City's 2040 population growth associated with the population growth under the 2014 LRDP would be approximately 5%.

The market area for housing for UCSF employees is the nine county Bay Area. This is the area within which about 98% of UCSF staff resides. Generally, the housing demand associated with employment growth under the 2014 LRDP would be satisfied by the housing that could be added in San Francisco and in other parts of the region. Assuming the current pattern of residential

location preferences, the housing demand in San Francisco associated with UCSF student and employment growth would represent about 6% of the projected household growth—a share that would not trigger shifts of demand to other parts of the region or beyond the regional housing market area.

UCSF currently has 431 residential units on the Mission Bay campus site and 222 units on the Parnassus Heights campus site, with a total of 921 beds. Approximately 852 new units could be developed under the 2014 LRDP on these campus sites, for a total of 1,505 units and 2,083 beds. No residential units exist or are proposed by the 2014 LRDP at the Mount Zion or Mission Center campus sites. Development of additional residential units on the Mission Bay and Parnassus Heights campus sites would allow UCSF to provide more on-campus housing to students, postdoctoral scholars, clinical residents, and faculty near their classrooms and workplaces, thereby reducing demand for off-campus housing in San Francisco and the Bay Area. It also promotes sustainability objectives of the 2014 LRDP by reducing the amount of private vehicle and UCSF shuttle traffic between these and other campus sites. Additional UCSF housing also serves to improve the University's jobs-housing balance and support the City's housing goals.

Implementation of the 2014 LRDP would induce population growth in the Bay Area, but not to the extent that demand for new housing would exceed the capacity of the market area. The impact would be less than significant.

Mitigation: None required.

5.12 Public Services Impacts of the 2014 LRDP

Impact PUB-LRDP-1: Implementation of the 2014 LRDP would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives. (Less than Significant)

In 2013, the estimated UCSF population across all sites, including patients and visitors, was approximately 39,420. At LRDP horizon in 2035 (including the Phase 2 Medical Center at Mission Bay), total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The population growth due to the 2014 LRDP could result in the need for increased fire protection services at the UCSF campus sites.

The population increase associated with the 2014 LRDP would be minimal in comparison to the population served by the existing fire stations near the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites. The increase in calls for fire protection and medical emergency response would not be substantial in light of the existing demand and capacity for fire protection and emergency medical services in the City. UCSF is located in an urban area and would not extend demand of the San Francisco Fire Department (SFFD) beyond the current limits of its service area. The anticipated population increase associated with implementation of the 2014 LRDP would neither adversely affect SFFD service standards nor require an increase in SFFD staff that would require the construction of new fire protection facilities. In addition, the City is currently constructing a new Public Safety Building at Third Street and Mission Rock Street, which will house a new fire station that will be operational in fall 2014 (SFDOE, 2014). The new station is being constructed to serve all new development at Mission Bay, including the UCSF Mission Bay campus site.

Furthermore, development under the 2014 LRDP would be designed to comply with building and fire codes and include appropriate fire safety measures and equipment, including but not limited to, use of fire retardant building materials, inclusion of emergency water infrastructure (fire hydrants and sprinkler systems), installation of smoke detectors and fire extinguishers, emergency response notification systems and provision of adequate emergency access ways for emergency vehicles.

As such, with implementation of the 2014 LRDP, existing fire stations would be adequate to meet the increases in demand for fire protection and emergency medical response services associated with growth under the 2014 LRDP, and no additional new or physically altered facilities would be necessary. Therefore, implementation of the 2014 LRDP would have a less than significant impact regarding the construction of new or physically altered fire protection facilities.

Mitigation: None required.

Impact PUB-LRDP-2: Implementation of the 2014 LRDP would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities, need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives. (Less than Significant)

Population increases due to the 2014 LRDP would result in increased demand for law enforcement services from the UC San Francisco Police Department (UCPD) and the San Francisco Police Department (SFPD).

In 2012, the service ratio of UCPD personnel to UCSF population was 1.9 sworn police officers per 1,000 persons (UCSF, 2012). The increase in daily population at the four campus sites will increase demand on UCPD services; however, it is not anticipated that new facilities would be needed in order to maintain current service levels for the Parnassus Heights, Mount Zion, or Mission Center campus sites. As the Mission Bay campus site grows, it is anticipated that approximately 1,500 square feet will be assigned to UCPD services in a new building on the North Campus, likely on Block 15 or 23. Construction-related impacts of expanding police services at the Mission Bay campus site are analyzed in applicable sections of the EIR, including: Section 7.2, *Air Quality*, Section 7.6, *Greenhouse Gas Emissions*, Section 7.7, *Hazards and Hazardous Materials*, Section 7.8 *Hydrology and Water Quality*, Section 7.10, *Noise*, and Section 7.14, *Transportation and Traffic.*

As discussed in Section 4.14, *Regional Setting*, the UCPD is the sole provider of law enforcement services on UCSF campuses, and their jurisdiction extends in a one mile radius from each campus boundary. While UCPD has a mutual aid agreement with the SFPD, the SFPD is generally only called where an unusual need for assistance is required. Daily campus population growth is not anticipated to substantially increase demand on SFPD services. As noted above under Impact PUB-LRDP-1, the City is currently constructing a new Public Safety Building in Mission Bay that will also become the new SFPD headquarters and as well as the new Southern District Station.

Because construction-impacts from expanding UCPD facilities at the Mission Bay campus site are either less than significant or reduced to less-than-significant through mitigation measures discussed elsewhere in this EIR, and since no new SFPD facilities would be necessary to accommodate increased demand for law enforcement services, implementation of the 2014 LRDP would not result in any significant impacts to police facilities.

Mitigation: None required.

Impact PUB-LRDP-3: Implementation of the 2014 LRDP would not result in substantial adverse physical impacts associated with the provision of new or physically altered public school facilities, need for new or physically altered public school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives. (Less than Significant)

The estimated number of future students that would be anticipated as a result of proposed residential development under the 2014 LRDP was derived by multiplying the number of students

per dwelling unit (the Student Yield Factor) by the number of proposed dwelling units (852 units). The California State Allocation Board Office of Public School Construction reports that the statewide student yield factor per dwelling unit is 0.5 students for grades K through 6 and 0.2 students for grades 7 through 12, resulting in a unified school district average of 0.7 students per household. Using that yield factor, construction of up to 852 units would result in an increase of approximately 596 new students. However, this is likely over estimated as the potential residents in campus housing would be overwhelmingly graduate students with fewer children than the general population. In addition, many of the proposed dwelling units would be single-occupancy units.

The University sets an occupancy policy for all campus housing that serves as a restriction on the number of potential school age children that could live in UCSF facilities. UCSF currently has 108 children living in student housing at the Parnassus Heights campus site and 67 children at the Mission Bay campus site. At LRDP horizon in 2035 UCSF, estimates that an additional approximately 136 children could potentially reside in UCSF housing on these campus sites.

Schools in the SFUSD would be able to accommodate the potential increase in student population. As such, the 2014 LRDP would have a less than significant impact on the SFUSD and would not require the construction of new or expanded school facilities. Additionally, UCSF has a Contribution Agreement with SFUSD stating that the District has rights to develop a new school site on Block 14 at the Mission Bay campus site until 2027, if it is determined that one is needed to serve future development in the area.

Mitigation: None required.

References

UCSF, Police Department, UC Police Department Reports Dashboard, Annual Report 2012.

5.13 Recreation Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that the potential effects regarding the increased use of parks and other recreational facilities would occur only as a result of implementation of the LRDP proposals at specific campus sites.

The Initial Study determined that population growth at the Parnassus Heights, Mount Zion and Mission Center campus sites would not be substantial; therefore, the demand on existing recreational facilities resulting from an increased population at these campus sites would not result in substantial physical deterioration of such facilities. As there are not currently any recreational facilities proposed at the Mount Zion or Mission Center campus sites, the Initial Study determined that no impacts from constructing recreational facilities would occur at either of these sites.

Impact REC-LRDP-1: Implementation of the 2014 LRDP would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. (Less than Significant)

Under the 2014 LRDP, residential development of approximately 523 units is proposed at the Mission Bay campus site, which could result in an increased demand for recreational facilities by new residents. It is anticipated that these students and other residents would primarily use the existing on-site campus recreation facilities. The increase in population resulting from the growth at the Mission Bay campus site is small relative to the amount of growth expected to occur in the larger Mission Bay area; as such, development proposed by the 2014 LRDP would not cause a significant increase in demand for recreation services on or near the campus site.

The students, faculty and staff, who commute to the Mission Bay campus site from various other parts of San Francisco and the greater Bay Area, as well as patients and visitors, are primarily served by other recreation facilities near their homes. Presumably, their use of recreational facilities on or near the Mission Bay campus site would be passive in nature and cause minimal increases in demand for recreation services on or near the Mission Bay campus site. As part of the development of the Mission Bay campus site, UCSF is required to construct 8 acres of publicly accessible open space.

As the population of the campus grows over time, the 2014 LRDP acknowledges that campus life improvements would also be necessary, including additional outdoor recreation areas, fitness facilities and open space. It is anticipated that the 2014 LRDP growth assumptions and space needs include adequate space to meet future demand for recreational facilities and open spaces at the Mission Bay campus site.

Mitigation: None required.

Impact REC-LRDP-2: The 2014 LRDP includes new recreational facilities, the construction of which could have an adverse impact on the environment (Less than Significant)

The 2014 LRDP proposes to construct three new trails within the Mount Sutro Open Space Reserve (Reserve) to enhance and improve access for visitors. In general, construction of new trails would require minimal vegetation removal, minor amounts of grading and the installation of new trail markers. The Sunset Trail, proposed on the northwest side of the Reserve, could involve the construction of a stairway. Due to the time-limited nature of construction, construction-related impacts in any single location would be temporary. Mitigation Measures BIO-PH-1a through BIO-PH-1f, which would mitigate potential adverse effects on special-status plants and animals in the Reserve, are presented and discussed in Section 6.3, *Biological Resources.* Compliance with mitigation measures and other construction-related regulatory requirements discussed in other sections of the EIR, including Section 6.2, *Air Quality*; Section 6.3, *Biological Resources*; Section 6.5, *Geology, Soils, and Seismicity*; Section 6.7, *Hazards and Hazardous Materials*; Section 6.8, *Hydrology and Water Quality*; Section 6.10, *Noise*; and Section 6.14, *Transportation and Traffic,* would reduce construction related effects of new recreational facilities to less than significant levels.

The 2014 LRDP proposes the construction of a full-size multi-purpose sports field at the Mission Bay campus site, which would provide outdoor recreation and fitness space between the existing community center and future housing site. Construction activities for the proposed sports field have been evaluated as part of the overall implementation of the 2014 LRDP. Due to the time-limited nature of construction, construction-related impacts in any single location would be temporary. Compliance with mitigation measures and other construction-related regulatory requirements discussed in other sections of the EIR, including Section 7.2, *Air Quality*; Section 7.3, *Biological Resources*; Section 7.5, *Geology, Soils, and Seismicity*; Section 7.7, *Hazards and Hazardous Materials*; Section 7.8, *Hydrology and Water Quality*; Section 7.10, *Noise*; and Section 7.14, *Transportation and Traffic,* would reduce construction related effects of new recreational facilities to less than significant levels.

Mitigation: None required.

5.14 Transportation and Traffic Impacts of the 2014 LRDP

The Initial Study prepared for the 2014 LRDP determined that implementation of the 2014 LRDP will not change existing air traffic volumes or affect existing air traffic patterns that would result in substantial safety risks. Therefore, no further study of air traffic patterns in the EIR is necessary.

2014 LRDP Plan-Level Impacts

Impact TRAF-LRDP-1: Implementation of the 2014 LRDP would be consistent with the primary goals of the City and County of San Francisco (CCSF) with respect to transportation and would not fundamentally conflict with the CCSF's Transit First Policy because the 2014 LRDP demonstrates reasonable efforts to continue transportation services (e.g., the UCSF Shuttles) that encourage alternatives to use of single-occupant automobiles. (Less than Significant)

There are many different factors that determine how people travel to/from work, including home location, work shifts, access to transit, and travel incentives and disincentives (e.g., how convenient or costly it is to park). A Transportation Demand Management (TDM) program is a set of policies and programs that include incentives, information, and education to encourage employees to commute to work by modes other than driving alone. The UCSF TDM program includes strategies that emphasize alternative commuting options, such as public transit, private shuttle service, biking, walking, and carpooling

Key features of UCSF's existing TDM program include the following:

- 60 shuttles serving 17 locations, with over 2.3 million passengers per year
- 33 vanpools that travel as far as Sacramento and operate using the Green Road Safety System, which improves fuel consumption and safety
- 62 reserved carpool stalls at various sites
- Marin Commute Club buses with about 55 daily riders who live in Marin and Sonoma Counties to the north of the city
- 18 City CarShare vehicles, along with 1,500 UCSF members who can use these vehicles by scheduling their use on-line
- A fleet of 43 low-emitting alternative-fuel and hybrid vehicles, including cars, shuttles, golf carts, and trucks
- 18 electric-vehicle charging stations at Parnassus Heights, Mount Zion, and Mission Bay, with plans for another 20 at Mission Bay in the Owens Street Garage and 10 at other locations
- Over 1,900 UCSF users of the ZimRide online carpool matching program

- 972 bicycle parking spaces with another 100 planned at Mission Bay, as well as bike racks on shuttles, a cyclist shower program that allows bicyclists to use UCSF showers at a discount, and other bicycle-related benefits
- Bay Area Bike Share station planned at Mission Bay, where members would have access to bicycles provided by the Bay Area Air Quality District
- Over 400 off-street motorcycle parking stalls in garages and surface parking lots
- An "emergency ride home" program to encourage use of alternative modes of transportation
- Clipper Card (public transit pass) sales at easily accessible locations, including through UCSF's website
- Close to 1,800 employees participate in the pretax transit program that has saved UCSF employees over $700,000 on public transit commute costs in 2013

To minimize traffic generated by UCSF current and planned facilities, UCSF proposes to implement more-robust TDM measures. These measures were developed as part of an internal planning process to identify feasible TDM measures that could reasonably result in a reduction in UCSF-generated single-occupant vehicle (SOV) trips, given UCSF's already low SOV rate.[18] To accomplish this, UCSF would implement some or all of the following in the 2014 LRDP:

- Expand UCSF Vanpool Program (add new vanpools and subsidize costs to attract new riders);
- Develop more-robust UCSF Carpool Matching and convert additional parking spaces to carpool only;
- Enhance existing City CarShare pods on campus sites and participate in the city's new Medical Center Rideshare program;
- Increase supply and access to bicycle parking and showers/lockers;
- Enhance shuttle system with Wi-Fi and Next Bus;
- Limit parking for non-faculty tenants in new housing;
- Gradually increase cost of employee parking over time; and
- Promote flexible work schedules, as possible.

Key Goals of the proposed LRDP that address reduced trip generation and are consistent with the goals of the Transportation Element of the San Francisco General Plan include:

- Enhance UCSF's Transportation Demand Management program and encourage its faculty, staff and students to use alternative modes of travel to driving alone to campus sites.
- Prioritize parking for patients and essential healthcare providers.
- Reduce congestion and truck deliveries to campus sites through transportation improvement measures.

[18] At present, less than 35% of all UCSF-generated trips are by single-occupant vehicle.

- Direct, aesthetic, and experiential pedestrian connectivity is stressed in the UCSF 2010 Physical Design Framework and will be considered as buildings and open space are developed.
- Consider the needs of pedestrians on public streets, particularly Parnassus Avenue at Parnassus Heights, Fourth Street at Mission Bay, and Sutter Street at Mount Zion, that pass through campus sites and have UCSF shuttle and Muni stops.

Because UCSF would continue to implement and expand transportation control measures consistent with CCSF's Transit First Policy, adoption of and development under the 2014 LRDP would not be considered to fundamentally conflict with those goals and would have a less-than-significant impact.

Mitigation: None required.

Impact TRAF-LRDP-2: Implementation of the 2014 LRDP could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities. (Potentially Significant)

Implementation of the 2014 LRDP would be spread over the next twenty years and would preserve UCSF's operations during the construction period. The construction of LRDP projects would begin with the demolition of small buildings at the Parnassus Heights campus site in 2015 to the construction of Phase 2 of the UCSF Medical Center at the Mission Bay campus site after 2035.

It is estimated that construction activity associated with the 2014 LRDP would generate an average of as few as 10 truck trips per workday, and as many as 40 truck trips per day (peak construction trip generation of approximately 90 truck trips per workday).

Some construction projects will result in a parking loss due to construction staging and/or restrictions and limit pedestrian access through the duration of construction; however project construction is temporary and will not result in long term impacts.

Construction-related activities would generally occur Monday through Friday, between 7:00 AM and 5:00 PM, and the typical work shift for most construction workers would be from about 7:00 AM to about 3:30 PM. On rare occasions, construction could also occur during extended hours (5:00 PM to 8:00 PM) and on weekends (8:00 AM to 5:00 PM) on an as-needed basis, with advanced notice to neighbors.

It is anticipated that the addition of the construction truck trips, and worker-related vehicle- or transit-trips, potentially would have temporary adverse effects on transportation conditions (i.e., impacts on local intersections or the transit network). Construction workers who drive to the site and potential temporary parking restrictions along building frontages on Parnassus Avenue would cause a temporary increase in parking demand, and/or temporary parking restrictions along building frontages on city streets. Construction workers would park within nearby off-street parking facilities that currently have availability during the day, in satellite parking lots in which

UCSF would lease temporary parking spaces, or in temporary surface parking lots within undeveloped blocks.

Nonetheless, while construction of individual LRDP projects would by definition be temporary, the LRDP would unfold over the course of 20+ years and would require consideration of the effect of construction activities on existing and future transportation facilities (e.g. sidewalks, Muni service and facilities, roadways, bicycle routes, etc.) and existing and future adjacent land uses. Therefore, due to the magnitude of 2014 LRDP development and the need for on-going coordination and monitoring, the 2014 LRDP construction-related transportation impacts would be considered potentially significant. **Mitigation Measure TRAF-LRDP-1** would reduce these impacts to less-than-significant levels.

Mitigation Measure TRAF-LRDP-1: Construction Coordination and Monitoring Measures.

Traffic Control Plan for Construction –In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the four campus sites, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and its construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (e.g. Parnassus Avenue (Parnassus Heights), Sutter Street (Mount Zion), etc.) and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the 2014 LRDP Projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets (the Blue Book), which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. [19] In addition to the regulations in the Blue Book, UCSF shall require the construction contractor(s) to comply with all state and federal codes, rules and regulations.

In the event that the construction timeframes of the major phases and other development projects adjacent to UCSF overlap, such as the adjacent proposed development at Mission Bay Blocks 29-32, UCSF shall coordinate with City Agencies through the Transportation Advisory Staff Committee (TASC) and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures.

Reduce SOV Mode Share for Construction Workers – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling and transit access to the campus sites by construction workers in the coordinated plan.

[19] The SFMTA Blue Book, 8th Edition (2012), is available online through SFMTA (sfmta.com).

Project Construction Updates for Adjacent Residents and Businesses – In order to minimize construction impacts on access for nearby residences, institutions and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

Significance after Mitigation: Less than Significant

2014 LRDP Development Site-Specific Impacts

Impact TRAF-LRDP-3: Implementation of the 2014 LRDP would result in temporary increases in traffic volumes on roadways in the vicinity of each of the four campus sites during demolition and construction activities. (Potentially Significant)

Although the effects of construction and demolition activities on transportation at the campus sites would be considered potentially significant due to the magnitude of development and the need for on-going coordination and monitoring, the implementation of Mitigation Measure TRAF-LRDP-1: Construction Coordination and Monitoring Measures would reduce construction-period impacts to less-than-significant levels, as discussed above under Impact TRAF-LRDP-2.

Mitigation Measure: Implement **Mitigation Measure TRAF-LRDP-1**

Significance after Mitigation: Less than Significant

Impact TRAF-LRDP-4: Implementation of the 2014 LRDP would increase traffic (vehicles, transit ridership, pedestrian and bicycle volumes) on the roadway network that serves each of the four campus sites, as well as increase loading and parking demand. (Less than Significant)

As detailed in the impact analyses in Sections 6.14, 7.14, 8.14 and 9.14 of this EIR, implementation of the 2014 LRDP would not result in significant impacts to traffic, transit, pedestrian, bicycle, loading or parking conditions, and no mitigation measures are required.

5.15 Utilities and Service Systems Impacts of the 2014 LRDP

UCSF is an urban institution with campus sites throughout the City of San Francisco and some locations beyond the city limits. UCSF occupies building space in both owned and leased buildings. Each UCSF site in San Francisco relies on utilities and services provided by the City that surrounds it. At the Parnassus Heights, Mount Zion and Mission Center campus sites, development under the 2014 LRDP would occur as replacement or in-fill on otherwise built-out sites and the necessary City utilities have long been in place with sufficient capacities to serve those sites and the proposed 2014 LRDP development. At the Mission Bay campus site, development under the 2014 LRDP would occur primarily as new construction on vacant land; however, these vacant sites lie within the Mission Bay Redevelopment Area, where development at this scale has been planned by the City and provisioned with utilities and services adequate to serve the planned development. As a result of these actions, potential adverse effects to utilities or services usually are less than significant.

Impact UTIL-LRDP-1: There would be sufficient water supplies available to serve the 2014 LRDP from existing entitlements and resources and no new or expanded water treatment facilities would be required. (Less than Significant)

Under the Water Supply Assessment law (Sections 10910 through 10915 of the California Water Code), urban water suppliers like the San Francisco Public Utilities Commission (SFPUC) must furnish a Water Supply Assessment (WSA) to the city or county that has jurisdiction to approve the environmental documentation for certain qualifying projects (as defined in Water Code Section 10912 (a)) subject to CEQA. While UCSF is not subject to the WSA law, as the lead agency for the 2014 LRDP, UCSF voluntarily requested preparation of a WSA as part of its cooperative planning with the City and to inform the EIR.

UCSF currently occupies approximately 8.04 million gsf in owned space and leased space in San Francisco. By 2035, UCSF's total space would be about 12.37 million gsf, an increase of about 4.33 million gsf. Of this increase, about one-third or 1,482,800 gsf was not previously identified in the SFPUC's 2010 Urban Water Management Plan (UWMP).

As discussed in the WSA, the City currently projects a retail demand in 2035 of 84.2 million gallons per day (mgd), which represents a 3.3 mgd, or 4%, increase over the 2035 demand projections estimated in the UWMP.

The net new water demand associated with growth under the 2014 LRDP is projected to be 0.14 mgd. The total retail demand with inclusion of 2014 LRDP demand is projected to be 84.3 mgd, which represents a 3.4 mgd, or 4%, increase over the 2035 projections. The SFPUC concluded that there are adequate water supplies to serve the 2014 LRDP demand and cumulative retail water demands during normal years, single dry years and multiple dry years over a 20-year planning horizon from 2015 through 2035. In addition, as discussed in Section 4.15.2, UCSF recently published the 2014 Water Action Plan in order to fulfill the UC *Policy on Sustainable*

Practice's goal of reducing the University's per capita water consumption by 20% in 2020. UCSF has also committed to other water use reduction measures in response to the Governor's emergency drought declaration and the UC President's request for immediate implementation of short-term measures. Therefore, water demand anticipated under the 2014 LRDP would be met by available supplies and no new or expanded water treatment facilities would be required; the impact would therefore be less than significant.

Discussion of water supply infrastructure necessary to serve growth resulting from the 2014 LRDP at the Mission Bay campus site is presented in Section 7.15.

Mitigation: None required.

Impact UTIL-LRDP-2: The wastewater treatment provider has adequate capacity to serve UCSF's projected demand resulting from implementation of the 2014 LRDP and no new or expanded wastewater treatment facilities would be required. (Less than Significant)

Assuming wastewater generation as 90% of water usage, the overall increase in wastewater resulting from the 4.33 million gsf increase associated with the 2014 LRDP would be roughly 0.38 mgd.[20] Wastewater flows from the Mission Bay, Mount Zion and Mission Center campus sites represent over 95% of future UCSF flows based on the location of growth proposed under the 2014 LRDP. Wastewater from these three campus sites would be directed to the Southeast Water Pollution Control Plant (SEWPCP). The increase in flows to the SEWPCP from the Mission Bay, Mount Zion and Mission Center campus sites would be approximately 0.01% over existing average dry weather flows of 63 mgd at this facility. Increased wastewater flows from the Parnassus Heights campus site would be approximately 0.02 mgd and would be directed to the Oceanside treatment plant. Therefore, overall wastewater generated at 2014 LRDP horizon would not be substantial and could be met by existing capacity. The 2014 LRDP would not result in a determination by the SFPUC that it has inadequate capacity to serve the projected demand, and the impact would be less than significant.

Discussion of wastewater infrastructure necessary to serve growth resulting from the 2014 LRDP at the Mission Bay campus site is presented in Section 7.15.

Mitigation: None required.

Impact UTIL-LRDP-3: Implementation of the 2014 LRDP would not exceed the wastewater treatment requirements of the Regional Water Quality Control Board. (Less than Significant)

As discussed above under Impact UTIL-LRDP-2, implementation of the 2014 LRDP would increase wastewater flows from the main campus sites, but not to an extent that would cause the SFPUC's combined sewer system to exceed wastewater treatment requirements of the Regional Water Quality Control Board. The impact would be less than significant.

[20] As discussed under Impact UTIL-LRDP-1, water demand associated with one-third of 2014 LRDP growth is 0.14 mgd. Therefore, total water demand of the 2014 LRDP is roughly 0.42 mgd.

Mitigation: None required.

Impact UTIL-LRDP-4: Implementation of the 2014 LRDP would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (Less than Significant)

The proportion of impermeable surfaces at each respective campus site would not significantly change under development proposed by the 2014 LRDP. All campus site stormwater runoff would be directed to the City's combined sewer system (CSS), except for the Mission Bay campus site where stormwater flows are directed to the Bay. Other than standard pipeline connections and inlets to connect proposed buildings to existing stormwater conveyance facilities, no expansion of storm drainage facilities would be required under the 2014 LRDP. The impact would be less than significant.

Discussion of storm drainage infrastructure necessary to serve growth resulting from the 2014 LRDP at the Mission Bay campus site is presented in Section 7.15.

Mitigation: None required.

Impact UTIL-LRDP-5: UCSF is served by a landfill with sufficient permitted capacity to accommodate solid waste needs resulting from implementation of the 2014 LRDP and would comply with federal, state and local statutes and regulation related to solid waste. (Less than Significant)

Growth proposed under the 2014 LRDP would increase the amount of solid waste generated on UCSF campus sites. Solid waste would be generated during both construction of proposed facilities and during operation of campus sites over the lifetime of the 2014 LRDP. More than 80% of solid waste generated in San Francisco, is transported to the Altamont Landfill in Alameda County. The Altamont Landfill has a permitted peak maximum daily disposal of 11,150 tons per day and has an estimated remaining capacity of approximately 46 million cubic yards or 74% of its permitted capacity. The estimated closure date of the landfill is 2025. As discussed in Section 4.16, the City's contract with the Altamont Landfill expires in 2015. The City may award a future landfill disposal contract to the Recology Ostrom Road Landfill in Yuba County, which has a total design capacity of over 41 million cubic yards and an expected closure date of 2066. The ultimate determination with respect to future landfill contracting will be made by the Board of Supervisors on the basis of solid waste planning efforts being undertaken by the City's Department of the Environment.

Regardless of whether the City renews its contract with the Altamont Landfill, switches to the Ostrom Road Landfill, or selects another facility, UCSF employees, students, visitors and patients would continue to participate in UCSF's recycling and composting programs and other efforts to reduce the solid waste disposal stream. UCSF has consistently increased its landfill diversion rate, rising from 51% in 2009 to 64% in 2013, as it strives to meet the UC *Policy on Sustainable Practices* goal of zero waste by 2020. In addition, **Mitigation Measure GHG-LRDP-1** would

require that contractors recycle or reuse at least 50% of construction waste or demolition materials, thereby further reducing the amount of solid waste sent to area landfills.

Given the existing and anticipated increase in solid waste recycling and the existing and potential future landfill capacities, implementation of the 2014 LRDP would not result in a landfill exceeding its permitted capacity or non-compliance with federal, state, and local statutes and regulations related to solid waste. Therefore, this impact would be less than significant.

Mitigation: None required.

Impact UTIL-LRDP-6: Implementation of the 2014 LRDP would not result in the wasteful, inefficient and unnecessary consumption of energy. (Less than Significant)

Growth proposed under the 2014 LRDP would result in the increased consumption of energy through LRDP horizon in 2035. In 2012-2013, UCSF purchased 6,871,248 therms of natural gas from PG&E and used 41,560,148 kilowatt hours of electricity across all UCSF campus sites, totaling 829,388 million British Thermal Units (Btu) per year.

Construction under the 2014 LRDP would require energy for off-road equipment operation, vendor and construction worker vehicle trips and demolition haul trips. These sources would result in an increased energy demand, primarily for diesel fuel, as shown in **Table 5-10**.

Once constructed, development projects under the 2014 LRDP would increase energy demand for electricity and natural gas as well as gasoline for increased motor vehicle trips. The estimated increase in energy demand from increased operations under the 2014 LRDP also is presented in Table 5-10.

UCSF Energy Conservation

The introduction to CEQA Appendix F states that "The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: (1) decreasing overall per capita energy consumption, (2) decreasing reliance on fossil fuels such as coal, natural gas and oil, and (3) increasing reliance on renewable energy sources."

Statewide efforts to control GHG emissions in accordance with California's Global Warming Solutions Act of 2006 (AB 32) – which requires the State of California as a whole to reduce GHG emissions to 1990 levels by the year 2020 – also result in progress toward each of these three energy conservation objectives. GHG control measures also seek to reduce per capita energy use and shift the reliance from fossil fuel to renewable energy sources. Meeting AB 32 GHG and climate requirements forces wide-ranging actions that directly and indirectly conserve energy. In addition, a number of other planning and policy practices, as well as measures that reduce other environmental impacts, also act to achieve one or more of these energy conserving objectives.

As well as controlling GHG emissions, the following UC system-wide policies directly and indirectly conserve energy, as described in CEQA Appendix F.

TABLE 5-10
ENERGY DEMAND FOR CONSTRUCTION AND OPERATION OF THE 2014 LRDP[a]

2014 LRDP Component	
Construction[b]	**million British Thermal Units (Btu)/year**
Parnassus Heights	12,200
Mission Bay	230,000
Mount Zion	2,260
Mission Center	5,030
Operation – Parnassus Heights	
Electricity	15,900[c]
Natural Gas	19,500[c]
Motor Vehicles[d]	9,930
Total Operational	45,330
Operation – Mission Bay	
Electricity	118,000
Natural Gas	103,000
Motor Vehicles	95,900
Total Operational	316,900
Operation –Mount Zion	
Electricity[c]	10,200
Natural Gas[c]	4,330
Motor Vehicles	8,450
Total Operational	22,980
Operation – Mission Center	
Electricity	6,310
Natural Gas	1,640
Motor Vehicles	4,050
Total Operational	12,000
Total Operational Energy - 2014 LRDP	397,210

[a] Project construction and operational energy estimates were made using CalEEMod, version 2013.2.
[b] Construction energy occurs over the entire LRDP horizon. A portion of construction energy use is construction worker trips. Some of these trips would be gasoline and not diesel.
[c] Includes demolition losses and renovation losses.
[d] Gasoline powered vehicles assumed. Per Air Resources Board, less than 1% of light duty auto trips in the Bay Area are diesel.

SOURCE: ESA, 2014.

UC Policy on Sustainable Practices

The UC *Policy on Sustainable Practices* sets the following requirements and goals relevant to GHG emissions reduction:

- Requires each campus to develop a long-term strategy for voluntarily meeting the requirements of California's Global Warming Solutions Act of 2006 (AB 32);
- Instructs campuses to aim for climate neutrality as soon as possible after achieving 2014 and 2020 reduction targets;

- Requires 20% better energy performance than Title 24 (policy maintained as Title 24 is revised) for new construction and renovations, and strives to achieve 30%;
- Requires new laboratory buildings to meet Labs21 Environmental Performance Criteria (EPC);
- All new construction and major renovations projects must meet a minimum standard of LEED-NC Silver and strive for LEED-NC Gold when possible;
- The University will use energy efficiency retrofits to reduce system-wide energy consumption by 10% or more, from 2000 baseline, by 2014;
- Renovation projects greater than $5 million that do not quality for LEED-NC must be certified under LEED-CI;
- Renovation projects that require 100% equipment replacement, and 50% non-shell areas, must achieve LEED Silver at a minimum and strive for Gold;
- Each campus will submit one pilot LEED-EBOM building for certification by July 1, 2014;
- University system will provide up to 10 MW capacity of on-site renewable energy by 2014 (approximately 1 MW per UC campus);
- Develop goals for reducing transportation-related GHG's and report on progress annually;
- Expand Transportation Demand Management (TDM) programs and projects;
- Divert 50% solid waste by 2008, 75% by 2012, and achieve zero waste by 2020 (defined as diverting 95% or more of municipal solid waste);
- Develop Water Action Plan and reduce water consumption by 20% by 2020;
- All new buildings must achieve at least two points in LEED NC Water Efficiency category;
- Maximize procurement of environmentally preferable products and services; and
- Purchase 20% sustainable food products by 2020.

UCSF's Sustainability 2.0 (2014-2020) Plan implements the UC *Policy on Sustainable Practices* in the areas of green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, and sustainable water systems.

UC Carbon Neutrality by 2025

The UC President has set a goal for UC to become carbon neutral by 2025 and purchase only clean energy. This goal has not been formally adopted by the Regents as a policy, but UC is actively working on the President's initiative to be the first major research university to achieve carbon neutrality.

UCSF Climate Action Plan (2009)

As part of implementing the UC *Policy on Sustainable Practices*, UCSF has developed a Climate Action Plan, a long-term strategy for voluntarily meeting the State of California's goal for reducing GHG emissions to 1990 levels by 2020, pursuant to AB 32. The Climate Action Plan

also addresses the UCOP goals of reducing GHG emissions to 2000 levels by 2014; and attaining climate neutrality as soon as possible after achieving the 2014 and 2020 reduction targets. GHG emissions inventories are included for the years 1990, 2000 and 2008. The Climate Action Plan forecasts future emissions and assesses the impact of UCSF sustainability policies and programs on future GHG emissions and the prospects for achieving GHG reduction goals. The Climate Action Plan concludes that UCSF is expected to meet the goal of reducing GHG emissions to 2000 levels by 2014, but that the goal of reducing 1990 levels by 2020 would not likely be met without the use of additional reduction measures or carbon offsets.

UC Strategic Energy Plan

The UC Strategic Energy Plan (SEP) was prepared in 2008 for all UC campuses, to fulfill a goal of the UC *Policy on Sustainable Practices* to implement energy efficiency projects in existing buildings. The UCSF portion of the plan analyzes energy use and GHG trends, and identifies potential energy efficiency retrofit projects at all buildings over 50,000 square feet at UCSF (primarily lighting, HVAC, commissioning and central plant measures). Energy savings, GHG emissions savings and financial returns are estimated for hundreds of projects, which are grouped into Tier 1 (high priority) and Tier 2 (longer term planning) projects based on their energy savings and financial payback. The SEP project list is to be updated regularly by each campus to evaluate the feasibility of additional energy-saving measures.

Annual GHG Inventory Reporting

The UC *Policy on Sustainable Practices* requires each campus to report its GHG emissions inventory to an independent reporting organization. UCSF emissions inventories reported to outside agencies are verified by accredited independent auditors. Since 2008 UCSF has also been required to report emissions from the Parnassus Heights Central Utility Plant to the California Air Resources Board (CARB) under the AB 32 Reporting Rule. UCSF tracks and reports its progress towards meeting its GHG emissions goals in its Annual Sustainability Report. USCF also reports to the UC Regents annually on its progress in meeting the goals in the UC *Policy on Sustainable Practices*.

GHG Reduction Strategy (see Appendix D)

UCSF has prepared a GHG Reduction Strategy, in conjunction with the 2014 LRDP to ensure that the implementation of the LRDP aligns with the UC *Policy on Sustainable Practices*; in particular the policies on greenhouse gases and the requirements of AB 32. The GHG Reduction Strategy, includes two categories of GHG reduction measures: those to which UCSF is currently committed to in terms of funding and/or implementation (called "Tier 1" measures), and those that are in the planning stages (called "Tier 2" measures). Tier 1 measures include the following energy-related strategies:

- ***Strategy EN1: Improve Energy Efficiency of Existing Buildings and Operations.*** Since the early 1990's UCSF has periodically written Strategic Energy Plans (SEPs) to identify and prioritize implementation of campus investments in energy efficiency projects for existing buildings and infrastructure. The SEP considers UCSF facilities 50,000 gsf or larger for application of new efficiency technologies, implementation of best practices and available financial incentive programs. SEP projects cover a wide range of types of

improvements, from changing lighting fixtures to building new power plants. Lighting and HVAC (Heating Ventilation and Air Conditioning) projects are particularly effective at reducing energy usage. While the University continues to expand the use of laboratory fume hoods to minimize health risks, the SEP includes projects for upgrading fume hoods with more energy efficient, high-performance models. Between 2009 and 2013, implementation of SEP projects has saved more than 12,000 MW-h of electricity and more than 1,700,000 therms of natural gas.

- ***Strategy EN2: Green Building Standards.*** The *UC Policy on Sustainable Practices* states that the University incorporates the principles of energy efficiency and sustainability in all capital and renovation projects within budgetary constraints and programmatic requirements. Given the importance of energy efficiency to green building design, the University has set a goal for all new building projects, other than acute-care facilities, to outperform the required provisions Title 24 energy-efficiency standards by at least 20 percent.[21] UCSF is committed to designing and constructing all new buildings (except for laboratory and acute care facilities, addressed separately below) so as to meet a minimum standard of sustainability that is equivalent to a LEED-NC Silver rating, and will continue to strive to achieve a standard equivalent to a LEED-NC Gold rating or higher, within the constraints of program needs and standard budget parameters. Central to its academic mission, research laboratories make up a large percentage of the new space proposed under the 2014 LRDP. These types of facilities contain specialized equipment that consume significantly more energy per square foot than the average building. Given the importance of specifically addressing sustainability in laboratory facilities, UCSF has also committed to designing all new laboratory buildings to a minimum standard equivalent to a LEED-NC Silver rating and the Laboratories for the 21st Century (Labs21) Environmental Performance Criteria (EPC), as appropriate.

- ***Strategy EN3.1: Renewable Energy: On-Site Solar PV.*** UCSF is planning to install a 750 kilowatt (kW) solar photovoltaic (PV) plant at the Medical Center at Mission Bay to be operational by 2020. Other solar PV projects at UCSF are expected to add 1,465 kW over the 20-year LRDP horizon.

Given the continuing and proposed actions by UCSF to decrease overall per capita energy consumption, decrease reliance on fossil fuels, and increase reliance on renewable energy sources, growth under the 2014 LRDP would not result in the wasteful, inefficient use of energy; effects related to energy consumption would not be significant.

Mitigation: None required.

Impact UTIL-LRDP-7: Implementation of the 2014 LRDP could result in the construction of new electrical or natural gas facilities, which could cause significant environmental effects. (Less than Significant)

UCSF is considering a central utility plant (CUP) on a portion of Block 16 on the Mission Bay campus site, potentially using cogeneration technology, as well as a redundant utility distribution loop for steam, chilled water and high-temperature hot water, to help ensure that utility supplies to future buildings on the North Campus are not interrupted should a break or power outage in

[21] Although the Title 24 building code does not apply to hospitals, new UCSF medical facilities must be designed to a LEED-Silver standard or higher, which achieves energy savings similar to Title 24. The Medical Center at Mission Bay is being designed to a LEED-Gold standard.

existing lines occur. Because the design of the CUP has not been completed, the specific operating characteristics of this possible facility cannot be analyzed at this time. Subsequent CEQA review would be necessary once CUP designs become available.

Mitigation: None required.

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CHAPTER 6
Parnassus Heights Campus Site – Setting, Impacts and Mitigation Measures

6.0 Introduction

This chapter considers the existing conditions and describes the potential impacts of 2014 LRDP activities proposed at the Parnassus Heights campus site. The functional zones, space program, average daily population at LRDP horizon and proposed LRDP development activities that would occur at the Parnassus Heights campus site were described in detail in Section 3.8.1 of Chapter 3, *Project Description*, and are summarized briefly below. The remaining 15 major sections of this chapter present the site settings and impacts for each of the 15 environmental topics.

6.0.1 Functional Zones

The proposed functional zoning diagram for the Parnassus Heights campus site is shown in **Figure 3-8**, in Chapter 3, *Project Description*. Under the 2014 LRDP, the Housing zone would be enlarged to capture UC Hall and Proctor, which are proposed for housing, from the Instruction and Research zone (which would be reclassified as Research). The Kirkham Child Care Center would be reclassified from Housing to Support. The Environmental Health and Safety Annex on Medical Center Way and the Mechanical Annex (formerly known as Emergency Fire Water Pumphouse and Ammonia Tank) on Parnassus Avenue would be newly classified as Support. The former Campus Community and Logistical Support functional zones would be combined into a single Support zone, with a new, separate Parking zone for structured parking. The sites of the Environmental Health and Safety, Surge and Woods buildings proposed for demolition would be reclassified as Open Space and would become part of the Mount Sutro Open Space Reserve.

6.0.2 Space Program

The LRDP proposes an additional 2.39 million gsf in owned and leased buildings across all of UCSF's sites through 2035. The allocation of this growth at the Parnassus Heights campus site at LRDP horizon in 2035 is shown below in **Table 6.0-1**.

6.0.3 Average Daily Population

The total projected UCSF population across all campus sites (including population associated with the Phase 2 Medical Center at Mission Bay) would increase by approximately 17,000 at LRDP horizon. As shown in **Table 6.0-2**, below, the projected increase in average daily population at the Parnassus Heights campus site would be only 600 in 2035.

TABLE 6.0-1
PARNASSUS HEIGHTS EXISTING AND LRDP HORIZON GSF

Type of Space	Existing 2014 Total gsf	LRDP Horizon 2035 Total gsf
Instruction	318,600	280,100
Research	802,200	711,200
Clinical	950,500	1,051,300
Support		
Academic Support	217,500	215,000
Academic/Campus Admin	471,200	414,500
Campus Community	146,800	140,900
Logistics	144,700	138,800
Support Subtotal	980,200	909,200
Housing	242,000	510,900
Vacant/Alteration	8,000	6,000
Total	**3,301,500**	**3,468,700**

[1] Structured parking is not included.

TABLE 6.0-2
PARNASSUS HEIGHTS EXISTING AND PROJECTED AVERAGE DAILY POPULATION

	Existing (2013)	Projected Population at LRDP Horizon (2035)	Change
Students	3,503	4,133	630
Faculty and Staff	8,323	8,268	(55)
Patients	2,572	2,685	113
Visitors	3,549	3,462	(87)
Total	**17,947**	**18,547**	**600**

6.0.4 Parnassus Heights - 2014 LRDP Proposals

As described in Chapter 5, the 2014 LRDP proposals at the four campus sites consist of four general activities: 1) demolition, 2) renovation, 3) construction of new facilities, and 4) circulation, open space, and utilities/infrastructure proposals.

The 2014 LRDP proposals at the Parnassus Heights campus site are listed below:

Parnassus Heights - 2014 LRDP Demolition Proposals

- Surge
- Woods
- Medical Research 4
- Laboratory of Radiobiology
- Proctor
- Environmental Health and Safety

- Koret Vision Research
- Langley Porter Psychiatric Institute (and support structures)

Parnassus Heights - 2014 LRDP Renovation Proposals

- UC Hall
- Millberry Union towers
- Moffitt Hospital
- Faculty Alumni House seismic retrofit
- Fifth Avenue houses conversion to faculty housing

Parnassus Heights - 2014 LRDP Construction Proposals

- New Hospital Addition
- Faculty housing at Fifth and Parnassus avenues
- Faculty housing on Proctor site[1]

Parnassus Heights - 2014 LRDP Circulation, Open Space, and Utilities/Infrastructure Proposals

- Parnassus Avenue Streetscape Plan
- Saunders Court renovation
- Mount Sutro Open Space Reserve trails
- Medical gas storage tanks
- Diesel fuel storage tank replacement
- Retaining wall

Parnassus Heights - 2014 LRDP Proposal Construction Time Frames

Activities at the Parnassus Heights campus site to implement the 2014 LRDP proposals would occur between the year 2015 and the LRDP horizon in 2035. These are presented in **Table 6.0-3**, below. Construction is not now anticipated to occur at the Parnassus Heights campus site during the general 2020-2024 window.

1 The Proctor site may alternatively be restored to open space.

TABLE 6.0-3
PROPOSAL CONSTRUCTION TIME FRAMES AT PARNASSUS HEIGHTS

Proposal Category	Land Use	Gross Square Feet / Number of Residential Units
2015 - 2019		
Demolition	Medical Research 4	12,300 gsf
Demolition	Laboratory of Radiology	18,200 gsf
Demolition	Woods	3,900 gsf
Demolition	Surge	11,400 gsf
Renovation	UC Hall-Phase 1	74,700 gsf / 105 units
Renovation	Faculty Alumni House	7,400 gsf
Construction	Housing at Fifth and Parnassus Avenues	48,400 gsf / 45 units
Other	Parnassus Avenue Streetscape Plan-Phase 1 (PH)	--
Other	Mount Sutro Open Space Reserve trails (PH)	--
Other	Medical gas storage tanks (PH)	--
Other	Retaining wall (PH)	--
2020 -2024		
Other	Parnassus Avenue Streetscape Plan-Phase 2	--
Other	Saunders Court renovation	--
2025 -2030		
Demolition	Langley Porter Psychiatric Institute	111,100 gsf
Construction	New Hospital Addition	308,000 gsf
2031 -2035		
Demolition	Proctor	9,900 gsf
Demolition	Koret Vision Research	43,000 gsf
Demolition	Environmental Health and Safety	6,200 gsf
Renovation	UC Hall-Phase 2	68,300 gsf / 64 units
Renovation	Millberry Union towers	46,600 gsf / 83 units
Renovation	Moffitt Hospital	378,700 gsf
Construction	Proctor housing	30,400 gsf / 32 units

6.1 Aesthetics

This section considers the setting and aesthetic impacts at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential Aesthetics effects are contained in Section 4.1 of this EIR. The CEQA Significance Standards presented in Section 4.1.3 are used to evaluate the potential aesthetics impacts of all proposed 2014 LRDP activities.

6.1.1 Aesthetics Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Scenic vista.** The proposed New Hospital Addition would be the only activity to have a potential effect on a scenic vista. No additional analysis of this issue is required for other LRDP activities.

- **Scenic resources.** No activities would result in an adverse impact to scenic resources within a state scenic highway. Therefore, no additional analysis of this issue is required.

- **Effects on visual character or quality.** The proposed New Hospital Addition and the Parnassus Avenue Streetscape Plan would be the only activities to have potential effects on visual character or quality. No additional analysis of this issue is required for other LRDP activities.

- **Light and glare.** The proposed New Hospital Addition and the Parnassus Avenue Streetscape Plan would be the only activities to have potential effects on light and glare. Accordingly, no additional analysis of this issue is required for other LRDP activities.

- **Wind or shadow.** The proposed demolition of 8 existing buildings and construction of the New Hospital Addition would be the only activities to have potential effects regarding wind or shadow. Accordingly, no additional analysis of this issue is required for any other LRDP activity.

Finally, the Initial Study also concluded that the proposed renovations of Moffitt Hospital, UC Hall and the Millberry Union towers would result in no impact or less-than-significant impacts regarding any aesthetics issue. Therefore, no additional analysis is required for these building renovation activities.

6.1.2 Aesthetics – Parnassus Heights Setting

The Parnassus Heights campus site retains a distinct visual presence due to its design and natural character. The campus site occupies 107 acres on the northern slope of Mount Sutro, which descends over 800 feet from its summit to Parnassus Avenue and Irving and Carl Streets. Due to steep slopes, the developed portion of the campus site is mostly limited to the lower slope and shelf of Mount Sutro, with 61 acres within the Mount Sutro Open Space Reserve (Reserve). Other smaller-scale campus structures are located in the Reserve, hidden in heavily wooded areas on the slopes of Mount Sutro.

The lower campus shelf is a 33-acre area on the lower hillside of Mount Sutro along the north and south sides of Parnassus Avenue, with a visual character that is as urban and institutional. UCSF buildings extend to Irving and Carl Streets to the north. UCSF buildings are densely clustered and generally grouped by functional zone. The largest and most visually prominent buildings are on the south side of Parnassus Avenue and range in height from 7 to 16 stories. These buildings include the Medical Sciences building, the Clinical Sciences building, and Moffitt and Long Hospitals.

The slab-like facades of the Medical Sciences building and Moffitt Hospital are oriented parallel (east-west) along Parnassus Avenue and are interrupted by equally sized, adjacent wings of both buildings oriented perpendicular (north-south) to Parnassus Avenue. Projecting towers partially screen views of other large buildings behind them (e.g., Health Sciences East and West) and contrast with Mount Sutro's forested slopes to the south. At street level, small courts and open spaces at the bases of buildings, some with driveways, are visible, as are comparatively shorter buildings along Parnassus Avenue (e.g., Langley Porter Psychiatric Institute [LPPI], Clinical Sciences building and UC Hall). The presence of large buildings along the south side of Parnassus Avenue creates a solid street wall that screens views of other buildings located behind, such as the eight-story School of Nursing building located behind Clinical Sciences and UC Hall.

The Dental Clinics building is located on the western portion of the campus site, set back behind housing along Fifth Avenue. This building is a contemporary low-rise structure, with five levels stepping back from Fifth Avenue toward Koret Way to the southeast. A surface parking area is located adjacent to its south side along Kirkham Street. Immediately east of the Dental Clinics building is the Koret Vision Research building, which is a contemporary multistory building with setbacks above the second and fourth levels. To the south of these structures is the Medical Research 4 building, an oblong, two-story building oriented in the north-south direction.

The north side of Parnassus Avenue is less densely developed than the south side of the street. Building heights along the north side of Parnassus Avenue vary from nine stories (Ambulatory Care Center) to five stories (Kalmanovitz Library), gradually becoming lower (one to three stories) toward the western edge of the campus site. Parking structures are visible from Irving and Carl Streets and create a podium upon which both the Ambulatory Care Center and Millberry Union sit.

Buildings at the Parnassus Heights campus site are designed in a mix of architectural styles. However, despite variation in architectural style, the character of the buildings is visually consistent and interrelated throughout the campus site, due to the size and tight clustering of the structures.

In general, the campus site boundaries are clearly defined by the strong visual differences in building density, height and institutional character from the surrounding residential neighborhood, which generally consists of small-scale, two- to four-story, single- and multifamily homes, many exhibiting a Victorian or Edwardian architectural style. However, the UCSF campus includes some small-scale residences along Fifth Avenue and Third Avenue primarily for faculty housing. Small-scale commercial uses are intermixed throughout the neighborhood. About two blocks north of the campus site, the topography becomes more level, with a visual character dominated by trees, recreation fields and other facilities in Golden Gate Park.

6.1.3 Aesthetics – Parnassus Heights Impacts and Mitigation Measures

Impact AES-PH-1: The New Hospital Addition and faculty housing at the Proctor site and Fifth and Parnassus avenues at the Parnassus Heights campus site would not have a substantial adverse effect on a scenic vista. (Less than Significant)

The demolition of the existing LPPI building would alter the view of that area, but its loss would not adversely affect any scenic vistas of the Parnassus Heights campus site. The demolition of the LPPI building would be followed by the construction of the New Hospital Addition on that site. The New Hospital Addition would be adjacent to and visible from Parnassus Avenue, and due to the combination of the elevation of the hillside site and the height of the proposed hospital, would also be visible from a number of distant public view locations, including from Golden Gate Park to the north of the campus site. However, due to the topography of Mount Sutro and the proposed location of the new building at the LPPI site, the only scenic views that would be affected would be of the Reserve itself behind the proposed Hospital Addition. The existing LPPI building consists of the original "L"-shaped building ranging from two to six stories tall and a four-story wing addition constructed in 1959. The proposed Hospital Addition would be seven stories and about 110 feet tall. Although the hospital has not yet been designed, preliminary plans indicate that the height and bulk would be greater than the LPPI building, thus obscuring portions of some views of the Reserve on the hillside to the south as viewed from public streets and areas within Golden Gate Park. However, views of the Reserve behind LPPI from Golden Gate Park and other public areas are currently limited due to topography, existing vegetation and other buildings located in the vicinity of LPPI, including the Ambulatory Care Center and Medical Building 2. Therefore, the demolition of LPPI and construction of the New Hospital Addition at the LPPI site would not result in a substantial adverse effect on views of the Reserve and the impact would be less than significant. Besides the New Hospital Addition, other development proposed at the Parnassus Heights campus site include possible faculty housing at the Proctor site and at Fifth and Parnassus avenues. Both residential buildings would have heights anticipated not to substantially exceed heights of adjacent and nearby structures. Therefore, scenic views of the Mount Sutro Open Space Reserve (Reserve) would not be affected by these residential buildings.

Mitigation: None required.

Impact AES-PH-2: The New Hospital Addition, new faculty housing and the Parnassus Avenue Streetscape Plan at the Parnassus Heights campus site would not substantially degrade the existing visual character or quality of the site and its surroundings. (Less than Significant)

The proposed New Hospital Addition would be approximately seven stories or about 110 feet in height, excluding rooftop mechanical equipment that could add up to an additional 17 feet. The building has not yet been designed, but it is planned to be set back from Parnassus Avenue with a landscaped strip to provide a passenger drop-off/pickup, parking and loading loop that would exit directly across from Hillway Avenue. Additional loading space may be created at the back of the building. The upper portion of the building would step back from the lower portion to minimize

shading on Parnassus Avenue and to create an attractive appearance and pedestrian scale along this public street. As the eastern gateway to the Parnassus Heights campus site, the corner of the building would be designed to be architecturally prominent. The adjacent Long Hospital would be reconfigured to connect to the New Hospital Addition. A visual simulation showing basic height and bulk of the proposed building from Hill Point Avenue and Parnassus Avenue (viewpoint shown in **Figure 6.1-1**) is depicted in **Figure 6.1-2**.

As viewed in the simulation from this viewpoint, the proposed New Hospital Addition would present a larger building mass than the existing LPPI. It would be sited closer to Parnassus Avenue, generally in line with Moffitt Hospital and other buildings to the west. From this vantage point, Long Hospital would be obscured from views at the street level.

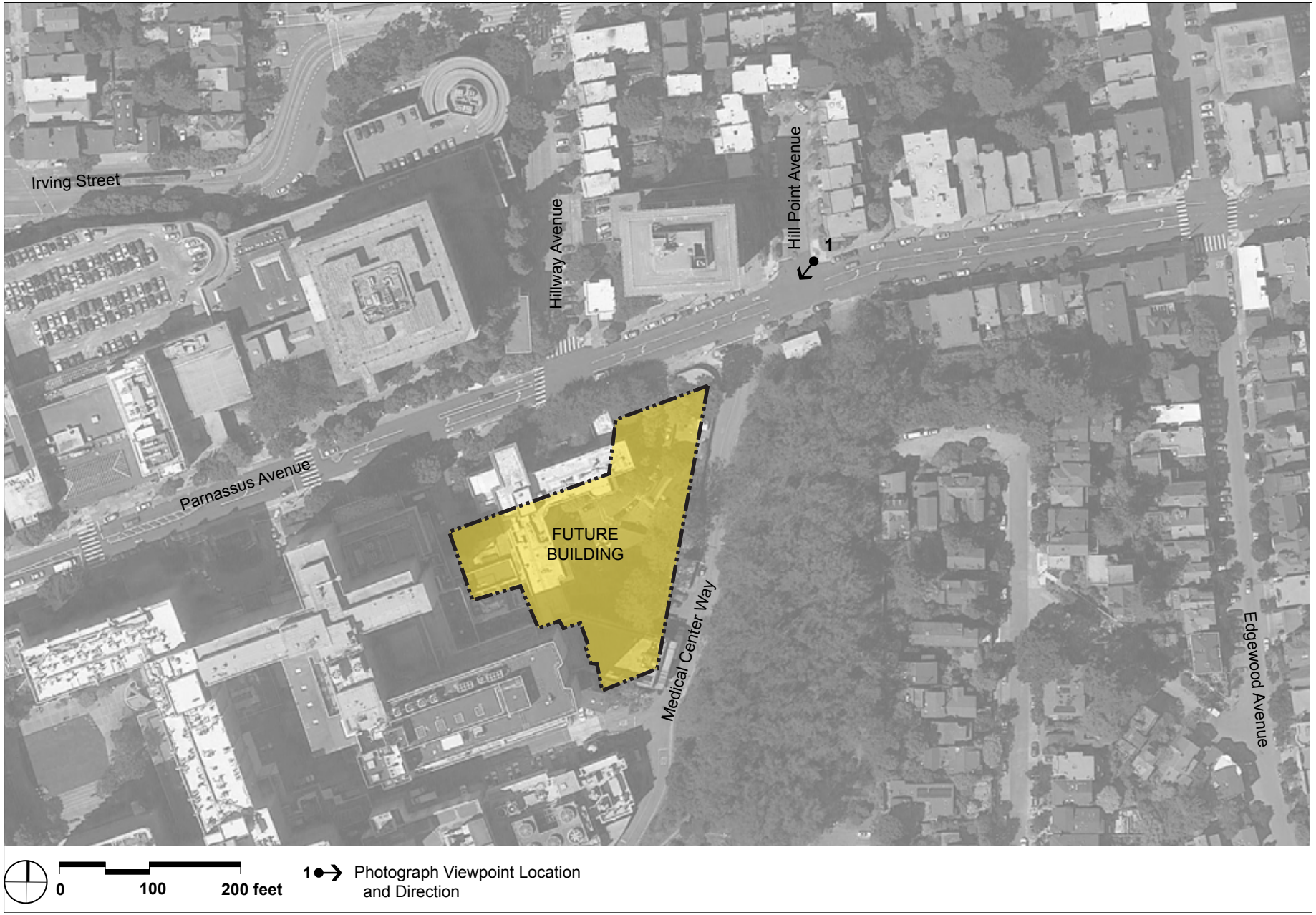
Although changes in appearance at the Parnassus Heights campus site would be noticeable, particularly along the south side of Parnassus Avenue, the New Hospital Addition would be built in accordance with UCSF's *Physical Design Framework* and *Facilities Design Guidelines* and would be consistent with the 2014 LRDP's Community Planning Principles regarding Building and Public Realm Design. The building would be sited appropriately in the campus site's Clinical functional zone. The design guidelines would ensure that the final design of the hospital responds to the form of adjacent buildings (e.g., in terms of massing and height) and the overall urban context of the Parnassus Heights campus site and surrounding neighborhood. Because the new building would be visually similar to existing uses (e.g., Moffitt and Long Hospitals) on and adjacent to the site, it would not substantially degrade the visual character of the site and its surroundings.

Further, the new building would occur in the context of the proposed Parnassus Avenue Streetscape Plan, which includes pedestrian improvements intended to make street crossings safer and more convenient, the creation of more usable outdoor space as well as visual design elements to strengthen the identity of UCSF at the Parnassus Heights campus site, and enhance the public realm. Improvements would include new paving, street furniture, lighting and street trees, sidewalk and crosswalk widening and more defined campus gateways at either end of the street as it passes through the campus site. It would also incorporate a new entrance way to align with the future New Hospital Addition. The improvements would occur in phases starting on the south side of Parnassus Avenue at the west end at Fifth Avenue, through the campus core and along the front of the New Hospital Addition to Medical Center Way.

While potential faculty housing buildings at the Proctor site and at Fifth and Parnassus avenues have not yet been designed, they would similarly be constructed in accordance with the *Physical Design Framework* and *Facilities Design Guidelines* and would be consistent with the 2014 LRDP's Community Planning Principles regarding Building and Public Realm Design.

Therefore, effects to visual quality and character with respect to the New Hospital Addition, new faculty housing and the Parnassus Avenue Streetscape Plan would be less than significant.

Mitigation: None required.



SOURCE: Environmental Vision

UCSF Long Range Development Plan Environmental Impact Report

Figure 6.1-1

Viewpoint Location-Parnassus Heights

Existing view from Parnassus Avenue at Hill Point Avenue looking southwest

Visual Simulation of Proposed Project

Note: Visual simulation depicts potential building envelope, not proposed design.

SOURCE: Environmental Vision

Figure 6.1-2

Visual Simulation-Parnassus Heights

Impact AES-PH-3: Construction of the New Hospital Addition and faculty housing buildings at the Parnassus Heights campus site could result in flood lighting on the sites during nighttime construction activities. (Potentially Significant)

Although construction operations are generally expected to take place during the day, some activities could be conducted at night to reduce noise, vibration or other effects on daytime office or research uses. To enable construction at night, flood lighting would be required. The use of night lighting would have the potential to disturb residents in neighborhoods near the hospital and faculty housing construction sites, and potentially also affect nighttime views. Night lighting of construction sites would be temporary and would cease upon completion of construction. **Mitigation Measure AES-LRDP-1** would be implemented to reduce the impact of nighttime work lighting to a less-than-significant level.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-1

Significance after Mitigation: Less than Significant

Impact AES-PH-4: The New Hospital Addition and new faculty housing at the Parnassus Heights campus site could create new sources of substantial light or glare that would adversely affect day or nighttime views in the area. (Potentially Significant)

Development of the New Hospital Addition and faculty housing could increase ambient light levels due to light dispersion from new buildings. Increases in night lighting could affect nighttime views on the campus site or in the surrounding neighborhood. New light sources could include street lights, illuminated signage, exterior safety lighting and light emitted from building windows. Glare could be generated from reflective building materials. Because specific architectural features and building materials have yet to be determined, the proposed improvements have the potential to include reflective surfaces, such as metal and glass. The resultant glare could affect nearby residents, pedestrians and passing motorists. **Mitigation Measure AES-LRDP-2** would be implemented to reduce the impact to a less than significant level. By employing appropriate design standards and minimizing the quantity of reflective material used in new construction, light and glare impacts and impacts to views related to lighting could be reduced to less-than-significant levels.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-2

Significance after Mitigation: Less than Significant

Impact AES-PH-5: The demolition of 8 existing buildings, including LPPI, and construction of the New Hospital Addition at the Parnassus Heights campus site would create street-level winds that could be hazardous to pedestrians in the area. (Potentially Significant)

Winds experienced at the Parnassus Heights campus site throughout the year originate from many directions, but for the purposes of determining comfort or safety issues that might arise, it is only necessary to consider the stronger winds that occur. Data from a nearly 9-year wind record from the Bay Area Air Quality Management District's Fort Funston meteorological station provide a good basis for understanding the winds that sweep in over the west side of San Francisco. These

data show that 33% of all winds at the Fort Funston station are SW, WSW or W winds with speeds of 7 mph or faster, while nearly 12% of all winds have speeds of 15 mph or faster and come from the following directions – S, SSW, SW, WSW, W, WNW, and NW – each with roughly equal frequencies of occurrence. Strong storm winds can come from any direction, but of the 52 recorded hourly winds greater than 30 mph, only one came from the northeast, while the other 51 were from the SSW through the NNW.

In leaving the coastline and approaching the Parnassus Heights campus site, winds encounter surface roughness, in the form of building and ground surfaces, and vegetation, so they lose speed and become more turbulent. Winds approaching the Parnassus Heights campus site, regardless of initial directions will be shaped by topography. Further, the winds that approach the Parnassus Heights campus site from the SW through the NW directions will tend to flow around the north flank of Mount Sutro and would be perceived by observers on the campus site as being generally winds from the west, but still retaining much of their speed.

Given the alignment of Parnassus Avenue and the wall of high-rise buildings along its south side, these winds over the campus site will follow Parnassus Avenue or a parallel street, as well as flow south of the high-rise central core of the campus site, between the buildings and the hillside. Those winds that flow between the high-rise central core and the hillside are the higher-speed winds with enough energy to possibly be adversely re-directed to ground level.

Winds mostly from the south have to cross the high-rise street wall to reach Parnassus Avenue and would be substantially slowed in the process; these winds likely would not have enough energy remaining to be adversely re-directed. As noted above, strong winds mostly from the northeast are relatively rare. Strong winds from the northwest may have some adverse effects, as discussed below.

However, demolition of the LPPI has the potential to affect the west winds that flow on the north and south sides of the high-rise central core, because it removes the east end of the street wall. Although the LPPI is not a tall building, it still acts as a low divider in the west–to-east flow of the stronger west winds. Removing the LPPI building would enable that divided wind flow to re-connect over the present LPPI site. Given that the wind would have a wider space within which to move, this should generally slow the wind speed there. The overall effect at pedestrian-level should not be adverse, and even may act to improve wind conditions at the demolition site under the stronger west winds. This would be a less-than-significant effect.

The other nine buildings to be demolished are much smaller buildings. Typically, a building that is 50 feet tall, or less, has very little to no effect on the wind, unless the building is very wide, or it is the only structure standing on an open site. Each of the smaller buildings has a typical height of less than 50 feet and either stands within a group of other buildings or is located in the stands of trees in the Reserve. These buildings would have little to no effect on winds in the vicinity unless removal of the building would open a path for west winds to reach into a wind-sensitive area of the campus site. Since the areas that adjoin these buildings are known not to be wind sensitive, the wind effects of demolishing any or all of these nine buildings would be less-than-significant.

Overall, the wind effects of the demolition of the 8 buildings, including the LPPI, would be less-than-significant. Although there could be an indefinite amount of time between the demolition of LPPI and the construction of the New Hospital Addition, or between the demolition of the other buildings and subsequent use of the sites, the wind effects would be a less-than-significant effect.

Regardless of the design, the New Hospital Addition would be an in-fill building – filling in a gap or adding to the street wall – a factor that, in itself, typically improves pedestrian wind conditions immediately around the building.

With respect to the construction of the New Hospital Addition, since a design is not available, this analysis must consider the bulk shape alone. If the proposed design differs in shape, the results may be different. However, the bulk shape now available would have good general characteristics to allow the west wind flow across the campus site, as is described above, for the present LPPI building to merge more smoothly, although in doing so, the wind speed may increase.

The primary difference between the LPPI and the bulk design is that the bulk design concept would fill the available ground space and be tapered at the east end, which would allow the smooth merging of the separated wind flows. The bulk design's setback from Parnassus Avenue and, to a limited extent, the lower-level podium/overhang would help to deflect and keep wind above the sidewalk at the corner of Parnassus Avenue and Medical Center Way. The long, 110-foot street wall could adversely affect winds on the sidewalk under strong NW winds, which would approach and strike the face of the building at a nearly 45° angle and could be redirected down onto the sidewalk along the Parnassus Avenue frontage of the building. However, the bulk design's setback from Parnassus Avenue and its lower-level podium/overhang would all tend to deflect those winds away from Parnassus Avenue sidewalks.

To summarize, because the bulk design considered for the New Hospital Addition would be an in-fill building, because it would generally fill the space between Long Hospital, Medical Center Way and Parnassus Street, and because it would setback from Parnassus Avenue and a lower-level podium/overhang well above the sidewalk, the bulk design of the New Hospital Addition would tend to reduce wind effects of the building on Parnassus Avenue sidewalks. The resulting wind effect should be less than the wind effects of the existing LPPI building under most wind conditions. The wind impact of the bulk design New Hospital Addition should be less than significant and no further mitigation would be required[2].

Should the design shape of the New Hospital Addition change, the new design will be evaluated with respect to wind hazard, and implementation of Mitigation Measure AES-LRDP-3 would ensure that any impacts would be less than significant.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-3

Significance after Mitigation: Less than Significant

[2] Regardless of whether changes in design occur, the New Hospital Addition would be subject to further review as necessary under CEQA

6.2 Air Quality

This section considers the setting and air quality impacts of implementing the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Air Quality are contained in Section 4.2 of this EIR, while the plan-level Air Quality impacts of the 2014 LRDP are described in Section 5.1.2. The CEQA Significance Standards presented in Section 4.2.3 are used to evaluate the potential Air Quality impacts of all proposed 2014 LRDP activities.

6.2.1 Air Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that no activities would result in objectionable odors affecting a substantial number of people. Therefore, no additional analysis of this issue is required.

6.2.2 Air Quality – Parnassus Heights Setting

6.2.2.1 Sensitive Receptors

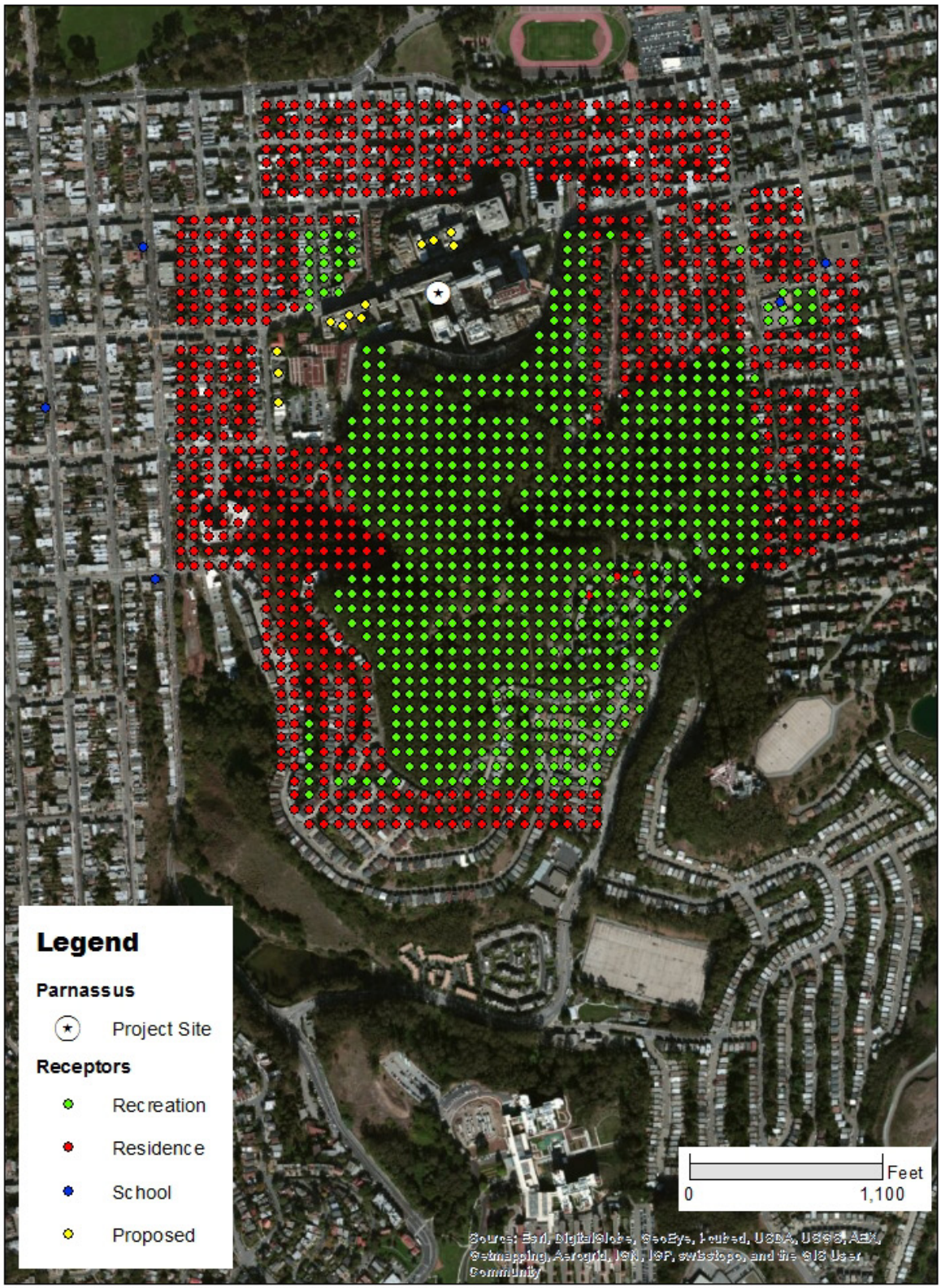
The closest sensitive receptors to the Parnassus Heights campus site are identified in **Figure 6.2-1.** On the campus site, existing sensitive receptors consist of the Fifth Avenue housing on the western edge of the campus site as well as child care centers at Third Avenue and Parnassus Avenue and at the end of Kirkham Street. There is additional campus housing on Third Avenue between Irving Street and Parnassus Avenue as well as the corner of Parnassus Avenue and Hillway Avenue. Moffitt/Long Hospital is also a sensitive receptor. Aldea Housing is located more than 1,500 feet south of the main campus footprint, towards the top of Mount Sutro and is therefore not considered a sensitive receptor. Off-campus receptors (residences) abut the western and northern campus site boundaries while residences to the east and south are buffered by varying depths of open space.

6.2.2.2 Existing Stationary Sources of Air Pollution

The Bay Area Air Quality Management District (BAAQMD) inventory of permitted stationary sources of emissions identifies one permitted operator of stationary emissions present within or near the 1,000-foot zone of influence of the site. This is the Parnassus Heights campus site itself, which operates 20 permitted air pollution sources on the campus site. These sources, listed in **Table 6.2-1**, are primarily stationary diesel engines for back-up power generators, combustion turbines, boilers and duct burners.

6.2.2.3 Non-permitted Stationary Sources of Air Emissions

The Parnassus Heights campus site also operates fume hoods which emit TACs. These fume hood emissions do not require a permit from BAAQMD based on the operating throughput and therefore have not been assigned an existing risk value in BAAQMD databases like permitted



SOURCE: KB Environmental Sciences

UCSF Long Range Development Plan Environmental Impact Report

Figure 6.2-1

Sensitive Receptors – Parnassus Heights Campus Site

TABLE 6.2-1
STATIONARY SOURCES AT THE PARNASSUS HEIGHTS CAMPUS SITE

Source #	Facility Type	Source #	Facility Type
2478	UCSF source #9: gas turbine generator	2478	UCSF source #20: Diesel generator
2478	UCSF source #10: duct burner for heat recovery	2478	UCSF source #21: Diesel generator
2478	UCSF source #11: gas turbine generator	2478	UCSF source #22: Diesel generator
2478	UCSF source #12:duct burner for heat recovery	2478	UCSF source #23: Diesel generator
2478	UCSF source #13: Auxiliary boiler	2478	UCSF source #24: Diesel generator
2478	UCSF source #14: Auxiliary boiler	2478	UCSF source #25: Diesel generator
2478	UCSF source #16: Diesel generator	2478	UCSF source #26: Diesel generator
2478	UCSF source #17: Diesel generator	2478	UCSF source #27: Diesel generator
2478	UCSF source #18: Diesel generator	2478	UCSF source #30: Diesel generator
2478	UCSF source #19: Diesel generator	2478	UCSF source #32: Diesel generator

SOURCE: BAAQMD, 2012c and ESA.

sources. However, UCSF maintains an inventory of chemical throughput for each campus site and has prepared health risk assessments relative to fume hood emissions and other stationary source emissions on the Parnassus Heights campus site. A 1989 health risk assessment performed for the Parnassus Heights campus site identified health risks from research and teaching (hood vents), incinerators, and ethylene oxide sterilizers. Subsequent to this study, the incinerator and all ethylene oxide sterilizers have been decommissioned at the campus site and risks from these sources are no longer relevant to this analysis. Risks associated with fume hood emissions were estimated at 4.46 in one million at the maximally exposed individual (residence on Fourth Street) (Radian, 1989).

Since that time, UCSF has implemented a series of correctional measures to reduce exposure to fume hood emissions, which are expected to markedly reduce health risk from fume hood emissions reported in 1989. The first measure was to improve the mechanical ventilation of fume hoods both with respect to increased flow rate as well as to increasing exhaust stack height and consolidating the emission points. The second measure was to reduce the volume of chemical use within hoods which are now inventoried. At present there are approximately 208 active fume hoods in operation at the Parnassus Heights campus site.

6.2.2.4 Major Roadways Contributing to Air Pollution

In the City of San Francisco, Parnassus Avenue and Seventh Avenue are arterial streets in the existing local roadway system within the 1,000-foot zone of influence that have at least 10,000 vehicles in annual average daily traffic based on the City's SF CHAMP roadway model[3]. This traffic contributes to elevated concentrations of $PM_{2.5}$, DPM, and other contaminants emitted from motor vehicles near the street level. There are no freeways within 1,000 feet. A map of Air

[3] San Francisco County Transportation Authority, Chained Activity Modeling Process version 4.3.0, Average Daily Traffic Volumes, provided to ESA August 2, 2012.

Pollution Exposure Zones that includes both stationary and roadway sources compiled by the San Francisco Department of Public Health indicates that roadways around the campus site are not substantial contributors to localized cancer risks or $PM_{2.5}$ concentrations (SFDPH, 2013).

6.2.3 Air Quality – Parnassus Heights Impacts and Mitigation Measures

Impact AIR-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus site would result in increased emissions of criteria air pollutants during demolition and construction activities. (Potentially Significant)

Construction activities would result in emissions of criteria pollutants from the use of heavy-duty construction equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the site. In addition, fugitive dust or PM_{10} emissions would result from excavation, trenching, and other construction activities.

There are four types of proposals at the Parnassus Heights campus site under the LRDP:

- **Demolition:** Surge, Woods, Medical Research 4, Laboratory of Radiobiology, Proctor, Environmental Health and Safety, Koret Vision Research, and the Langley Porter Psychiatric Institute (and support structures)

- **Renovation:** UC Hall, Moffitt Hospital, Millberry Union towers, and Faculty Alumni House

- **Construction:** New Hospital Addition, Proctor housing, and housing at Fifth and Parnassus Avenues

- **Open Space and Utilities:** Parnassus Avenue Streetscape Plan, Saunders Court renovation, Mount Sutro Open Space Reserve trails, medical gas storage tanks, diesel fuel storage tank replacement, and retaining wall

Emissions from demolition and construction-related activities were calculated assuming four discrete construction windows in five- to six-year increments at the Parnassus Heights campus site, as presented in **Table 6.0-3**, Proposal Construction Time Frames at Parnassus Heights, located in Section 6.0.4 of this chapter. Implementation of the Parnassus Avenue Streetscape Plan, open space, and utility projects would require less intensive construction equipment and would not be expected to contribute substantially to the emissions estimated below for building demolitions and renovations.

Demolition and construction-related emissions from each of these 2014 LRDP proposals at the Parnassus Heights campus site were calculated using the California Emissions Estimator Model (CalEEMod), assuming completion by 2020, 2030 and 2035. Phasing lengths were based on CalEEMod default estimates which are based on square footage for medical office buildings and number of dwelling units for housing. It was assumed that there would be no off-road equipment involved in the renovation of UC Hall, Millberry Union towers, Moffitt Hospital, or the Faculty

TABLE 6.2-2
AVERAGE DAILY DEMOLITION AND CONSTRUCTION-RELATED POLLUTANT EMISSIONS WITHOUT MITIGATION - PARNASSUS HEIGHTS PROPOSALS

Years	Estimated Emissions (lbs/day)			
	ROG	NO_x	Exhaust PM_{10}	Exhaust $PM_{2.5}$
2015-2019	8.91	28.80	1.82	1.68
2025-2030	13.82	13.44	0.50	0.48
2031-2035	5.29	7.46	0.16	0.15
BAAQMD Considered Construction Threshold	54	54	82	54
Potential Significant Impact?	No	No	No	No

SOURCE: ESA (Appendix E)

Alumni House and that air emissions from the renovations would be generated solely by vendor trips bringing materials and construction worker trips. Construction start dates for these 2014 LRDP proposals were assumed to be year 2030 (except for UC Hall Phase 1). All model inputs and outputs are provided in Appendix E.

Table 6.2-2 presents the average annual daily construction emissions generated by the 2014 LRDP proposals at the Parnassus Heights campus site for each of the three development windows assumed. As can be seen in Table 6.2-2, estimated average daily construction-related exhaust emissions would not exceed the thresholds for NOx, ROG, or particulate matter. Because emissions would be less than the daily thresholds, the local effect would be less than significant.

The BAAQMD approach to analysis of construction-related particulate impacts (other than exhaust PM) emphasizes implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions. As indicated under Impact AIR-LRDP-4 in Section 5.2 of this EIR, the BAAQMD considers construction-related fugitive dust impacts of projects to be less than significant if a suite of recommended dust-control measures are implemented. Therefore, BAAQMD-identified Best Management Practices for control of fugitive dust are adopted Campus-wide in Section 5.2 as **Mitigation Measure AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions.** With this measure in place the construction-related fugitive dust impacts would be less than significant.

Mitigation Measure: Implement Mitigation Measure AIR-LRDP-1

Although the criteria air pollutant emissions from demolition and construction proposals at the Parnassus Height campus site would be below BAAQMD significance thresholds, **Impact AIR-LRDP-4** in Section 5.2 identifies a significant and unavoidable LRDP construction-related air quality impact resulting from emissions of criteria air pollutants when the combined construction at all campus sites is considered. In response, **Mitigation Measure AIR-LRDP-2: Architectural Coatings** and **Mitigation Measure AIR-LRDP-3: Off-Road Equipment Control Measures** were adopted Campus-wide and therefore would also apply to construction projects at the Parnassus Heights campus site.

Mitigation Measures: Implement Mitigation Measure AIR-LRDP-2 and AIR-LRDP-3

Significance after Mitigation: Less than Significant

Impact AIR-PH-2: Demolition and construction activities at the Parnassus Heights campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents. (Less than Significant)

2014 LRDP construction activities would produce DPM and $PM_{2.5}$ emissions due to combustion equipment such as loaders, backhoes, and cranes, as well as haul truck trips. These emissions result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences). These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Consequently, a health risk assessment was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The health risk assessment was based on recommended methodology of the state Office of Environmental Health Hazard Assessment and adopted by BAAQMD. The cancer risk to residential receptors assumes exposure occurs 24-hours per day for 350 days per year. Cancer risk to residential receptors is based on the exposure for the duration of the construction period. These cancer risk estimates also incorporate age sensitivity factors (ASFs). This approach provides updated calculation procedures that factor in the increased susceptibility of infants and children to carcinogens as compared to adults. For estimating cancer risks for residential receptors over a 70 year lifetime, the incorporation of the ASFs results in a cancer risk adjustment factor of 1.7. For the Parnassus Heights campus site, the closest new residential uses would be located at Millberry Union towers and UC Hall, along Parnassus Avenue. Additional existing residences are located to the north, northeast, and northwest, and Aldea Housing is located on the southern portion of the campus site. Seven schools (such as Gratton Elementary School, Haight Ashbury Community Nursery School, and Marilyn Reed Lucia Child Care) were included in the analysis as well as approximately 725 recreational receptors within the Mount Sutro Open Space Reserve (Reserve). Nearly 1,680 receptors were included in the analysis, which used the annual mass construction emissions as predicted by CalEEMod and determined annual average concentrations of DPM and $PM_{2.5}$ that were then used to calculate risk values.

A summary of the health impacts related to demolition and construction of LRDP proposals at the Parnassus Heights campus site is presented in **Table 6.2-3**.

As shown in Table 6.2-3, the maximum cancer risk for the new residence-adult and residence-child associated with the project (located at Millberry Union towers and UC Hall) would be 0.05 and 0.6 per million, respectively. The maximum cancer risk for an existing residence-adult and residence-child (located to the north, northeast, and northwest, and Aldea Housing) would be 0.03 per million and 0.3 per million, respectively. The maximum cancer risk for a school-child receptor (such as Gratton Elementary School, Haight Ashbury Community Nursery School, and Marilyn Reed Lucia Child Care) would be less than 0.02 per million. Thus, the cancer risk due to construction activities alone is less than the BAAQMD threshold of 10 per million and would be less than significant.

TABLE 6.2-3
DEMOLITION AND CONSTRUCTION-RELATED HEALTH IMPACTS
PARNASSUS HEIGHTS PROPOSALS

Receptor Type	Cancer Risk (cancers per million)	Chronic Index	Acute Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
New Residence (adult / child)	0.05 / 0.59	<0.01	<0.01	<0.01
School Children	0.02	<0.01	<0.01	<0.01
Existing Residence (adult / child)	0.03 / 0.29	<0.01	<0.01	<0.01
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

The chronic HI would be less than 0.1 at all receptors. Because the chronic HI would be less than the BAAQMD threshold of 1.0, the impact of all proposals would be less than significant. The acute HI would be less than 0.01 at all receptors including recreational receptors at the Reserve. The acute HI would be below the BAAQMD threshold of 1 and the impact of the proposals would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.1 $\mu g/m^3$ for the new residences associated with the proposals, a schoolchild, and the existing residences. The construction-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Impact AIR-PH-3: Operations at the Parnassus Heights campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (Potentially Significant)

Operation of new Parnassus Heights development under the 2014 LRDP would result in an increase in criteria air pollutant and precursor emissions, including ROG, NOx, PM_{10} and $PM_{2.5}$ from a variety of emissions sources, including onsite area sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.) and mobile on-road sources. Operational emissions of criteria pollutants were estimated using the CalEEMod version 2013.2.2 emissions inventory model. All model inputs and outputs are provided in Appendix E.

One of the sources of operational emissions would be increased vehicle emissions from sources such as additional staff, patients, visitors and residents. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the LRDP (Adavant, 2014). In total, development at the Parnassus Heights campus site would generate an estimated 405 additional daily vehicle trips. In addition to exhaust emissions, vehicles would also generate PM_{10} and $PM_{2.5}$ from entrained road dust and tire and brake wear.

Emissions would also be generated by on-site natural gas combustion, operation of landscape maintenance equipment, and maintenance application of paint and other architectural coatings.

Table 6.2-4 presents estimated operational emissions from LRDP proposals at the Parnassus Heights campus site. Without mitigation, operational emissions of NOx and ROG, PM_{10} and $PM_{2.5}$ would be less than threshold levels. Emission reductions of ozone precursors (ROG and NOx) associated with demolitions and reuse of buildings would more than offset the increases from vehicle trips and would result in a net decrease of ozone precursors.

TABLE 6.2-4
UNMITIGATED OPERATIONAL CRITERIA POLLUTANT EMISSIONS - PARNASSUS HEIGHTS PROPOSALS

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
New Development				
Mobile Sources[a]	0.80	1.31	2.17	0.60
Area Sources[a]	15.61	0.31	0.16	0.16
Natural gas combustion	1.04	9.38	0.72	0.72
Demolition Losses				
Area Sources[a]	-5.24	<0.01	<0.01	<0.01
Natural gas combustion	-0.13	-1.18	-0.09	-0.09
Renovation Losses				
Area Sources[a]	-5.58	<0.01	<0.01	<0.01
Natural gas combustion	-0.16	-1.47	-0.11	-0.11
Total	**6.34**	**8.36**	**2.85**	**1.28**
Regional Significance Threshold	54	54	82	54
Significant Impact?	No	No	No	No

[a] Mobile sources are motor vehicles and trucks. Area sources include landscape maintenance (equipment used for these activities such as gasoline-powered lawnmowers and blowers), maintenance application of paints and other interior and exterior surface coatings, and increased use of consumer products that result in emissions of ROG. Natural gas combustion is for space and water heating.

SOURCE: ESA, 2014 (see Appendix E).

Although estimated emissions at the Parnassus Heights campus site would be less than the daily thresholds, **Impact AIR-LRDP-5** in Section 5.2 identifies a significant and unavoidable operational air quality impact resulting from emissions of criteria air pollutants when LRDP operations at all campus sites are considered. In response, **Mitigation Measure AIR-LRDP-4: BAAQMD-Suggested Operational Measures** was adopted Campus-wide and therefore would also apply to operation of projects at the Parnassus Heights campus site.

Mitigation Measure: Implement Mitigation Measure AIR-LRDP-4

Significance after Mitigation: Less than Significant

Impact AIR-PH-4: Operations at the Parnassus Heights campus site under the 2014 LRDP would expose persons (new receptors) to substantial levels of TACs, which may lead to adverse health effects. (Less than Significant)

As described in Section 5.1.2, the method for determining health risk requires the review of health risk from permitted sources and major roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source), then adding the project impacts to determine whether the health risk thresholds for new receptors are exceeded.

BAAQMD has developed a geo-referenced database of permitted emissions sources throughout the San Francisco Bay Area, and has developed the Stationary Source Risk & Hazard Analysis Tool (dated May 2011) for estimating cumulative health risks from permitted sources. Eight permitted sources are located within 1,000 feet of new residences associated with the 2014 LRDP and included in the cumulative analysis.

BAAQMD has also developed a geo-referenced database of major roadways throughout the San Francisco Bay Area and has developed the *Highway Screening Analysis Tool (*dated May 2011*)* for estimating cumulative health risks from roadways.

BAAQMD *CEQA Air Quality Guidelines* also require the inclusion of surface streets within 1,000 feet of the project with annual average daily traffic (AADT) of 10,000 or greater[4]. Upon review the health impacts from Parnassus Avenue with 11,700 AADT was included for the Parnassus Heights campus site.

Fume hood emissions also contribute to exposure of TACs. As discussed in the setting section, previous health risk assessments for fume hood emissions on the campus site estimated the increased cancer risk at the maximally exposed receptor to be 4.46 in one million (Radian, 1989). Because of the substantial subsequent reduction in chemical use due to microchemistry techniques implemented and improved ventilation systems, current risks are expected to be markedly lower than this 1989 estimate, which is overly conservative. Proposed new residential uses at Fifth and Parnassus Avenues and the Proctor site are located in the same general area as the hypothetical maximally exposed individual of the 1989 study.

A summary of the cumulative health impacts for the new residences proposed at the Parnassus Heights campus site is found in **Table 6.2-5**. Notably, for individual projects/new receptors, the threshold of significance is based on the source with the highest cancer risk, $PM_{2.5}$ concentration, or hazard in comparison to other sources within the 1,000-foot radius of the receptor.[5]

The health impacts from nearby sources in the area would affect new residents associated with the Parnassus Heights campus site. The highest cancer risk from any of the nearby sources would be 4.6 cancer cases per million. Thus, the cancer risk for new receptors is below the BAAQMD threshold of 10 cancer cases per million for a single source and would be less than significant.

4 BAAQMD County Surface Street Screening Tables, May 2011 and CEHTP Traffic Linkage Service Demonstration, http://www.ehib.org/traffic_tool.jsp

5 BAAQMD, *Recommended Methods for Screening and Modeling Local Risk and Hazards*, May 2011.

TABLE 6.2-5
HEALTH IMPACTS FOR NEW RECEPTORS - PARNASSUS HEIGHTS PROPOSALS

Site #	Facility Type	Address/Source	Cancer Risk (cases per million persons)	Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
2479	UCSF / Parnassus[a]	3rd Avenue / Parnassus	4.59[a]	<0.01	0.01
		Roadway Risks - Parnassus Avenue	0.90	<0.01	0.09
		Fume hood emissions	4.46	0.12	<0.01
		Demolition and Construction (adult / child)	0.05 / 0.59	<0.01	<0.01
		Highest Single Source Impact	4.59	<0.01	0.09
		BAAQMD Significance Criteria (new receptor)	10	1	0.3
		Potentially Significant Impact?	No	No	No

[a] UCSF risks presented here were provided by BAAQMD in response to a stationary source inquiry form request and are refined values derived from a screening health risk assessment at an approximated 500 foot distance from the central utility plant area.

SOURCE: KB Environmental Sciences, Inc., 2014.

The highest hazard index from nearby sources would be less than 0.2, which is below the BAAQMD threshold of 1.0. The impact on the proposed residences at the Parnassus Heights campus site would therefore be less than significant. The highest annual $PM_{2.5}$ concentrations would be 0.09 $\mu g/m^3$ as a result of roadway traffic on Parnassus Avenue. This $PM_{2.5}$ concentration at new residences would be below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Impact AIR-PH-5: Operations at the Parnassus Heights campus site under the 2014 LRDP would cumulatively expose persons (existing and new receptors) to substantial levels of TACs, which may lead to adverse health effects. (Less than Significant)

As described in Section 5.1.2, the method for determining health risk requires the review of health risk from permitted sources and major roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source), then adding the project risk to determine whether the cumulative health risk thresholds are exceeded. A summary of the cumulative health impacts for the existing residences for the Parnassus Heights campus site is found in **Table 6.2-6**.

The health impacts from construction and operations plus other sources (permitted sources and roadways) in the area would have a cumulative effect on nearby residence receptors. The maximum cumulative cancer risk for existing residence would be 9.98 per million and 13.36 per million for residence-adult and residence-child, respectively. Thus, the cumulative cancer risk is below the BAAQMD threshold of 100 per million and would be less than significant.

TABLE 6.2-6
CUMULATIVE HEALTH IMPACTS - PARNASSUS HEIGHTS

Site #	Facility Type	Address/Source	Cancer Risk (cancer cases per million persons)	Chronic Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
2479	UCSF / Parnassus[a]	3rd Avenue / Parnassus	4.59	<0.01	0.01
		Parnassus Avenue	0.90	<0.01	0.09
		Fume Hood Emissions	4.46	0.12	<0.01
		Proposed Project (adult / child)	0.03 / 0.29	<0.01	<0.01
		Demolition and Construction (adult / child)	0.05 / 0.59	<0.01	<0.01
		Grand Total (adult / child)	**10.03 / 13.95**	**0.15**	**0.11**
		BAAQMD Cumulative Significance Criteria	100	10	0.8
		Significant Cumulative Impact?	No	No	No

[a] UCSF risks presented here were provided by BAAQMD in response to a stationary source inquiry form request and are refined values derived from a screening health risk assessment at an approximated 500 foot distance from the central utility plant area.

SOURCE: KB Environmental Sciences, Inc., 2014.

The cumulative hazard index would be less than 1. This HI would be well below the BAAQMD threshold of 10 and the impact of the project would therefore be less than significant. The maximum cumulative annual $PM_{2.5}$ concentrations would be 0.1 $\mu g/m^3$, which is below the BAAQMD threshold of 0.8 $\mu g/m^3$, and hence would be considered less than significant.

Mitigation: None required.

6.2.4 References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

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6.3 Biological Resources

This section considers the setting and biological resources impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Biological Resources are contained in Section 4.3 of this EIR. The CEQA Significance Standards presented in Section 4.3.3 are used to evaluate the potential impacts to biological resources of all proposed 2014 LRDP activities.

6.3.1 Biological Resources Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Special status species.** The proposed renovations of UC Hall, Moffitt Hospital and the Millberry Union towers would not result in any potential adverse effect, either directly or indirectly through habitat modifications, on special-status species. No additional analysis of this issue is required for these proposals.

- **Riparian habitat.** No 2014 LRDP proposals would result in an adverse impact to any riparian habitat. Therefore, no additional analysis of this issue is required.

- **Wetlands.** No 2014 LRDP proposals would result in an adverse impact to any federally protected wetlands. Therefore, no additional analysis of this issue is required.

- **Wildlife Movement.** The proposed renovations of UC Hall, Moffitt Hospital and the Millberry Union towers would not result in any impacts to established native resident or migratory wildlife corridors. No additional analysis of this issue is required for these proposals.

- **Policies.** No 2014 LRDP proposals would conflict with any applicable policies protecting biological resources. Therefore, no additional analysis of this issue is required.

- **Conservation plans.** No 2014 LRDP proposals would conflict with any applicable habitat conservation plan. Therefore, no additional analysis of this issue is required.

- **Tree protection.** No 2014 LRDP proposals would result in an adverse impact to heritage or landmark trees. Therefore, no additional analysis of this issue is required.

6.3.2 Biological Resources – Parnassus Heights Setting

Parnassus Heights is located on 107 acres of land near the geographical center of San Francisco. Parnassus Heights is bounded by Carl and Irving Streets to the north, Fifth Avenue to the west and Clarendon Avenue, Christopher Drive and Crestmont Drive to the south. The eastern boundary is bordered by the Cole Valley neighborhood and the City's Interior Greenbelt Natural Area. UCSF's facilities are concentrated at the north end of the campus site where Moffitt Long Hospital, the four schools, clinics, research, auxiliary services, housing, parking and other support uses are located.

The 61-acre Mount Sutro Open Space Reserve (Reserve) occupies the central and southern portion of the campus site and is designated by the Regents as permanent open space. Vegetation within the Reserve is dominated by non-native tree species including blue gum eucalyptus (*Eucalyptus globulus*), Monterey cypress (*Cupressus macrocarpa*), and Blackwood acacia (*Acacia melanoxylon*), with an understory of pittosporum (*Pittosporum* sp.), English ivy (*Hedra helix*), German ivy (*Delairea oderata*), garden nasturtium (*Tropaeolum majus*), Himalayan blackberry (*Rubus armeniacus*). Some native species that occur within the Reserve as a result of restoration efforts include California sagebrush (*Artemesia californica*), sticky monkey flower (*Mimulus aurantiavus*), mugwort (*Artemesia douglasii*), yellow bush lupine (*Lupinus arboreus*), and coyote brush (*Baccharis pilularis*). Other native species found in understory patches throughout the Reserve include California blackberry (*Rubus ursinus*), western sword fern (*Polystichum munitum*), and honeysuckle vine (*Lonicera hispidula*).

6.3.3 Biological Resources – Parnassus Heights Impacts and Mitigation Measures

Impact BIO-PH-1: Demolition and construction activities at the Parnassus Heights campus site could have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. (Potentially Significant)

The following 2014 LRDP proposals could have potentially significant adverse impacts on special-status wildlife and plant species that are known to occur or have a moderate or high potential to occur within or adjacent to the project sites. Suitable habitat that may support special-status plants, wintering aggregations of monarch butterflies, nesting and migratory birds, and special-status bats occurs within the Reserve, and within the vicinity of the proposal sites. Implementation of the mitigation measures described below would reduce potential impacts on special-status plant and wildlife species to a less-than-significant level by avoiding disturbance to special-status plants, wintering monarch butterflies, nesting birds, and roosting bats through seasonal work limits or restrictive buffers around plant populations, wintering sites, active nests, and roosts.

Demolish Existing Buildings

Under the 2014 LRDP, 8 buildings are proposed for demolition on the Parnassus Heights campus site: Surge, Woods, Medical Research 4, Laboratory of Radiobiology, Proctor, Environmental Health and Safety, Koret Vision Research, Langley Porter Psychiatric Institute (LPPI) and three small support buildings. These buildings are located on the northern portion of the Reserve and many of them abut suitable habitat for special-status wildlife inhabiting the Reserve. Following demolition of the Surge, Woods, and Environmental Health and Safety buildings these areas will be restored to open space and incorporated into the Reserve with the exception of existing parking areas. The process of demolishing buildings has the potential to adversely impact special-status wildlife species in surrounding habitat. Once the buildings are demolished and the construction debris is removed, that potential no longer exists.

Construct New Hospital Addition

Following demolition of the LPPI and three support buildings, an addition to the existing Long Hospital will be constructed in the footprints of the former LPPI and support buildings. Construction would take approximately four years. The New Hospital Addition would be located adjacent to the Reserve, which provides suitable habitat for special-status wildlife. The process of constructing the New Hospital Addition has the potential to adversely impact special-status wildlife species inhabiting the Reserve forest through increased noise and visual disturbance during building construction.

Open Space and Utilities

Mount Sutro Open Space Reserve Trails

The 2014 LRDP includes plans to construct three new trails within the Reserve, originally proposed as part of the Mount Sutro Management project, to enhance and improve access for visitors. The proposed trail alignments are approximate, but would generally follow: 1) a trail on the north side of the Reserve connecting the Historic Trail to the campus, allowing for ease of access to/from the campus (Sunset Trail). This trail would begin near the Koret Vision Research building and connect with Medical Center Way before continuing to the Historic Trail; 2) a trail connecting the South Ridge and Quarry Road Trails to Christopher Drive, allowing for easier public access from the south side of the Reserve (Christopher Trail); and 3) an extension of this trail to Clarendon Avenue, which also would provide access to trails in the Interior Greenbelt (on City-owned land) located southeast of the Reserve (Clarendon Trail). Vegetation removal, ground disturbance, and the use of heavy equipment during grading of the trails has the potential to adversely impact special-status plant and wildlife species within the immediate alignment of the new trails as well as within the surrounding habitat.

Medical Gas and Diesel Fuel Storage Tanks

Medical gas storage tanks, diesel fuel storage tanks, and the transmission lines connecting the tanks to Long Hospital are present beneath Medical Center Way. Under the 2014 LRDP the medical gas tanks will be relocated and expanded. The diesel tanks and transmission lines will also be replaced and brought up to code in their current location. Due to the location of Medical Center Way adjacent to the Reserve, special-status wildlife species could be adversely impacted by the increased noise and visual disturbance associated with these activities.

Retaining Wall

Landslides have occurred along the northern slope of the Reserve just south of the Dolby Regeneration Medicine Building. Construction of a retaining wall at this location would stabilize the hillside to prevent future landslides. Vegetation removal and ground disturbance, as well as required excavation and the use of heavy equipment during construction of the retaining wall has the potential to adversely impact special-status plant and wildlife species within the project footprint and in surrounding habitat.

Impacts to Monarch Butterflies

Demolition and building proposals described above could adversely impact overwintering aggregations of monarch butterflies, if present. Mature stands of eucalyptus within the Reserve

and in the vicinity of the retaining wall, new trails and buildings to be demolished provide suitable roosting conditions for wintering monarch butterflies. Disturbing active monarch roosts during the wintering season (October 1 – February 28) would be considered a significant impact. Implementing **Mitigation Measure BIO-PH-1a**, Preconstruction Surveys for Monarch Butterfly Winter Roosts and Avoidance, would reduce potential impacts on monarch butterflies to a less-than-significant level by requiring preconstruction surveys and implementing avoidance measures if active roosts are located.

Mitigation Measure BIO-PH-1a: Preconstruction Surveys for Monarch Butterfly Winter Roosts and Avoidance.

Prior to demolition activities, a qualified biologist familiar with monarch butterfly aggregating behavior and habitat shall conduct a preconstruction survey for the presence of overwintering monarch butterfly aggregations. The survey shall be conducted in December or January during the period when overwintering aggregations appear. Should an overwintering aggregation be identified in trees adjacent to individual proposal sites within the Reserve, a 200-foot buffer shall be established around the occupied trees until the aggregation has dispersed.

Significance after Mitigation: Less than Significant

Impacts to Special-Status and Migratory Birds

Demolition and building proposals described above, especially activities that involve heavy machinery, may adversely impact nesting bird species within 1/4-mile of project sites within and adjacent to the Reserve should they occur during the nesting season (February 15 – August 15). Migratory and native raptor and passerine bird species are known to stopover, forage, and/or nest in the mature non-native forest of the Reserve and on buildings to be demolished or renovated under the 2014 LRDP and within the Parnassus Heights campus site. Adverse effects associated with increased noise and visual disturbance during construction and demolition activities could affect nesting efforts at and around the project sites. The loss of an active nest would be considered a significant impact under CEQA. Moreover, disruption of nesting migratory or native birds is not permitted under the federal MBTA or the California Fish and Game Code, as it could constitute unauthorized take. Thus, the loss of any active nest by, for example, removing a tree or shrub or demolishing a structure containing an active nest, must be avoided under federal and California law. Implementing **Mitigation Measures BIO-PH-1b**, Preconstruction Breeding Bird Surveys and Nest Avoidance, would reduce potential impacts on migratory and special-status birds to a less-than-significant level by requiring preconstruction surveys and implementing avoidance measures if active nests are located.

Mitigation Measure BIO-PH-1b: Preconstruction Breeding Bird Surveys and Nest Avoidance.

Should construction activities associated with the new retaining wall, new trails, demolition of buildings, relocation, expansion, and replacement of the medical gas and diesel fuel tank storage, and construction of the new hospital addition within the Parnassus Heights campus site, commence during breeding bird season (February 15 – August 15) annually, UCSF shall retain a qualified biologist to conduct preconstruction nesting bird surveys in surrounding

habitat for nesting birds. UCSF shall implement specific measures to avoid and minimize impacts on nesting birds including, but not limited to, those described below.

- To avoid and minimize potential impacts on nesting raptors and other birds, preconstruction surveys shall be performed not more than two weeks prior to initiating vegetation removal and/or construction and demolition activities during the breeding season (i.e., February 15 through August 15).
- To avoid and minimize potential impacts on nesting raptors and other birds, a no-disturbance buffer zone shall be established around active nests during the breeding season until the young have fledged and are self-sufficient, when no further mitigation would be required. Typically, the size of individual buffers ranges from a minimum of 250 feet for raptors to a minimum of 50 feet for other birds but can be adjusted based on an evaluation of the site by a qualified biologist in cooperation with the USFWS and/or CDFW.
- Birds that establish nests after construction starts are assumed to be habituated to and tolerant of the indirect adverse impacts resulting from construction noise and human activity. However, direct take of nests, eggs, and nestlings is still prohibited and an appropriate buffer shall be established around the nest according to species and proximity to project activities in order to avoid nest abandonment or destruction, as determined by a qualified biologist.
- If construction or demolition activities ceases for a period of more than two weeks, or vegetation removal is required after a period of more than two weeks has elapsed from the preconstruction surveys, then new nesting bird surveys shall be conducted.

Significance after Mitigation: Less than Significant

Impacts to Special-Status Bats

Demolition and building proposals described above, especially activities that involve heavy machinery, could adversely impact special-status bats roosting within or adjacent to project sites within the Reserve forest. Bats hibernating or with an active maternity roost in trees on the perimeter of the Reserve forest adjacent to 2014 LRDP activities within the Parnassus Heights campus site could be disturbed by construction and demolition activities. Activities that could cause female bats to abandon pups could result in direct mortality of special-status bats at maternity roosts. This would be considered a significant impact. Potential impacts on special-status bats would be reduced to a less-than-significant level by **Mitigation Measure BIO-PH-1c**, Avoidance and Minimization Measures for Special-Status Bats, requiring preconstruction surveys and seasonal avoidance measures if active roosts are detected.

Mitigation Measure BIO-PH-1c: Avoidance and Minimization Measures for Special-Status Bats.

A qualified wildlife biologist shall conduct preconstruction special-status bat surveys of suitable roost sites in the vicinity of construction and demolition sites that abut the forest of Mount Sutro Open Space Reserve. If active day or night roosts are found, the wildlife biologist shall take actions to make such roosts unsuitable habitat before construction and demolition activities begin. A no-disturbance buffer of 100 feet shall be created around active bat roosts being used for maternity or hibernation purposes. Bat roosts that are

established during active construction or demolition are presumed to be unaffected by these activities, and no buffer would be necessary.

Significance after Mitigation: Less than Significant

Impacts to Special-Status Plants

Construction of new trails and the retaining wall within the Reserve could adversely impact special-status plants, if present, within the footprint of these project sites. Coastal triquetrella and San Francisco gumplant have the potential to occur in suitable habitat within the Reserve. Vegetation clearing and ground disturbance associated with construction of the retaining wall and new trails within the Reserve could result in direct loss of special-status plants or loss of the vegetation communities which support these species, which would be a significant impact. Implementing **Mitigation Measure BIO-PH-1d**, Preconstruction Surveys for Special-Status Plants and Plant Avoidance and **Mitigation Measure BIO-PH-1e**, Relocation of Special-Status Plants, would reduce the potential impacts on special-status plants to a less-than-significant level by requiring preconstruction surveys and requiring avoidance and relocation measures should special-status plants be found.

Mitigation Measure BIO-PH-1d: Preconstruction Surveys for Special-Status Plants and Plant Avoidance.

Prior to construction activities, a qualified botanist shall conduct preconstruction surveys for special-status plants, coastal triquetrella and San Francisco gumplant, within the footprints of and in suitable habitat adjacent to locations of the new retaining wall, new trail alignments, and any access routes and staging areas to be used in support of these projects. Surveys for coastal triquetrella can be conducted at any time of the year however surveys for San Francisco gumplant shall occur in the summer (June – September). Should special-status plant species be found during surveys, occurrences shall be marked in the field for avoidance during construction.

Mitigation Measure BIO-PH-1e: Relocation of Special-Status Plants.

If special-status plants are located within the retaining wall or new trails footprint and cannot be avoided, then a rare plant salvage and relocation plan shall be developed to relocate individuals to suitable habitat within the Reserve. A qualified botanist shall develop and implement the plan according to CDFW guidelines and in coordination with CDFW. At a minimum, the plan shall include collection of reproductive structures from affected plants, a full description of microhabitat conditions necessary for each affected species, seed germination requirements, restoration techniques for temporarily disturbed occurrences, assessments of potential transplant and enhancement sites, success and performance criteria, and monitoring programs, as well as measures to ensure long-term population viability. The mitigation methods shall include either salvage and transplantation or collection and propagation of seeds or other vegetative material. Any plant relocation shall be done under the supervision of a qualified restoration botanist.

Significance after Mitigation: Less than Significant

Impact BIO-PH-2: Demolition and construction activities at the Parnassus Heights campus site could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Potentially Significant)

The City of San Francisco and the San Francisco Bay exist along the Pacific Flyway, a main north-south travel corridor for migrating birds extending from Alaska to Patagonia. The migratory flights of different types of birds occur at different altitudes. Soaring migrants, such as hawks, usually take advantage of thermal drafts and typically migrate at 3,000 feet or less. Most passerine species migrate at night and, over land, they typically fly 1,500 feet to 2,400 feet in altitude but can also fly much lower, depending on conditions. Weather conditions often affect the migratory altitude, since birds may fly higher or lower to avoid or take advantage of prevailing winds or to avoid a cloud deck (Cornell Lab of Ornithology, 2007).

The Reserve forest provides desirable habitat for both resident and migrating birds due to its expanse of mature trees and dense understory isolated within an urban setting. 2014 LRDP proposals located within the vicinity of suitable habitat for resident and migratory birds, such as the New Hospital Addition may result in an increase of bird collisions, resulting in a significant impact.

Implementation of **Mitigation Measure BIO-LRDP-1: Bird Safe Building Treatments** would reduce potential adverse effects on resident and migrating birds to a less than significant level by requiring design features that would make buildings more visible to birds.

Mitigation Measure: Implement Mitigation Measure BIO-LRDP-1

Significance after Mitigation: Less than Significant

Many collisions are induced by artificial night lighting, particularly from large buildings, which can be especially problematic for migrating songbirds since many are nocturnal migrants (Ogden, 1996). The tendency of birds to move towards lights at night when migrating, and their reluctance to leave the sphere of light influence for hours or days once encountered (Graber, 1968), has been well documented (Ogden, 1996). Birds can become “trapped” by a light source and, disoriented, continue to fly around the source until they become exhausted and drop to the ground, where they may be killed by predators (Ogden, 1996) or die from stress or exhaustion (Reed et al., 1985). Light attraction in birds is positively related to light intensity, and studies have shown that reduction in lighting intensity and changing fixed lighting to a flashing or intermittent light system can dramatically reduce avian mortality at lighted structures (Jones and Francis, 2003). It has been suggested that structures located at key points along migratory routes may present a greater hazard than those at other locations (Ogden, 2002). Other research suggests that fatal bird collisions increase as light emissions increase, that weather often plays an important part in increasing the risk of collisions (Verheijen, 1981), and that nights with heavy cloud cover and/or precipitation (e.g. San Francisco summer fog) present the conditions most likely to result in high numbers of collisions (Ogden, 2002).

Demolition and building proposals at the Parnassus Heights campus site described above could temporarily adversely impact resident and migrating birds and bats within or moving through project

sites and the surrounding Reserve due to an increase in night lighting during demolition and construction activities in support of the 2014 LRDP proposals. Implementation of **Mitigation Measure BIO-PH-2a**, Night Lighting Minimization during Construction and **Mitigation Measure BIO-PH-2b,** Operational Night Lighting Minimization, in combination with **Mitigation Measure BIO-PH-1b**, Preconstruction Breeding Bird Surveys and Nest Avoidance, and **Mitigation Measure BIO-PH-1c**, Avoidance and Minimization Measures for Special-Status Bats, would reduce potential adverse effects associated with 2014 LRDP activities on the Parnassus Heights campus site on resident and migratory birds and bats within the Reserve to less than significant levels.

Mitigation Measure BIO-PH-2a: Night Lighting Minimization during Construction.

Construction areas set up for nighttime activity and requiring lights shall implement the following measures as long as the safety of workers is not compromised:

- All construction related lighting shall be fully shielded and focused down to ensure no significant illumination passes beyond the immediate work area. Lighting shall be positioned around the perimeter of the work area positioned toward activity and not surrounding habitat of the Reserve.
- Yellow or orange light shall be used where possible.
- Construction personnel shall reduce the amount of lighting to the minimum necessary to safely accomplish the work.
- Night construction near suitable habitat for nesting and migratory birds and bats (i.e. the Reserve forest and understory vegetation) shall be avoided during nesting season (February 15 – August 15). If night construction near these areas cannot be avoided, light shall not be allowed to shine directly into suitable habitat.
- Construction areas set-up for night time activity are subject to all of the same preconstruction surveys for nesting birds and roosting bats listed in this section, above.

Mitigation Measure BIO-PH-2b: Operational Night Lighting Minimization.

In addition to minimizing night lighting during demolition and construction of the 2014 LRDP proposals, UCSF shall similarly ensure that the design and specifications for buildings implement design elements to reduce lighting usage, change light direction, and contain light. These include, but are not limited to, the following general considerations that shall be applied wherever feasible throughout 2014 LRDP proposals within the Parnassus Heights campus site to reduce night lighting impacts on avian and bat species:

- Avoid installation of lighting in areas where not required for public safety.
- Examine and adopt alternatives to bright, all-night, floor-wide lighting when interior lights would be visible from the exterior or when exterior lights must be left on at night, including:
    - Installing motion-sensitive lighting
    - Installing task lighting
    - Installing programmable timers
    - Installing fixtures that use lower-wattage, sodium, and yellow-red spectrum lighting (if compatible with personnel safety requirements).

- Install strobe or flashing lights in place of continuously burning lights for any obstruction lighting that may be required.
- Where exterior lights are to be left on at night, install fully shielded lights to contain and direct light away from the sky.

Significance after Mitigation: Less than Significant

No other established native resident or migratory wildlife corridors or native wildlife nursery sites exist within or in the vicinity of the Parnassus Heights campus site.

6.3.4 References

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6.4 Cultural Resources

This section considers the cultural resources setting and impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Cultural Resources are contained in Section 4.4 of this EIR. The CEQA Significance Standards presented in Section 4.4.3 are used to evaluate the potential impacts to cultural resources of all proposed 2014 LRDP activities.

6.4.1 Cultural Resources Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Historical resources.** The proposed New Hospital Addition would not result in an adverse effect on historical resources. Therefore, no additional analysis of this issue is required for this activity.
- **Archaeological resources.** The proposed demolition of 8 existing buildings and the renovations of Moffitt Hospital, UC Hall and the Millberry Union towers would not result in an adverse effect on archaeological resources. Therefore, no additional analysis of this issue is required for these activities.
- **Paleontological resources.** The proposed demolition of 8 existing buildings and the renovations of Moffitt Hospital, UC Hall and the Millberry Union towers would not result in an adverse effect on paleontological resources. Therefore, no additional analysis of this issue is required for these activities.
- **Human remains.** The proposed demolition of 8 existing buildings and the renovations of Moffitt Hospital, UC Hall and the Millberry Union towers would not result in an adverse effect on human remains. Therefore, no additional analysis of this issue is required for these activities.

6.4.2 Cultural Resources – Parnassus Heights Setting

UCSF is historically associated with the Toland Medical College, founded in downtown San Francisco in 1863. In 1873, the Toland Medical College was acquired by and became affiliated with the University of California. The UCSF campus was established through a combination of factors, including the appropriation of $250,000 by the state legislature in 1895 to construct three buildings to house the "Affiliated Colleges" of Dentistry, Medicine, and Pharmacy. Also, in 1895, Adolph Sutro, the former mayor of San Francisco, presented the University with a gift of its first 13 acres, known as Parnassus Heights. The cornerstone for the Affiliated Colleges at the Parnassus Heights site was laid on March 27, 1897, and the University opened in October 1898.

UC Hall, known as UC Hospital when it was completed in 1917, was the first hospital building constructed on the site. Construction of additional medical facilities, academic buildings, and other

support functions continued throughout the first half of the 20th century, occurring primarily along the south side of Parnassus Avenue and eventually stretching from 3rd Avenue to Hillway Avenue. Post-war growth continued to be concentrated in areas south of Parnassus Avenue, including Moffitt Hospital and the Medical Sciences Building (1955), as well as areas north of Parnassus Avenue to Irving Street.

In the period from the 1960s to 1980s, the University refurbished a number of the aging buildings such as UC Hall, originally completed in 1917, and the Clinical Sciences Building which was originally completed in 1933. Other buildings were demolished in this period, such as the old Medical School Building – completed in 1898 and located in what is now Saunders Court between the Medical Sciences Building and the School of Nursing.

New buildings during this period included University House which opened in 1965 to be used as the Chancellor's Residence, and two glass towers behind the Medical Science and Clinical Sciences buildings called Health Science East and West, which were completed in 1966. The School of Nursing building was competed in 1972 and the Ambulatory Care Center building on the opposite side of Parnassus Avenue was completed in 1973. In 1975, UCSF occupied over 3,000,000 square feet of clinical, research and office space. Numerous new buildings were also added in the 1980s, including the new School of Dentistry building (1980), the modernized Moffitt Hospital projects (1980), the new Long Hospital (1983), and the Koret Center (1986).

6.4.2.1 Mount Sutro Open Space Reserve

The potential historical significance of the Mount Sutro Open Space Reserve (Reserve) was evaluated as a cultural landscape as part of the UCSF *Mount Sutro Management Draft EIR* (UCSF, 2013). An analysis conducted for this EIR, completed by Bradley, et al (2013), found that the Reserve is a historical resource for the purposes of CEQA and is eligible for inclusion in the California Register of Historical Resources for its association with Adolph Sutro and his development of the Sutro Forest (the period of this significance extends from 1886 when Sutro first began to plant the Sutro Forest to his death in 1898), and for its association with the history of San Francisco and the informal development of this naturalistic landscape as a recreational area and green space for the City; the period of this significance extends from 1886 when Sutro first began to plant the forest to the present (UCSF, 2013).

The character-defining features that convey its historical significance include: (1) the presence of a forest that covers the overwhelming majority of the land area and whose dominant species is eucalyptus, (2) the presence of the Historic and Fairy Gates trails as part of a consciously laid out trail system and the presence of informal or social trails which have developed over time related to land use activities and to provide connections into Mount Sutro from the surrounding neighborhoods, and (3) the natural topographic characteristics of the site including the steep terrain, the rock outcrops, Stanyan Canyon and the summit (UCSF, 2013).

No archaeological resources have been recorded within the Reserve. However two sites within the Reserve are unofficially associated with Ishi, the name given to the lone survivor of the northern California tribe of Yahi Indians, who lived and worked at the Anthropology Museum on the UCSF

Parnassus Heights campus between 1911 and 1916. One site is the large rock outcropping which creates an overhang located southeast of the Chancellor's residence. The second is a deep cave with multiple chambers that is located northwest of the Chancellor's residence. In 1998, UCSF retained an archaeologist to perform archaeological testing and excavation in the area, but no artifacts that may have been attributable to Ishi were found (Holman, 1998).

6.4.3 Cultural Resources – Parnassus Heights Impacts and Mitigation Measures

Impact CUL-PH-1: Demolition of seven buildings at the Parnassus Heights campus site would not result in a substantial adverse change in the significance of historical resources. (No Impact)

The 2014 LRDP proposes to demolish eight buildings at the Parnassus Heights campus site: the Langley Porter Psychiatric Institute (LPPI), Environmental Health and Safety, Koret Vision Research, Surge, Woods, Medical Research 4, Laboratory of Radiobiology and Proctor. The effects of demolishing seven of these buildings are discussed below. Demolition of Surge is discussed under Impact PH-CUL-2.

To comply with the seismic requirements of Senate Bill 1953, inpatient uses at Moffitt Hospital would be decommissioned and a new addition to Long Hospital would be constructed on the present site of the Langley Porter Psychiatric Institute (LPPI). LPPI is a seven-story, 107,000 gsf building that houses psychiatric inpatient and outpatient uses, as well as instruction, research and administrative space. LPPI (including three small support structures that contain an additional 4,600 gsf) is planned to be demolished prior to 2025 to allow for construction of a new Hospital Addition. LPPI, constructed in 1941, and the three small support structures, constructed between 1964 and 1979, have been determined to be ineligible for inclusion in the California Register of Historical Resources (CRHR) and the National Register of Historic Places (NRHP) (Carey, 2011). The reconnaissance-level pedestrian survey of these buildings in 2014 by ESA found they are essentially unchanged since its original evaluations, although LPPI has received a newer paint scheme within the last 10 years. These buildings are not identified on any local registers or surveys and are not considered historic resources for CEQA purposes. As such, their proposed demolition under the 2014 LRDP would have no impact on historic resources. In addition, there are no historic resources in the immediate project vicinity that could be indirectly affected by the proposed new Hospital Addition.

The two-story, 6,200 gsf Environmental Health and Safety building is located south and uphill of the Dolby Regeneration Medicine Building across Medical Center Way on the northern edge of the Reserve. The occupants would be moved into other buildings on the campus site and the building demolished before the construction of the new hospital addition. The site would be restored as open space and added to the Reserve, though the existing parking area would remain as would the adjacent Annex building. The building was constructed in 1971. It was determined to be ineligible for inclusion in the CRHR or the NRHP and is not listed on a local register. It is not considered to be a historic resource. Because this building is not considered a historic resource for CEQA purposes, its demolition would have no significant impact to historic resources.

Located behind the Dental Clinics building and UC Hall on Koret Way, the four-story Koret Vision Research building contains approximately 40,000 gsf. The Koret Vision Research building would be demolished toward the end of the LRDP horizon, after the new Hospital Addition is built and the Moffitt building is renovated and can accommodate Koret Vision Research occupants and programs. The site may be developed with parking or open space. Constructed in 1986 and designed by the San Francisco-based architectural firm, The Design Partnership, the Koret Vision Research building was named for Joseph Koret, a local philanthropist who suffered from serious vision disability. As this building would not reach the standard 50-year age threshold by the 2035 horizon year, it would not meet the minimum age requirement for potential listing in the NRHP or CRHR. In addition, research did not reveal any significant historical or architectural associations that would indicate the building would qualify for the NRHP/CRHR once it does reach sufficient age. As such, this building would not be considered a historic resource for CEQA purposes, and its demolition would not result in a significant impact to historic resources.

The 2014 LRDP proposes to demolish four small buildings: Woods, Medical Research 4, Laboratory of Radiobiology and the Proctor building. Together, these four buildings contain about 44,300 gsf. The Medical Research 4 and the Laboratory of Radiobiology buildings would be demolished by 2016; the demolition of the Woods buildings would follow within the next several years. Because the Proctor building was constructed with funds donated by the Proctor family for use by the foundation for its clinical, research and teaching functions, UCSF is obligated to provide the Proctor Foundation with comparable replacement space or funds to construct equivalent new space. Such obligations must be met before the building is vacated and demolished; therefore, demolition of the Proctor building is likely to occur toward the end of the LRDP horizon.

None of these seven buildings is potentially eligible for the CRHR or the NRHP. The Woods building site would be restored to open space and incorporated into the Reserve, though its existing parking area would remain. The Laboratory of Radiobiology and Medical Research 4 sites would be developed to provide additional surface parking and possibly new loading dock space for delivery vehicles. The Medical Research 4 site may also be developed with expanded outdoor play yard space for the nearby Kirkham Child Care Center. The Proctor building site and 735 Parnassus Avenue site, where a small building was recently removed, may be developed with housing if they are not developed as open space.

A review of these buildings in 2014 by ESA found that all of them are essentially unchanged since they were originally evaluated, with the exception of Medical Research 4, which has been repainted. As such, their current historic status would remain unchanged. The demolition of Medical Research 4, the Laboratory of Radiobiology, Woods and Proctor buildings would have no impact on historic resources.

Mitigation: None required.

Impact CUL-PH-2: Demolition of the Surge building at the Parnassus Heights campus site would result in a substantial adverse change in the significance of an historical resource. (Potentially Significant)

The Surge building, which was constructed in 1966, would likely be eligible for the CRHR and NRHP when it reaches 50 years of age in 2016. The Surge building site would be restored to open space and incorporated into the Reserve, though its existing parking area would remain. According to the evaluation of this building,

> *When it becomes 50 years old [2016], it is likely that Surge will be eligible for listing in the NRHP/CRHR under Criterion C/3 as the "work of a master" (Claude Stoller), as a work that possesses "high artistic values," and as an excellent and well-preserved example of the Second Bay Region Tradition. As demonstrated, Stoller was an important figure in the architectural community of the Bay Region Tradition. Claude Stoller was best known as a practitioner of a regional variety of modernism called the Second Bay Region Tradition. Overall, the building retains integrity displaying the character defining features of the style and possesses the aspects of design, materials, and workmanship, location, setting, feeling and association.*

Given this evaluation, and the fact that the building appears unchanged since its original evaluation, the Surge building is presumed to be a historic resource for CEQA purposes when it reaches 50 years of age in 2016. As the building is proposed to be demolished sometime after 2016, demolition would be considered a significant impact to historical resources. UCSF shall implement **Mitigation Measure CUL-LRDP-2**, which requires documentation of this resource to National Park Service's Historic American Building Survey (HABS) standards. While avoidance of demolition would reduce the impact to a less-than-significant level, the implementation of HABS photo-documentation prior to demolition would not reduce the impact to a less-than-significant level. This impact is considered significant and unavoidable.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-2

Significance after Mitigation: Significant and Unavoidable

Impact CUL-PH-3: Renovation of Moffitt Hospital, UC Hall and Millberry Union towers at the Parnassus Heights campus site would not result in a substantial adverse change in the significance of historical resources. (Less than Significant)

UC Hall

Built in 1917, UC Hall is the oldest building on the Parnassus Heights campus site. It has been determined to be potentially eligible for the CRHR and the NRHP under criteria A/1 and C/3 (Carey & Co., 2003). A review of this building by ESA in 2014 found that it is unchanged since its original evaluation, and as such, its historic status would remain unchanged. This seven-story building is in the west end of the campus site on Parnassus Avenue. It contains approximately 147,000 gsf. UC Hall was slated for demolition in the 1996 LRDP. UCSF now proposes to retain, seismically retrofit, renovate and reuse UC Hall by 2019. The top three floors would be used as housing, with up to 134 beds in 105 units. Initially, the three full floors below the housing would be used as faculty offices; these floors would be converted to housing (up to 78 beds in 64 units)

after Moffitt Hospital is decommissioned and renovated and is available for other uses including the offices displaced from these three floors of UC Hall.

In the westernmost courtyard of UC Hall, is the single-story, semicircular Toland Hall auditorium structure. Within Toland Hall are series of Depression-era murals painted by Bernard Zakhiem, a student of Diego Rivera, in 1938. These murals depict the history of medicine in California. Original skylights also remain in the auditorium, and the two surviving original interior stairwells feature marble treads and steel balustrades topped by a clear varnished wood handrail. Although UC Hall's interior has been extensively modified, Toland Hall and its corresponding murals remain intact and are considered to be a significant resource (UCSF, 2005). As described in Mitigation Measure 3.3-3 in UCSF's LRDP #2 – Hospital Replacement EIR, UCSF would have been required to remove and conserve these murals at an appropriate facility prior to the demolition of UC Hall (UCSF, 2005). This measure would no longer apply, as the proposed project would retain UC Hall, including the Zakheim Murals in Toland Hall.

UCSF retained the firm of Page & Turnbull to make preliminary recommendations regarding alterations to the exterior of UC Hall that would be consistent with the Secretary of the Interior's Standards for Rehabilitation (Page & Turnbull, 2011). Recommendations were also made regarding the preservation of the Zakheim Murals within Toland Hall. As indicated in Chapter 3, *Project Description*, UCSF would follow those recommendations to ensure that, in carrying out the renovation project, the Secretary of the Interior's Standards for Rehabilitation are met. Generally, under CEQA, projects that comply with the Secretary of the Interior's Standards are considered to have a less-than-significant impact on the environment. As UCSF intends to follow the Standards for Rehabilitation when renovating UC Hall, no significant impacts to this historic resource would occur.

UCSF completed HABS photo-documentation of UC Hall in 2005 (Page & Turnbull, 2005). Although not required as part of mitigation for the renovation for this building, this effort provides a documentary record of the building in its existing condition, and documents the significant interior and exterior features of the building.

Millberry Union

The Millberry Union towers at 500 Parnassus Avenue are currently used as office space. UCSF would convert the upper levels to student housing (the original use of the towers). Preliminary studies indicate that up to 83 studio and one-bedroom units could be provided. This conversion would occur toward the end of the LRDP horizon after Moffitt Hospital is decommissioned and renovated, so that current occupants of the Millberry Union towers could be relocated into the vacated Moffitt building. The ground floor uses of Millberry Union and the levels below, which are mostly retail with a small amount of office and outpatient space, would not change.

Built in 1955, Millberry Union was determined individually eligible for inclusion in the NRHP and CRHR (Carey, 2011). This evaluation found that the building is historically significant under NRHP/CRHR Criterion A/1 (historic events), as the first and only location on campus where students and faculty could share in social, cultural, and recreational activities. A review of this

building by ESA in 2014 found that it is unchanged since its original evaluation, and as such, its historic status would remain unchanged. Millberry Union is considered a historic resource for CEQA purposes. Renovation activities to convert the upper levels from office space back to student housing (the original use of the towers), would primarily occur on the interior of the building and would not alter the building's exterior appearance. As the building has been identified as significant for its association with historic events, and not for its architecture, the proposed interior conversion project would not alter any of the features which convey its historic significance. The building would continue to serve both students and faculty after the conversion project. As such, no significant impacts to the Millberry Union as a historic resource would occur as a result of this project. No mitigation measures would be required.

Moffitt Hospital

The decommissioned Moffitt Hospital would be renovated and reused for outpatient, hospital support and office uses. The existing circular driveway along Parnassus Avenue, which would no longer be needed for patient drop-off and pick-up, would be reused for other purposes such as commercial loading, shuttle loading or open space. Constructed in 1955 and renovated and expanded numerous times since, Moffitt Hospital has been determined ineligible for inclusion in the CRHR and the NRHP. The reconnaissance-level pedestrian survey of this building in 2014 by ESA found they are essentially unchanged since its original evaluation. This building is not identified on any local registers or surveys and is not considered historic resources for CEQA purposes. Further renovation of Moffitt Hospital under the LRDP would have no impacts to historic resources.

Mitigation: None required.

Impact CUL-PH-4: Seismic rehabilitation of the historic Faculty Alumni House could result in a significant impact to this historic structure if not completed in accordance with the Secretary of the Interior's Standards. (Potentially Significant)

The Faculty Alumni House at 745 Parnassus Avenue was built in 1915, and was determined to be eligible for listing in the California Register by Carey & Co, in 2011. As such, the Faculty Alumni House is considered a historical resource for CEQA purposes. UCSF proposes to retrofit the Faculty Alumni House to meet seismic standards. However, the retrofit plans are conceptual at this point and no details are currently available. In the absence of detailed seismic retrofit plans, it is unknown whether the project would or would not adversely affect this historic building. If not completed in a manner that complies with the Secretary of the Interior's Standards for Rehabilitation, the seismic retrofit project could have a significant adverse impact on the integrity of this historic building, which would be considered a potentially significant impact to historic resources. There are measures available which could mitigate the potential impact to a less-than-significant level, described in Mitigation Measure CUL-PH-4.

> **Mitigation Measure CUL-PH-4:** UCSF shall ensure that the proposed seismic upgrades to the Faculty Alumni House at 745 Parnassus Avenue would comply with the Secretary of the Interior's Standards for Rehabilitation. UCSF shall hire a qualified professional architectural historian to review the proposed seismic upgrade plans for compliance with

the Standards, and prepare a technical memorandum which describes any changes to the seismic design (if any) that may be needed to meet the Standards. Generally, under CEQA, projects that comply with the Secretary of the Interior's Standards are considered to have a less-than-significant impact on the environment.

Significance after Mitigation: Less than Significant

Impact CUL-PH-5: Renovation of Saunders Court at the Parnassus Heights campus site could alter the features and spaces which convey its historic significance as a cultural landscape, which could result in a substantial adverse change in the significance of historical resources. (Potentially Significant)

With the completion of the Health Sciences Instruction & Research building in 1967, the old Medical School Building was demolished. In its place Saunders Court was constructed, which forms one of the few designed open spaces on campus. Designed by renowned landscape architect Robert Royston, Saunders Court features columns from the old Medical School Building as well as the cornerstone from one of the original Affiliated Colleges buildings from 1898. It is named after John B. De C. M. Saunders (1903-1991), UCSF's first Provost (1958-1964) and first Chancellor (1964-1966).

Asymmetrical concrete stairs descend from the south and southeast sides of Saunders Court onto a large patch of grass that occupies the center of this gently sloped, square-shaped landscape. Concrete pathways with alternating panels of exposed aggregate and bands of smooth concrete define the rest of the landscape's perimeter, while buildings surround the courtyard on all four sides. Pine trees and a variety of small green shrubs create a largely monochromatic palette of foliage. A low concrete bench runs the length of the southern perimeter, while a variety of temporary/removable benches are located within the landscape as well.

Saunders Court would undergo changes to improve its functionality for general use and special events. Improvements would include an expansion of the pavement, seating and tables at the north end to accommodate more people without compromising pedestrian movement between Medical Sciences and School of Nursing buildings, a new diagonal walkway with historic information about UCSF that would cut through the center of the courtyard, conversion of part of the lawn to a different surface material, new plants and features that mitigate windy conditions and provide access for the disabled and for fire trucks. The project would also improve connectivity between Parnassus Avenue and Saunders Court through Clinical Sciences.

At the time of the survey and evaluation by Carey & Co. in 2011, Saunders Court was 43 [now 46] years old, seven [now 4] years shy of the fifty-year threshold for resources typically listed on the NRHP/CRHR. It does not appear to meet a level of exceptional importance; however it is a significant cultural landscape on the UCSF campus and may become eligible for the NRHP/CRHR under Criteria A/1 and C/3 when it reaches fifty years of age. Saunders Court is the only space on campus that embodies both the original Affiliated Colleges campus and the postwar expansion of the university. Its footprint is that of the old Medical School Building, the last of the original Affiliated Colleges buildings to be demolished, and the courtyard exists because postwar expansion of the campus resulted in dramatic alterations to campus architecture. For these

reasons, the courtyard appears to be eligible for the NRHP/CRHR under Criterion A/1. Master landscape architect Robert Royston designed the courtyard. While more research would have to be completed to determine how significant this cultural landscape is within Royston's oeuvre, it may be eligible for the NRHP/CRHR under Criterion C/3 as the work of a master architect. The cultural landscape appears to retain excellent integrity in all seven categories, having undergone few alterations since its creation.

Given that Saunders Court may become eligible for the NRHP/CRHR under Criteria A/1 and C/3 when it reaches fifty years of age in 2017, well within the LRDP horizon, this landscape is presumed to be a historic resource for CEQA purposes. Proposed renovations would not alter its historic significance under NRHP/CRHR criterion A/1, as it would continue to represent postwar expansion of the campus, as well as the former location of the original Medical Center Building, even after proposed landscape improvements. The proposed renovations may alter its historic significance under NRHP/CRHR criterion C/3, including those features or spaces designed by master landscape architect Robert Royston, if the new courtyard design is completed in a manner that is incompatible with the original design intent. For example, the proposed new diagonal walkway through the center of the courtyard, conversion of part of the lawn to a different surface material, and new plantings, may not be compatible with Royston's original design intent for the courtyard. As such, renovation activities could have a significant impact on Saunders Court as a significant cultural landscape.

> **Mitigation Measure CUL-PH-5:** Prior to undertaking any further designs for the renovation of Saunders Court, UCSF shall: 1) complete additional research at the UCSF Archives and the Robert R. Royston Collection (1946-1972) at the Environmental Design Library at UC Berkeley to determine the relative significance of this cultural landscape within Royston's overall body of work, 2) identify the character-defining features of the landscape itself (i.e., those features which convey its historic significance), and 3), hire a professional landscape architect and/or landscape historian to design the renovation project in a manner that is respectful of, and compatible with, the character-defining features of the landscape and is consistent with the *Secretary of the Interior's Guidelines for Rehabilitating Cultural Landscapes*.
>
> **Significance after Mitigation:** Less than Significant

Impact CUL-PH-6: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to archaeological resources. (Potentially Significant)

To comply with the seismic requirements of Senate Bill 1953, a new addition to Long Hospital would be constructed on the Langley Porter Psychiatric Institute (LPPI) site. According to the project description in Chapter 3, construction would take about four years, ending by 2030. The addition would contain up to 140 beds in approximately 308,000 gsf. The New Hospital Addition would be seven stories or about 110 feet in height, excluding rooftop mechanical equipment which could add up to an additional 17 feet. The building has not yet been designed, but concept studies indicate it could be set back from Parnassus Avenue with a landscaped strip to provide a passenger drop-off/pick-up, parking and loading loop that would exit directly across from

Hillway Avenue. The upper portion of the building would step back from the lower portion to minimize shading on Parnassus Avenue and to create a more attractive appearance and better human scale when viewed from the public street. Additional loading space may be created at the back of the building. The corner of the building would be designed to be architecturally prominent as the eastern gateway to the campus site.

Previous studies and archival research conducted for the Parnassus Heights campus site have not identified archaeological resources at the site. Archaeological sites are generally located near watercourses or water bodies, and the Parnassus Heights campus site is not such a setting. Additionally, this campus site has been extensively modified over time, and the likelihood of discovering archaeological resources would thus be low.

In the unlikely event that archaeological artifacts are discovered during construction (including grading, excavation and other earthmoving activities), **Mitigation Measure CUL-LRDP-3** would be implemented to reduce the impact to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-3

Significance after Mitigation: Less than Significant

Impact CUL-PH-7: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to paleontological resources. (Potentially Significant)

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. In general, older sedimentary rocks (more than 10,000 years old) are considered most likely to yield vertebrate fossils of scientific interest. Review of geological maps and previous analysis suggests that there no unique paleontological resources or unique geologic features at the Parnassus Heights campus site, which is underlain by dune sands. In the event that paleontological resources are uncovered during the course of construction, implementation of **Mitigation Measure CUL-LRDP-3** would reduce impacts to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-3

Significance after Mitigation: Less than Significant

Impact CUL-PH-8: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to human remains. (Potentially Significant)

There are no known human remains, including those interred outside of formal cemeteries located at the Parnassus Heights campus site. In the event of an accidental discovery or recognition of

human remains during project excavation and construction, **Mitigation Measure CUL-LRDP-5** would be implemented to reduce the impact to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-5

Significance after Mitigation: Less than Significant

Impact CUL-PH-9: Infrastructure and utilities improvements proposed at the Parnassus Heights campus site, including the Parnassus Avenue Streetscape Plan, would not result in a substantial adverse change in the significance of historical resources. (Potentially Significant)

Parnassus Avenue Streetscape Plan

With the renovation of the Clinical Sciences and UC Hall buildings, and possibly new faculty housing near the Fifth and Parnassus Avenue intersection, there would be opportunities to begin implementing the proposed Parnassus Avenue Streetscape Plan. This plan calls for improvements that: make crossing the street safer and more convenient for pedestrians; reorganize and improve transit and UCSF shuttle operations; create more usable outdoor space; strengthen UCSF's identity; and enhance the public realm. Improvements would include new paving, street furniture, lighting and street trees, as well as sidewalk and crosswalk widening and more defined campus gateways at either end of the street as it passes through the campus site, incorporating the new entrance way to align with the future hospital addition. The improvements would occur in phases starting on the south side of Parnassus Avenue at the west end at Fifth Avenue, through the campus core and along the front of the Hospital Addition to Medical Center Way.

These improvements to Parnassus Avenue would have no direct or indirect impacts to historic resources facing this street, such as UC Hall and the Clinical Sciences Building, because as they would occur entirely within the existing right-of-way and would not otherwise affect these structures. The minor alteration to their setting resulting from wider crosswalks, lighting, and street trees, would not substantially alter their setting to such an extent that neither would remain eligible for listing in the NRHP or CRHR. As such, no significant impacts to historic resources would occur as a result of the Parnassus Avenue Streetscape Plan.

Utilities and Infrastructure Projects

The utilities and infrastructure projects include relocation and expansion of utility lines and replacement of medical gas and diesel fuel storage tanks in the vicinity of their current location near Medical Center Way, construction of a new retaining wall along Medical Center Way just south of the Dolby Regeneration Medicine Building, new and improved trails in the Reserve and renovation of Saunders Court.

The expansion of utility lines and replacement of medical gas and diesel fuel storage tanks at their current location near Medical Center Way would have no impact on historic architectural resources, as none are located at or near this area. Similarly, there are no historic architectural resources in or near the proposed location of the retaining wall across from the Regenerative Medicine Building. This area is currently a sloped, wooded, open space, and is part of the Reserve.

The potential impacts of adding three new trails and new switchbacks in the Reserve were reviewed as part of the Management Plan EIR for their potential to materially impair the character-defining features of Mount Sutro Cultural Landscape (UCSF, 2013). Based on this review, the trail system improvements would not demolish or materially alter in an adverse manner the physical characteristics of the Reserve that convey its historical significance and that justify its eligibility for the California Register of Historical Resources—the character-defining features consisting of a forest whose predominant species is eucalyptus, the trail system and the natural topographic characteristics. The evaluation and conclusion was made based on the following key components of the proposed Management Plan: (1) the trail system improvements would result in minimal vegetation removal; (2) the grading proposed would be limited to minor alterations in the topography in the vicinity of the trail improvements; (3) the existing trails and the three new proposed trails would remain unpaved and (4) the character-defining features, listed above, would all remain and would continue to convey the significance of the Reserve as part of the Mount Sutro Cultural Landscape. The proposed retaining wall behind the Dolby Regeneration Medicine building would similarly not result in adverse effects to the character-defining features of the Reserve. In summary, the proposed activities related to the trail system improvements and retaining wall would have a less-than-significant impact on the Reserve as a historical resource Landscape (UCSF, 2013).

The possibility for the inadvertent discovery of archaeological resources, paleontological resources or human remains, while low, cannot be discounted during construction of the proposed utilities, infrastructure and trail improvements. Implementation of **Mitigation Measures CUL-LRDP-3** through **CUL-LRDP-5** would reduce these potential impacts to a less than significant level.

Mitigation Measure: Implement Mitigation Measures CUL-LRDP-3 through CUL-LRDP-5

Significance after Mitigation: Less than Significant

6.4.4 References

Carey & Co., *University of San Francisco Parnassus Heights Campus, Historic Resource Evaluation Report*, September 2003.

Carey & Co., *UCSF Historic Resources Survey*, February 2011.

Denise Bradley, ASLA and Knapp & VerPlanck Preservation Architects, *Final Mount Sutro Open Space Reserve Cultural Landscape Evaluation Report*, October 3, 2011; revised January 10, 2013.

Holman & Associates, *Summary of Findings of the Archaeological Testing of the Proposed Handicapped Access Ramp at the Chancellor's Residence, Near the Rock Shelter Known as Ishi's Cave*, May 7, 1998.

Page & Turnbull, *UC Hospital, 533 Parnassus Avenue, University of California, San Francisco Parnassus Heights Campus San Francisco, California, Historic American Building Survey Documentation*, November 2005.

Page & Turnbull, *UCSF UC Hall & CSF Options Study, Preliminary Historic Preservation Scope, San Francisco, CA*, October 2011.

UCSF, *Mount. Sutro Management Project Draft Environmental Impact Report*, December 2013.

UCSF, UCSF History, www.ucsf.edu/about/history-1, accessed January 28, 2014.

6.5 Geology, Soils and Seismicity

This section considers the setting and geology, soils and seismicity impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Geology, Soils and Seismicity are contained in Section 4.5 of this EIR. The CEQA Significance Standards presented in Section 4.5.3 are used to evaluate the potential Geology, Soils and Seismicity impacts of all proposed 2014 LRDP activities.

Those impacts that are specific to the implementation of the 2014 LRDP at the Parnassus Heights campus site are discussed below.

6.5.1 Geology, Soils and Seismicity Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Landslides or erosion.** The proposed renovations of Moffitt Hospital, UC Hall and the Millberry Union towers would not result in an adverse effect from landslides or substantial soil erosion. Therefore, no additional analysis of this issue is required for these activities.

- **Expansive soils.** No activities would be located on expansive soils. Therefore, no additional analysis of this issue is required.

- **Soils and wastewater disposal.** No activities would result in the installation of septic tanks or alternative wastewater disposal systems. Therefore, no additional analysis of this issue is required.

- **Structural hazards.** The proposed renovations of Moffitt Hospital, UC Hall and the Millberry Union towers would be the only activities to have potential effects regarding exposure to structural hazards in an existing building. Accordingly, no analysis of this issue is required for any other activity.

6.5.2 Geology, Soils and Seismicity – Parnassus Heights Setting

The Parnassus Heights campus site, located at elevations ranging from 375 to 425 feet above mean sea level (excluding the Mount Sutro Reserve area), slopes steeply down to the north at gradients ranging from 25 to 45 percent. Subsurface materials at the Parnassus Heights campus site consist of up to 40 feet of sandy materials and unconsolidated, compact marine sand, silt, and clay (ranging in thickness from less than 1 foot to more than 70 feet) overlying 25 to 35 feet of Franciscan chert, shale, sandstone, and greenstone.

The greenstone is generally fractured, weathered and altered to clay minerals, making it prone to landsliding. The site is within a CGS Seismic Hazard Zone for landslides (CGS, 2003) and the

City of San Francisco's Special Geologic Study Area (San Francisco Planning Department, 1997) for potential ground failure hazards caused by landsliding.

The Parnassus Heights campus site is not located within or immediately adjacent to an active fault trace and as a result is considered to have a very low potential for fault rupture. Therefore, no additional analysis related to fault rupture hazards is required.

6.5.3 Geology, Soils and Seismicity – Parnassus Heights Impacts and Mitigation Measures

There are four types of proposals at the Parnassus Heights campus site under the 2014 LRDP:

- **Demolition:** Surge, Woods, Medical Research 4, Laboratory of Radiobiology, Proctor, Environmental Health & Safety, Koret Vision Research and Langley Porter Psychiatric Institute and support structures
- **Renovation:** UC Hall, Moffitt Hospital and Millberry Union towers
- **Construction:** New Hospital Addition, Proctor housing and housing at Fifth and Parnassus Avenues
- **Open Space and Utilities:** Parnassus Avenue Streetscape Plan, Saunders Court renovation, Mount Sutro Open Space Reserve trails, medical gas storage tanks, diesel fuel storage tanks and retaining wall

As discussed in Section 5.5, the general Geology, Soils and Seismicity impacts that could occur as a result of implementing the 2014 LRDP, are:

> **Impact GEO-LRDP-1: Implementation of the 2014 LRDP could result in adverse effects to people and structures resulting from geologic hazards.**
>
> **Impact GEO-LRDP-2: Implementation of the 2014 LRDP could result in substantial soil erosion or loss of topsoil.**

Demolition activities could include disturbance to improvements that would expose underlying soils. If not managed appropriately, these soils could be subject to the effects of wind and water erosion. However, all construction activities including demolition activities would be required to adhere to best management practices that include erosion control measures.

The proposals to renovate Moffitt Hospital, UC Hall and Millberry Union Towers would be required to adhere to all applicable seismic requirements as contained in the most recent version of the California Building Code including any applicable local code requirements.

With implementation of these building code requirements, potential impacts to Geology, Soils and Seismicity that would be caused by proposed renovations of the existing UC Hall, Millberry Union Towers, and Moffitt Hospital would be less than significant.

The campus site is located in a seismically active region that could experience at least one major earthquake (Richter magnitude (M) 6.7 or higher) over the next 30 years. Strong ground shaking could occur during a moderate to severe earthquake occurring on one of the active Bay Area faults near to the campus site. Construction of the New Hospital Addition would require design, site preparation, and foundation construction in accordance with the most current version of the California Building Code or local code requirements if more stringent as well as the seismic standards of AB 1953 and the Office of Statewide Health Planning and Development (OSHPD) requirements for hospital facilities. Geotechnical review of the foundation design of the new facility would be required to adhere to the guidelines presented in *California Geological Survey – Note 48, Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings.* Geotechnical review would also include evaluation of slope stability hazards as required by building code requirements. As a result, with implementation of these regulatory requirements any potential seismic impacts including liquefaction, landslides and other related

The proposed improvements to the streetscape of Parnassus Avenue would be relatively minor in terms of their seismic vulnerability, however they would nonetheless be subject to building code requirements, where applicable, as well as City of San Francisco Department of Public Works regulations that would ensure that proven geotechnical preparations and design would reduce potential seismic impacts to less than significant levels. In addition, implementation of required best management practices would reduce potential erosion impacts during construction.

Installation of the proposed changes to the utilities and infrastructure including the replacement of the underground storage tanks would include ground disturbing activities which could expose soils to the effects of wind and water erosion. However, all proposed construction activities would be required to adhere to best management practices that protect any exposed soils from erosion. Once construction is complete, all trenches and other areas of excavation would be covered by asphalt, concrete, or vegetated landscaping that would protect soils from the effects of erosion. In addition, utility connections to new and existing buildings are required to adhere to regulatory requirements that include measures such as flexible connections that minimize the potential for damage in the event of a substantial earthquake.

For these reasons, potential impacts to Geology, Soils and Seismicity that would be caused by the utilities and infrastructure proposals would be less than significant.

Mitigation: None required.

6.6 Greenhouse Gas Emissions

This section considers the setting and greenhouse gas emissions impacts of implementing the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of greenhouse gas emissions are contained in Section 4.6 of this EIR. The CEQA Significance Standards presented in Section 4.6.3 are used to evaluate the potential greenhouse gas emissions impacts of all proposed 2014 LRDP activities.

6.6.1 Greenhouse Gas Emissions Issues Adequately Addressed in the Initial Study

The Initial Study concluded that proposed activities at the Parnassus Heights campus site and their potential effects on greenhouse gas emissions would be evaluated in the EIR.

6.6.2 Greenhouse Gas Emissions – Parnassus Heights Setting

Greenhouse gas (GHG) emissions are generated at the Parnassus Heights campus site from a variety of sources. These include motor vehicle trips generated by uses on site, electrical and natural gas usage including natural gas usage to power turbines at the Parnassus Central Utility Plant (PCUP), water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation.

6.6.3 Greenhouse Gas Emissions – Parnassus Heights Impacts and Mitigation Measures

Impact GHG-PH-1: Development at the Parnassus Heights campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (Potentially Significant)

Construction activities would result in emissions of criteria pollutants from the use of heavy-duty construction equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the campus site.

Construction emissions were estimated using the CalEEMod emissions model assuming renovation of UC Hall and Millberry Union towers to residential uses, demolition of 8 existing buildings, construction of Proctor housing, construction of housing at Fifth and Parnassus avenues, construction of the New Hospital Addition and renovation of Moffitt Hospital.

Demolition and construction-related emissions from development at the Parnassus Heights campus site were calculated using the California Emissions Estimator Model (CalEEMod), assuming discrete construction windows in five to six year time frames. These windows are presented in **Table 6.0-3**, Proposal Construction Time Frames at Parnassus Heights, located in

Section 6.0.4 of this chapter. Implementation of the Parnassus Avenue Streetscape Plan and utility projects would require minimal construction equipment and would not be expected to contribute substantially to the emissions estimated below for building demolitions and renovations.

Construction-related emissions from development under the 2014 LRDP were calculated using CalEEMod, assuming completion by 2019, 2030 and 2035. Phasing lengths were based on CalEEMod default estimates which are based on square footage for medical office buildings and number of dwelling units for housing. It was assumed that there would be no off-road equipment involved in the renovations of UC Hall or Milberry Union towers and that air emissions from the renovation of these buildings would be generated solely by vendor trips bringing materials and construction worker trips. All model inputs and outputs are provided in Appendix E.

Table 6.6-1 presents the annual construction-related GHG emissions generated by development under the LRDP at the Parnassus Heights campus site for each of the development windows assumed. Estimated emissions are 191 metric tons of carbon dioxide equivalent greenhouse gases (CO_2e) in 2015-2019, 470 metric tons CO_2e in 2025-2030 and 202 metric tons CO_2e in 2031-3035[6]. As discussed earlier, BAAQMD has not established a quantitative threshold relative to construction-related emissions. In lieu of any proposed or adopted thresholds relative to construction-related emissions, these emissions are considered significant unless best management practices are implemented to reduce GHG emissions during construction, as feasible. Consequently, **Mitigation Measure GHG-LRDP-1** is identified to ensure implementation of best management practices during construction.

TABLE 6.6-1
ANNUAL CONSTRUCTION-RELATED GHG EMISSIONS
WITHOUT MITIGATION - PARNASSUS HEIGHTS CAMPUS SITE

Emission Source	Emissions (metric tons CO_2e / year)			
	CO_2	CH_4	N_2O	Total CO_2e
2015-2019	191	<1	<1	191
2025-2030	469	1	<1	470
2031-2035	202	<1	<1	202
Total	**–**	**–**	**–**	**863**

NOTE: Project CO_2 emissions estimates were made using CalEEMod v.2013.2.

Mitigation Measure: Implement Mitigation Measure GHG-LRDP-1

Significance after Mitigation: Less than Significant. Implementation of Mitigation Measure GHG-LRDP-1 would ensure that UCSF and its contractors employ feasible, effective measures to reduce GHG emissions during construction activities. This mitigation measure would reduce this potential impact to less than significant.

6 Emissions were calculated assuming construction was performed in the earliest part of the 5-yerar construction window to assume worst case emission factors for construction equipment and truck trips.

Impact GHG-PH-2: Development at the Parnassus Heights campus site under the 2014 LRDP would result in an increase in operational GHG emissions. (Less than Significant)

Area, Energy, and Indirect Sources

Operational GHG emissions associated with development under the 2014 LRDP would result from electrical and natural gas usage, water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the site is generated by the electrical supplier, PG&E. GHG emissions from natural gas are direct emissions resulting from on-site combustion for heating and other purposes. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste-related emissions are generated when the increased waste generated by the increase- in development is disposed in a landfill where it decompose, producing methane gas.[7]

GHG emissions from electrical usage, natural gas combustion, mobile transportation, water and wastewater conveyance, and solid waste were estimated using the CalEEMod model, and are presented in **Table 6.6-2**. A default GHG emissions factor for PG&E was adjusted to reflect future reductions envisioned by PG&E (PG&E, 2013) as well as to account for the portion of electrical power supplied by the Parnassus Central Utility Plant (PCUP). Based on the estimated on-campus power derived from the PCUP a composite GH emission factor of 605.78 pounds per megawatt hour was assumed for new (converted) residential uses. Electrical and natural gas emissions also assume compliance with UCSF policy to achieve a 20 percent energy reduction beyond Title 24 requirements for new (converted) residential uses. Energy and indirect sources from previous converted uses are subtracted from the total as are the GHG emissions from energy and indirect sources from demolished uses.

Energy use (electrical and natural gas) represents approximately 62% of estimated operational GHG emissions and solid waste generation represents approximately 33%. The relatively high percentage of emissions from energy is the result of the electrical intensity factor assumed by CalEEMod for hospital land uses (6.78 kWh/sf/yr for Title 24 electricity and 5.52 kWh/sf/yr for non-Title 24 electricity).

Mobile Emission Sources

One of the sources of operational emissions would be increased vehicle emissions from additional staff, patients, visitors and residents at the Parnassus Heights campus site. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the LRDP (Adavant, 2014). Development under the 2014 LRDP at the campus site would generate an estimated 405 additional daily vehicle trips. GHG emissions from motor vehicle sources were calculated using the CalEEMod. Table 6.6-2 presents the incremental mobile source GHG emissions associated with development under the 2014 LRDP at the campus site, which represent approximately 6% of the net new operational GHG emissions.

[7] CH_4 from decomposition of municipal solid waste deposited in landfills is counted as an anthropogenic (human-produced) GHG. (USEPA, 2006).

TABLE 6.6-2
ANNUAL OPERATIONAL GHG EMISSIONS
WITHOUT MITIGATION - PARNASSUS HEIGHTS CAMPUS SITE

Emission Source	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
New Development				
Area Sources	3.99	<1	<1	3.99
Energy Sources	3,176	<1	<1	3,186
Net New Mobile Sources	307	<1	<1	307
Solid Waste	706	41.7	<1	1,582
Water and Wastewater	107	1.56	<1	151
Subtotal	**4,301**	**43.8**	<1	**5,230**
Demolition Losses				
Area Sources	<1	<1	<1	<1
Energy Sources	-1,106	<1	<1	-1,111
Solid Waste	-474	-28	<1	-1,061
Water and Wastewater	-48	-57	<1	-82
Subtotal	**-1,628**	**-85**	<1	**-2,254**
Renovation Losses				
Area Sources	<1	<1	<1	<1
Energy Sources	-1,093	<1	<1	-1,094
Solid Waste	-184	-10.9		-413
Water and Wastewater	-180	-2.7	<1	-256
Subtotal	**-1,457**	**-13.6**	<1	**-1,763**
Total				**1,213**

NOTE: Columns may not total precisely due to rounding. Rows may not total precisely due to differences in global warming potential.

As shown in Table 6.6-2, the sum of both direct and indirect GHG emissions resulting from operations under the LRDP at the Parnassus Heights campus site would result in a net increase of 1,213 metric tons per year of CO_2e.[8] Applying a service population of 575 persons associated with development at the Parnassus Heights campus site (630 students and -55 new faculty and staff) results in emissions of approximately 2.1 metric tons per year of CO_2e/SP. This is below the service population threshold of 4.6 metric tons per year of CO_2e/SP. Consequently, GHG emissions associated with development under the 2014 LRDP at the Parnassus Heights campus site would be less than significant.

Mitigation: None required.

8 CO_2e in all calculations of Project impact include CO_2, CH_4 and N_2O.

6.6.4 References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report, CEQA Thresholds of Significance Air Quality Guidelines, October 2009. Available at www.baaqmd.gov.

BAAQMD, 2012. CEQA Air Quality Guidelines. Adopted June 2011, updated May 2012. Available at www.baaqmd.gov.

Pacific Gas & Electric Company (PG&E), Greenhouse Gas Emission Factors: Guidance for PG&E Customers, April, 2013.

6.7 Hazards and Hazardous Materials

This section considers the setting and hazards and hazardous materials impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Hazards and Hazardous Materials are contained in Section 4.7 of this EIR. The CEQA Significance Standards presented in Section 4.7.3 are used to evaluate the potential hazards and hazardous materials impacts of all proposed 2014 LRDP activities.

6.7.1 Hazards and Hazardous Materials Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Safety hazards from airport operations.** No activities would result in safety hazards resulting from proximity to public or private airports. Therefore, no additional analysis of this issue is required.
- **Wildland fires.** The proposed renovations of Moffitt Hospital, UC Hall and the Millberry Union towers would not result in exposure to wildland fires. Therefore, no additional analysis of this issue is required for these activities.

However, in light of some of the controversy surrounding the Mount Sutro Open Space Reserve and wildfire protection of this open space area, the potential impact from wildfires is discussed for the Parnassus Heights campus site below.

6.7.2 Hazards and Hazardous Materials – Parnassus Heights Setting

The Parnassus Heights campus site uses include, among others, the hospital, clinical offices, and medical research which all involve the transport, storage, handling, and disposal of hazardous materials. 2014 LRDP proposals include demolition of existing buildings which could contain hazardous building materials or hazardous material contamination, renovations to existing buildings which could also disturb hazardous building materials, constructing a replacement hospital, and changes to existing utilities and infrastructure for the purposes of expansion, updating, or code requirements.

6.7.3 Hazards and Hazardous Materials – Parnassus Heights Impacts and Mitigation Measures

Impact HAZ-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus site could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (Potentially Significant)

As part of the proposed plans to update and improve utilities and infrastructure throughout UCSF, the medical gas storage tanks at the Parnassus Heights campus site would be relocated and expanded. In addition, existing underground diesel fuel storage tanks in Medical Center Way and associated underground connection lines to Long Hospital require replacement to meet State and local codes. Current plans anticipate replacement of these tanks underground in the same location, or nearby. The five 30,000 gallon underground storage tanks are used to store diesel fuel in case of a major emergency such as an earthquake. In addition, since San Francisco is among the identified counties where ultramafic bedrock materials are present and have the potential for naturally occurring asbestos fibers, there is a potential that excavation work as part of the improvements could potentially encounter naturally occurring asbestos, if it is present. If present, groundbreaking activities could disturb these fibers causing them to be airborne and potentially adversely affect workers and the public. However, according to statewide mapping, the Parnassus Heights campus site appears to be located east of any mapped ultramafic bedrock units for the City of San Francisco (CDMG, 2000) or where reported asbestos occurrences have been mapped (USGS, 2011). According to a geotechnical report for the upland slope stability, the bedrock of Mount Sutro consists of Franciscan Complex bedrock (chert, greenstone and meta-sandstone and shale) (Rutherford & Cheneke, 2006).[9] Naturally occurring asbestos fibers are more associated with the mineral chrysotile commonly found in serpentinite. Regardless, considering that bedrock is relatively shallow at this campus, the **Mitigation Measure HAZ-LRDP-1** would ensure that disturbance of underlying materials would not expose workers or the public to naturally occurring asbestos, if present, for any proposed earthwork activities during construction.

The decommissioned Moffitt Hospital would be renovated and reused for outpatient, hospital support, instruction and office uses. Originally constructed in 1955, renovation efforts will include disturbing existing building materials that could potentially contain hazardous materials such as lead-based paint, asbestos containing materials, polychlorinated biphenyls (PCBs), and mercury. If not addressed appropriately, construction workers and the public could be exposed to adverse effects as a result of exposure to these hazardous building materials, if present. As described in Section 5, existing regulations are sufficient to reduce potential exposure health risks to less than significant levels. Once renovations are complete, there would be a potential increase in the use, storage, and disposal of hazardous materials including biohazardous wastes.

An addition to Long Hospital would be constructed in order to comply with the requirements of Senate Bill 1953 which address seismic safety of hospitals. The seven story addition would replace services currently offered at Moffitt Hospital and likely reduce the use, storage, and disposal of associated hazardous materials and biohazardous wastes relevant to the existing hospital services. However, all use of hazardous materials would continue to require adherence to regulatory requirements that address the storage, use, and disposal of hazardous materials in a manner that limit health risks and upset and accident conditions, as required to operate the existing hospital.

[9] Greenstone refers to any compact dark-green altered or low-grade metamorphosed basic igneous rock that owes to its green color. It is distinct from Serpentinite which is also green and can contain naturally occurring asbestos fibers.

Once proposed improvements are constructed, the use, storage, and disposal of hazardous materials including biohazardous waste and low-level radioactive waste would continue as part of operations and may expand with proposed new construction and renovation. Any expansion of hazardous materials use, storage, and disposal would continue under similar regulatory requirements as existing UCSF policies and hazardous materials management practices as largely documented within the Chemical Hygiene Plan. The Chemical Hygiene Plan is reviewed and updated on an annual basis and includes safety procedures, training requirements, personal protective equipment requirements, signage protocols, emergency response details, and disposal guidelines that is in accordance with all federal, state, local regulatory requirements.

Mitigation Measure: Implement Mitigation Measure HAZ-LRDP-1

Significance after Mitigation: Less than Significant

Impact HAZ-PH-2: Implementation of the 2014 LRDP at the Parnassus Heights campus site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools. (Less than Significant)

There are no schools located within a quarter mile of the Parnassus Heights campus site although Independence High School and Grattan Elementary are located approximately 0.3 and 0.4 miles, respectively, from the campus site. Regardless, the proposed plan would not include a substantive change in emissions or handling of hazardous materials and any expansion would occur under a continued practice of adherence to federal, state, local and UCSF policies and regulatory requirements.

Mitigation: None required.

Impact HAZ-PH-3: 2014 LRDP proposals at the Parnassus Heights campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public. (Less than Significant)

Two listings for the Parnassus Heights campus site are found on the Geotracker database maintained by the State Water Resources Control Board for releases of diesel found in subsurface soil (SWRCB, 2014a and SWRCB, 2014b). A release was documented for 315 Parnassus Avenue, an adjacent property to the Parnassus Heights campus site, and the case was subsequently closed in 1999 indicating that no further action was required. The other release (diesel fuel), on the UCSF campus at 50 Medical Center Way, was also closed in 2001. As such, despite being included on a hazardous materials sites list pursuant to Government Code Section 65962.5, there is no indication that any known threat to human health or the environment remains and the impact is considered less than significant.

Mitigation: None required.

Impact HAZ-PH-4: Implementation of the 2014 LRDP at the Parnassus Heights campus would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. (Less than Significant)

According to mapping for the City of San Francisco's Hazard Mitigation Plan, the Parnassus Heights campus site, which includes the Mount Sutro Open Space Reserve, is located in an area considered to be a high to very high potential for wildfire (URS, 2008). This determination is based on expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition and is initially based on an assigned fuel model combined with topography. In general, the susceptibility for high and very high wildfires dramatically increases in the late summer and early autumn as vegetation dries out, decreasing plant moisture content and increasing the ratio of dead fuel to living fuel (URS, 2008).

As discussed in the Project Description (Section 3.9.1.1), under a separate process that began prior to the 2014 LRDP, UCSF proposed management activities within the Reserve which were the subject of a Draft EIR published in January 2013. Subsequently, in light of the elevated fire danger resulting from California's current drought conditions, UCSF revised its proposal to focus on reducing the danger of wildfire. It retained a professional forester with a background in firefighting to identify fire hazard reduction measures for the Reserve area. Proposed hazard reduction measures, consistent with best management practices applied throughout California in forests located near urban areas were developed and are still in review at the time of preparation for this document although some urgent protection measures were completed in September 2013. However, the goal is to reduce the fire threat and thus the final result is likely to be a plan that includes hazard reduction from current conditions to ensure future protection from wildfire hazards. The final plan, at a minimum, will include fire hazard reduction measures as recommended by the forester. Recommendations include thinning of trees and understory in targeted areas near UCSF buildings, neighboring buildings, trails, and Medical Center Way. Any changes to the management activities analyzed in the January 2013 Draft EIR would be reviewed to determine what additional environmental analysis would be needed, if any, to comply with CEQA, separate from the 2014 LRDP and EIR.

2014 LRDP activities would not substantially increase the population at the Parnassus Heights campus site, and would not increase the number of structures within the Reserve. In addition, under a planning process separate from the 2014 LRDP, UCSF is seeking to minimize the wildfire danger within the Reserve and has already completed some of the work. Therefore, the potential impact from exposure of persons or structures to wildland fires attributable to the 2014 LRDP would be less than significant.

Mitigation: None required.

6.7.4 References

California Division of Mines and Geology (CDMG), *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos,* August, 2000.

State Water Resources Control Board (SWRCB), *Geotracter database*, http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607515600, accessed February 3, 2014a.

State Water Resources Control Board (SWRCB), *Geotracter database*, http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607501103, accessed February 3, 2014b.

Rutherford & Chekene, *Slope Stability Risk Assessment,* August 25, 2006.

United States Geological Survey (USGS), *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* Open File Report 2011-1188, 2011.

URS Corporation, *San Francisco Hazard Mitigation Plan, Wildfire Hazard Area,* September 2008.

6.8 Hydrology and Water Quality

This section considers the setting and hydrology and water quality impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential Hydrology and Water Quality effects are contained in Section 4.8 of this EIR. The CEQA Significance Standards presented in Section 4.8.3 are used to evaluate potential impacts to hydrology and water of all proposed 2014 LRDP activities.

Those impacts that are specific to the implementation of the 2014 LRDP at the Parnassus Heights campus site are discussed below.

6.8.1 Hydrology and Water Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Groundwater supplies.** No activities would result in substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. Therefore, no additional analysis of this issue is required.

- **Housing or other structures within flood hazard areas.** No activities would place housing or other structures within a flood hazard area. Therefore, no additional analysis of this issue is required.

- **Exposure to flooding.** No activities would result in exposure to flooding. Therefore, no additional analysis of this issue is required.

Finally, the Initial Study also concluded that the proposed renovations of Moffitt Hospital, UC Hall, and the Millberry Union towers would result in no impact or less-than-significant impacts regarding any hydrology or water quality issue. Therefore, no additional analysis is required for these building renovation activities.

6.8.2 Hydrology and Water Quality – Parnassus Heights Setting

The Parnassus Heights campus site is the oldest and largest of the UCSF campus sites, occupying about 107 acres of land at the base of Mount Sutro in the Inner Sunset mixed-use neighborhood. UCSF's facilities are concentrated at the north end of the campus site. The Mount Sutro Open Space Reserve (Reserve) occupies the central and southern portion of the campus site, up to 400 feet in elevation above Parnassus Avenue. The Reserve occupies 61 acres of ridgeline and hillslopes adjoining the drainage divide that forms the boundary between the San Francisco Bay and Pacific Ocean watersheds in the City of San Francisco. Accordingly, stormwater runoff from the campus site ultimately drains to storm drain inlets in the headwaters of either the Channel Basin or the Sunset Basin and is conveyed east or west, respectively, in the City's Combined

Sewer System (CSS) to either the Southeast or Oceanside water treatment plants, where it is treated prior to being discharged to Central San Francisco Bay or the Pacific Ocean. Though mean annual rainfall for north central San Francisco (Richmond District gage) is 20.0 inches (Western Regional Climate Center, www.wrcc.dri.edu), local orographic influences in the uplands of Mount Sutro elevate this total to 21-22 inches in the vicinity of the Parnassus Heights campus site (NOAA, 1971).

6.8.3 Hydrology and Water Quality – Parnassus Heights Impacts and Mitigation Measures

There are four types of proposals at the Parnassus Heights campus site under the 2014 LRDP:

- **Demolition:** Surge, Woods, Medical Research 4, Laboratory of Radiobiology, Proctor, Environmental Health & Safety, Koret Vision Research and Langley Porter Psychiatric Institute and support structures
- **Renovation:** UC Hall, Moffitt Hospital, and Millberry Union towers
- **Construction:** New Hospital Addition, Proctor housing and housing at Fifth and Parnassus avenues
- **Circulation, Open Space, and Utilities/Infrastructure:** Parnassus Avenue Streetscape Plan, Saunders Court renovation, Mount Sutro Open Space Reserve trails, medical gas storage tanks, diesel fuel storage tanks and retaining wall.

LRDP proposals at the Parnassus Heights campus site (including on-site staging) would include demolition, excavation, grading, and construction activities that would require temporary disturbance of surface soils and removal of existing pavement and sub-surface structures (if present). These activities would expose soil to water runoff as well as entrainment of sediment in the runoff. If dewatering would be necessary during construction, the water would likely contain suspended sediments and would require settling before being discharged to the CSS. Sediment in runoff and deposits of soil and related debris from haul truck tires on local streets could increase the amount of sediment entering the storm drains, which could potentially clog drain inlets and reduce the flow capacity of the storm drains. The accumulation of this material could potentially result in increased localized ponding or flooding, particularly after large storm events.

The use of construction equipment as well as the delivery, handling, and storage of construction materials and waste could contaminate stormwater that could negatively impact water quality. Potential contaminants include, but are not limited to (CSW/Stuber-Stroeh, 2011):

- Petroleum hydrocarbons and metals from stockpiled soils excavated from the site
- Fuel from storage drums
- Diesel from refueling trucks
- Oils and grease from miscellaneous heavy equipment

- Sewage from portable sanitary facilities
- Sediment from construction generated waste–piles of concrete, rock and debris
- Sediment from rock crushing activities
- Hazardous materials storage-hydraulic oil, motor oil, and lubricating fluid
- Spills and releases of hydrocarbons and related pollutants from routine light maintenance activities such as fluid topping off, and welding and repairing belts and gears of heavy equipment

Polluted stormwater runoff could violate water quality standards and/or waste discharge requirements established in the NPDES General Permit for Construction and the NPDES discharge permits for the Southeast and Oceanside Treatment Plants.

In accordance with the Construction General Stormwater Permit, UCSF would be required to prepare and implement a SWPPP for each LRDP construction project to minimize water quality impacts during construction activities on the campus site. The SWPPPs will be consistent with previous SWPPPs that have been developed for past development of the Parnassus Heights campus site (e.g. management of the Mount Sutro Open Space Reserve).

The SWPPPs will identify pollutant sources within the construction area and recommend site-specific BMPs regarding control of sediments in runoff and storage and use of hazardous materials to prevent discharge of pollutants into stormwater. Likely BMPs are listed in Section 5.1.8.

In addition, each 2014 LRDP construction project will need to obtain a water quality certification from the RWQCB for the construction activities, which would also require implementation of BMPs and specific measures for the protection of water quality during construction.

Proposed development and redevelopment at the Parnassus Heights campus site would not significantly change the volumes of site stormwater runoff, nor how this runoff is directed or routed through the campus site to the CSS. The proportion of impermeable surfaces at the campus site will not significantly change as a result of 2014 LRDP activities. Measures to prevent and minimize erosion and its potential effects on storm drain siltation and water quality would be included in the SWPPP.

Implementation of SWPPPs and associated BMPs would reduce erosion and water quality impacts during demolition and construction activities to less than significant.

The Parnassus Heights campus site is at an elevation of approximately +400 ft NAVD88[10], well above the zone of inundation by a 500-year seiche or tsunami (approximately +18.5 ft NAVD88, UCSF 2013), so there is no risk of flooding by seiche or tsunami.

[10] North American Vertical Datum of 1988

Much of Mount Sutro is located in a landslide hazard area that could result in mudflows. The landslide potential is addressed in Sections 5.5 and 6.5.

The regulatory requirements discussed in Sections 4.8 and 5.8 limit the potential adverse effects of these impacts to less than significant. For these reasons, potential impacts to Hydrology and Water Quality that would be caused by the 2014 LRDP proposals at the Parnassus Heights campus site would be less than significant.

Mitigation: None required.

6.8.4 References

CSW/Stuber-Stroeh Engineering Group, Inc., *Storm Water Pollution Prevention Plan*, UCSF Medical Center at Mission Bay, San Francisco, California, August, 2011.

National Oceanic and Atmospheric Administration (NOAA), Climate of San Francisco, http://www.wrh.noaa.gov/mtr/sfd_sjc_climate/sfd/SFD_CLIMATE3.php and *Mean Annual Precipitation and Precipitation Depth-Duration-Frequency Data for the San Francisco Bay Region, California*. US Geological Survey Open-File Report, S.E. Rantz, 1971.

UCSF, *Mount Sutro Management Project Draft EIR*, 2013.

6.9 Land Use and Planning

This section considers the setting and land use and planning impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Land Use and Planning are contained in Section 4.9 of this EIR. The CEQA Significance Standards presented in Section 4.9.3 are used to evaluate the potential land use impacts of all proposed 2014 LRDP activities.

6.9.1 Land Use and Planning Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Physically divide an established community.** No activities would physically divide an established community. Therefore, no additional analysis of this issue is required.
- **Habitat conservation plan.** No activities would result in a conflict with any applicable habitat conservation plan. Therefore, no additional analysis of this issue is required.
- **Compatibility with local land uses or zoning.** The proposed demolition of 8 existing buildings and utilities/infrastructure projects would not conflict with local land uses or zoning. Therefore, no additional analysis of this issue is required.

6.9.2 Land Use and Planning – Parnassus Heights Setting

The Parnassus Heights campus site occupies about 107 acres of land at the base of Mount Sutro in the Inner Sunset mixed-use neighborhood. The campus site is bounded by Carl and Irving Streets to the north, Fifth Avenue to the west and Clarendon Avenue, Christopher Drive and Crestmont Drive to the south. UCSF's facilities are concentrated at the north end of the campus site where Moffitt and Long Hospitals, the four schools, clinics, research, auxiliary services, housing, parking and other support uses are located. The 61-acre Mount Sutro Open Space Reserve (Reserve) occupies the central and southern portion of the campus site, rising up to 400 feet in elevation above Parnassus Avenue.

Moderate- and medium-density residential areas, predominantly with two to three dwelling units per lot, are located immediately north and west of the campus site. A neighborhood commercial district is located to the west along Irving and Judah Streets and 9th Avenue. Golden Gate Park is approximately one-quarter mile to the north. Primarily single-family dwellings in the Cole Valley/Ashbury Heights neighborhoods are adjacent to the east, and neighborhood commercial uses are located at Cole and Carl Streets. There is also some moderate-high density residential to the southwest, on Fifth and Sixth Avenues.

6.9.2.1 UCSF Functional Zones

UCSF's existing functional zones at the Parnassus Heights campus site are depicted in Chapter 3, *Project Description*, Figure 3-7. The Instruction and Research, Clinical Care and Campus

Community zones are located at the core of the campus site along Parnassus Avenue. Housing is located along Third and Fifth Avenues, as well as in the Aldea student housing complex off Clarendon Avenue (surrounded by the Reserve).

6.9.2.2 City of San Francisco Zoning

The Parnassus Heights campus site is primarily located in the City's P (Public) Zoning District. P Districts refer to land owned by a governmental agency that is in public use, including open space. Housing located along Third and Fifth Avenues is designated as Residential House District, Two-Family (RH-2). Residential house districts are intended to recognize, protect, conserve and enhance residential areas characterized by limited scale in terms of building width and height. Structures in the RH-2 District usually do not exceed 25 feet in width or 40 feet in height.

The developed areas of the campus site are located within the following Height and Bulk Districts: 25-X, 40-X, 65-D, 80-D, 130-D, and 220-F. The locations with an "X" designation permit all floors of structures to cover the entire building footprint. The "D" designation limits floor plans above 40 feet to a maximum plan length of 110 feet and a maximum diagonal plan dimension of 140 feet. The "F" designation limits floor plans above 80 feet to a maximum plan length of 110 feet and a maximum diagonal plan dimension of 140 feet.

6.9.2.3 1976 Regents' Resolution

As discussed in Section 3.8.1.1, the 1976 Regents' Resolution adopted a limit on the amount of built space of 3.55 million gsf at the Parnassus Heights campus site (with some housing excluded), commonly referred to as the "space ceiling", within the newly designated campus site boundaries. Currently, Parnassus Heights contains approximately 3.85 million gsf of space, approximately 295,000 gsf or 8.3% above the space ceiling.

The 1976 Regents' Resolution also recognized the principle of limiting the average daily population at Parnassus Heights to be substantially in accordance with the level projected in the 1976 LRDP (13,400 persons). The 1996 LRDP established a new goal to limit the average daily population to 16,000 persons. Currently, the average daily population at Parnassus Heights is estimated at 17,950 persons.

6.9.3 Land Use and Planning – Parnassus Heights Impacts and Mitigation Measures

Impact LU-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

Upon adoption by the Regents, the proposed 2014 LRDP will replace the 1996 LRDP, as amended, and become the applicable campus land use plan for UCSF. Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local

land use regulation. The University is the only agency with land use jurisdiction over programs and projects proposed at UCSF campus sites by the 2014 LRDP. Therefore, all proposed activities that would be in general conformity with the 2014 LRDP would have no significant land use impacts. However, UCSF considers the land use policies and zoning regulations of the City when analyzing potential land use impacts under CEQA. The 2014 LRDP is not expected to conflict with City plans and policies adopted for the purpose of avoiding or mitigating an environmental effect. Consistency with the City's height and bulk districts is discussed below under Impacts LU-PH-2 and LU-PH-3.

The 2014 LRDP proposed functional zones are generally consistent with the existing zones on the Parnassus Heights campus site. Under the 2014 LRDP, the Housing zone would be enlarged to capture UC Hall and the Proctor site, which are proposed for housing, from the Instruction and Research zone (which would be reclassified as Research). The Kirkham Child Development Center would be reclassified from Housing to Support. The Environmental Health and Safety Annex and the pump house would be newly classified as Support. The sites of the Environmental Health and Safety, Surge and Woods buildings proposed for demolition would be reclassified as Open Space and would become part of the Reserve, except for the areas containing existing parking. The former Campus Community and Logistical Support functional zones would be combined into a single Support zone, with a new, separate Parking zone for structured parking. The functional zone changes proposed by the 2014 LRDP do not present land use conflicts with adjacent existing land uses on the campus site. Compatibility between adjacent existing and proposed functional zones was taken into consideration in developing the proposed zones in the 2014 LRDP. Existing land use patterns reflect campus development guided by the planning principles embodied in the previous LRDPs. Therefore, implementation of the 2014 LRDP would have a less-than-significant impact regarding consistency with land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect.

Mitigation: None required.

Consistency with Regents' Resolution

The 2014 LRDP UCSF is proposing that the Regents update the 1976 Regents' Resolution by modifying the way space and population are monitored at the Parnassus Heights campus site. The proposed *Regent's Resolution Regarding the Parnassus Heights Campus Site* is included in Appendix C. The 2014 LRDP proposes to exclude all residential space from the space ceiling calculation, regardless of where it is located. Aldea Housing and University House would be removed from the space ceiling calculation under this proposal. All non-residential space would continue to be included in the space ceiling calculation. The exclusion of all residential space from the space ceiling calculation, plus all of the physical proposals for the Parnassus Heights campus site described in this EIR, would decrease the amount of space subject to the space ceiling to approximately 3.61 million gsf by 2035, or approximately 60,000 gsf (1.7%) above the 3.55 million gsf space ceiling limit. Although the space ceiling would still be exceeded in 2035, the existing overage of 8.3% would be substantially reduced under the proposed update to the 1976 Regents' Resolution. The proposed amendment to the Regents' Resolution also would tie average daily population projections for the Parnassus Heights campus site to the then-current LRDP EIR, as updated from time to time and approved by the Regents. The 2014 LRDP EIR projects an average daily population for the Parnassus Heights campus site of approximately 18,600 persons in 2035, an

increase of approximately 650 persons. The 2014 LRDP would be consistent with the space and population commitments for the Parnassus Heights campus site upon adoption by the Regents of the proposed update to the 1976 Regents' Resolution and the impact would be less than significant.

Mitigation: None required.

Impact LU-PH-2: The proposed New Hospital Addition at the Parnassus Heights campus site would be compatible with adjacent land uses. (Less than Significant)

The proposed New Hospital Addition would occupy the area currently occupied by the seven-story Langley Porter Psychiatric Institute building. This area is classified as Clinical Care under the existing functional zone and this use would remain unchanged with construction of the new hospital. The site for the New Hospital Addition is largely located within the City's 65-D Height and Bulk District. This district restricts building heights to 65 feet and limits floor plans above 40 feet to a maximum plan length of 110 feet and a maximum diagonal plan dimension of 140 feet. The proposed hospital addition would be seven stories or about 110 feet in height, excluding rooftop mechanical equipment which could add up to an additional 17 feet. The building is proposed to be set back from Parnassus Avenue with a landscaped strip. The upper portion of the building would also step back from the lower portion to minimize shading on Parnassus Avenue.

Although the building has not yet been designed, the proposed height would exceed the City's height limit for this site. As noted above, the University is exempt from local zoning. However, UCSF strives to adhere to City zoning codes to the extent practicable in accordance with 2014 LRDP Objective 1: Respond to the City and Community Context. The 2014 LRDP also includes an objective (Objective 3) to ensure that its facilities are seismically safe. In order to meet the SB 1953 mandate at Parnassus Heights, inpatient uses currently at Moffitt Hospital must be relocated prior to 2030, necessitating the construction of the New Hospital Addition. Therefore, to the extent feasible, UCSF would design the New Hospital Addition to avoid or minimize the effects of this conflict with the City's Planning Code, but it would not be possible to replace clinical uses currently in Moffitt Hospital with a new hospital that complies with the City's 65-D Height and Bulk District Regulations. In addition, the New Hospital Addition would replace an existing building on the Parnassus Heights campus site in an area already built out with other similar UCSF facilities, such as Moffitt Hospital and Long Hospital. The proposed building would be compatible with adjacent land uses and would not create a significant land use impact.

Mitigation: None required.

Impact LU-PH-3: The proposed renovations of Moffitt Hospital, UC Hall, Millberry Union towers, and the Faculty Alumni House at the Parnassus Heights campus site would be compatible with existing City regulations. (Less than Significant)

The decommissioned Moffitt Hospital would be renovated and reused for outpatient, hospital support and office uses. The use of the site for Clinical purposes would remain unchanged from its existing classification. The proposed retrofit of the Faculty Alumni House also would not result in changes in its existing classification as Housing. Proposed renovations would be limited to the interior and no conflicts would result with local zoning regulations. No impact would occur.

UCSF proposes to retain, seismically retrofit, renovate and reuse UC Hall by 2019. In Phase 1, the top three floors would be used as housing and the three full floors below the housing would be used as faculty offices. Retail, meeting, housing office and storage space are proposed on the ground floor, along with a loading dock at the west end of the building. In Phase 2, the three floors with faculty offices would be converted to housing after Moffitt Hospital is decommissioned and renovated and becomes available for other uses, including the offices displaced from these three floors of UC Hall. The Millberry Union towers are currently used as office space. UCSF would convert the upper levels to student housing under the 2014 LRDP. Both of these areas are currently zoned as Public by the City. The LRDP proposes to change the functional zone of UC Hall to Housing while Millberry Union would change from Campus Community to Support. Although these would be considered new uses, they would not be inconsistent with the Public zoning designation as UCSF would continue to own the facilities for public use and the impact would be less than significant.

Mitigation: None required.

6.10 Noise

This section considers the setting and noise impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Noise are contained in Section 4.10 of this EIR. The CEQA Significance Standards presented in Section 4.10.3 are used to evaluate the potential noise impacts of all proposed 2014 LRDP activities.

6.10.1 Noise Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Permanent ambient noise.** The demolition of existing buildings would not result in a substantial permanent increase in ambient noise levels. Therefore, no additional analysis of this issue is required for these activities.

- **Airport noise.** No activities would be located within the vicinity of a public or private airport. Therefore, no additional analysis of this issue is required.

- **Average daily noise levels.** The demolition of existing buildings would not contribute to increases in average daily noise levels. Therefore, no additional analysis of this issue is required for these activities.

6.10.2 Noise – Parnassus Heights Setting

6.10.2.1 Existing Noise Environment

Long-term environmental noise in urbanized areas is primarily dependent on vehicle traffic volumes and the mix of vehicle types. The existing ambient noise environment within the Parnassus Heights campus site is dominated by vehicular traffic on Parnassus Avenue as well as stationary equipment noise on the eastern end of the campus site.

The San Francisco Department of Public Health (DPH) has mapped transportation noise throughout the City and County of San Francisco, based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority travel demand model.[11] DPH maps indicate the areas subject to noise levels over 60 dBA (L_{dn}) and the range of L_{dn} noise levels that occur on every street in San Francisco. The portions of these maps that cover the Parnassus Heights campus site indicate that areas along Parnassus Avenue are generally subject to noise levels between 65 and 60 dBA (L_{dn}).

[11] San Francisco Department of Public Health (DPH), San Francisco City-wide Noise Map, August 2006, Available online at http://www.sfdph.org/dph/files/EHSdocs/ehsPublsdocs/Noise/noisemap2.pdf Accessed April 30, 2013.

Ambient Noise Measurements

Ambient long-term (24-hour) and short-term (10-minute) noise measurement data were collected in January and March of 2014 to characterize noise conditions in the campus site area and its environs. Noise measurement locations are shown in **Figure 6.10-1**. To characterize ambient noise in the campus site area, short-term measurement data were compiled for three locations where residential land uses exist near primary LRDP activity sites, as shown in **Table 6.10-1**. Long-term noise data were collected adjacent to residential land uses on the southern campus boundary as well as outside UC Hall where converted residential land use is proposed; see **Table 6.10-2**.

TABLE 6.10-1
SHORT-TERM AMBIENT NOISE LEVEL DATA IN THE PARANSSUS HEIGHTS AREA

Measurement Location	Time	Noise Levels in dBA	
		Hourly L_{eq}	L_{max}
PS-ST1 Parnassus Avenue at 5th Avenue: Nearby residential receptor to UC Hall	5:08 pm	63.2	79.1
PS-ST2 Kirkham Street at 5th Avenue. Nearby residential receptor to truck route.	4:54 pm	59.1	72.5
PS-ST-3 Hillway Avenue at Parnassus Avenue. Nearby residential receptor to New Hospital Addition Site	5:25 pm	61.2	74.7

NOTE: See Figure 5.10-1 for noise measurement locations. L_{eq} represents the constant sound level; L_{max} is the maximum noise level.

SOURCE: Environmental Science Associates, 2014.

TABLE 6.10-2
LONG-TERM AMBIENT NOISE LEVEL DATA IN THE PARANSSUS HEIGHTS AREA

Measurement Location	Day-Night Noise level (DNL)	Noise Levels in dBA	
		Daytime hourly average, L_{eq}	Nighttime hourly average, L_{eq}
PS-LT1 UCSF Parnassus Property line at Edgewood Avenue residences	64	58	58
PS-LT-2 UC Hall Balcony. Proposed residential use location.	61	58	53

NOTE: See Figure 5.10-1 for noise measurement locations.

SOURCE: Environmental Science Associates, 2014.

Long-term monitoring location PS-LT1 is located at the top of the ridge at the eastern property line of the campus site. The noise environment at this location is dominated by mechanical equipment behind Moffitt Hospital. Noise data indicate that these sources are consistent throughout the daytime and nighttime hours. Long-term monitoring location PS-LT2 is located at UC Hall. The noise environment at this location is dominated by Parnassus Avenue vehicle traffic, which is relatively high during daytime hours but is much reduced after 10:00 p.m.

SOURCE: ESA

UCSF Long Range Development Plan Environmental Impact Report

Figure 6.10-1

Noise Measurements Locations – Parnassus Heights

Noise levels at both long term monitoring locations were marginally in excess of 60 DNL for proposed residential land uses with noise levels in excess of 60 DNL, the San Francisco General Plan suggests that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

6.10.2.2 Sensitive Receptors

Sensitive receptors for noise are generally considered to include nursing homes, senior citizen centers, schools, churches, libraries, and residences. Land uses in the campus site area are described in detail in Section 6.9, *Land Use*. The sensitive receptors nearest to the Parnassus Heights campus site are residential dwellings on Edgewood Avenue east of the campus, residential dwellings on Fifth Avenue and Kirkham Street west of the campus site and residential dwellings on Hillway Avenue and Irving Street north of the campus site.

6.10.3 Noise – Parnassus Heights Impacts and Mitigation Measures

Impact NOI-PH-1: Demolition activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in a temporary increase in ambient noise levels. (Potentially Significant)

As noted in the Regional Setting section, the hours that construction activity noise can occur is described in Section 2908 of the Police Code, known as the San Francisco Noise Ordinance. Although UCSF is not subject to the noise ordinance, it strives to be consistent with it to the extent feasible. Section 2908 prohibits any person, between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day, from erecting, constructing, demolishing, excavating for, altering, or repairing any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line.

Demolition of each of the eight buildings proposed under the LRDP would require the use of heavy duty off-road construction equipment as well as haul trucks to remove debris. Construction activity noise levels at and near each of these demolition sites would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. **Table 6.10-3** shows typical noise levels produced by various types of construction equipment. Equipment typically involved with large-scale demolition would include excavators, dozers, loaders and trucks for off-hauling demolition debris. Additionally, a hoe-ram (a back-hoe fitted with a ramming bit) may be used to break up large concrete structures.

The demolition of the Proctor building would occur within 60 feet of an occupied residential building to the south while demolition of the Medical Research 4 (MR4) building would occur within 100 feet of another residential building of the same development. However these demolitions would occur in different years, with MR4 slated for demolition over approximately two months in 2015 and the Proctor building slated for demolition at the far end of the LRDP horizon (estimated at 2030).

TABLE 6.10-3
NOISE LEVELS FOR DEMOLITIONS AT THE PARNASSUS HEIGHTS CAMPUS SITE

Building	Estimated Demolition Schedule	Distance to Nearest Sensitive Receptor (feet)	Shielding Assumption	Estimated Noise Level at Receptor (dBA, Leq)	Noise Increase over Existing Daytime Conditions (dBA, Leq)
Laboratory of Radiobiology	July 2015 to February 2016	550 (5th Avenue residence)	Yes (-5 dBA)	55.6	-7.6
Medical Research 4	February 2015 to April 2015	100 (Kirkham Heights apartments)	None	75.4	**16.3**
Surge	May 2016 to June 2016	180 (Edgewood Avenue residences)	None	70.3	**12.3**
Woods	April 2017 to May 2017	200 (Edgewood Avenue residences)	None	69.4	**11.4**
Environmental Health and Safety	2030 -2031	550 (Kirkham Heights apartments)	None	60.6	1.5
LPPI	2030 -2031	250 (Edgewood Avenue residences)	None	71.5	**10.3**
Proctor	2030 -2031	60 (Kirkham Heights apartments)	None	79.8	**20.7**
Koret Vision Research	2033 -2034	280 (UCSF Child Care)	None	70.5	**11.4**

Table 6.10-3 presents a rough estimate of the sequence of proposed building demolitions and the proximity of sensitive receptor to each demolition site. As can be seen from the table, most demolition would occur sequentially with only demolition of Environmental Health and Safety and LPPI potentially occurring concurrently. Table 6.10-3 also presents an estimate of noise levels during demolition. These estimated noise levels assume simultaneous operation of an excavator, a loader and a bulldozer as calculated using the Roadway Construction Noise Model of the FHWA. Estimated noise levels for demolition of the more substantial structures of LPPI and Koret Vision Research also assume operation of a hoe-ram to break concrete.

Trucks off-hauling demolition debris would also generate noise. The number of daily truck trips would depend on the pace of demolition. The CalEEMod air quality model estimates that based on the square feet of demolition involved at LPPI and Proctor up to 38 daily truck trips could occur per day (19 truck loads per day). Different truck routes would be used for these two projects each of which would add about two additional truck trips per hour to local roadways. The Traffic Noise Prediction Model of the FHWA indicates that addition of two trucks per hour along Kirkham Avenue would increase the existing hourly noise level by 2.6 dBA, which would not be a significant contribution to existing roadside noise levels.

The data in Table 6.10-3 indicate that noise levels from proposed demolition would exceed 10 dBA over existing levels (a perceived doubling of loudness) during peak demolition activities at MR4, Surge, Woods, LPPI, and Proctor. Receptors near these buildings would also experience noise levels approaching or exceeding a speech-interference threshold of 70 dBA and result in a temporary but significant construction noise impact from demolition activities. Implementation of

Mitigation Measure NOI-LRDP-1 will reduce noise levels associated with demolition activities by 5 to 10 dBA. However it is likely that intermittent hoe-ram operations to break up concrete structures could result in noise levels at sensitive receptors in excess of 70 dBA during one to two weeks of the demolition of Proctor, even after mitigation. Consequently, this impact, although temporary, would be significant and unavoidable.

Mitigation Measure: Implement Mitigation Measure NOI-LRDP-1

Significance after Mitigation: Significant and Unavoidable

Impact NOI-PH-2: Construction activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (Potentially Significant)

The renovations of UC Hall, Millberry Union towers, and Moffitt Hospital are assumed to be predominantly interior renovations and would not involve operation of off-road construction equipment other than a small crane or man lift that would not be expected to substantially alter the existing noise environments. Since these renovation activities would be largely conducted within the existing buildings they would not result in significant construction noise impact outside of the buildings.

Implementation of the Parnassus Avenue Streetscape Plan, open space, and utility and proposals may also involve limited operations of some types of construction equipment, such as a backhoe. However the limited scope and duration of operation involved with these activities would not be expected to substantially alter the existing noise environments of Parnassus Avenue or Medical Center Way.

Construction of the New Hospital Addition would require the use of heavy-duty off-road construction equipment and is anticipated to occur between 2025 and 2030. Construction activity noise levels at and near the hospital site would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Construction activities associated with the New Hospital Addition would involve excavation, grading, and earth movement and, potentially, pile driving. **Table 6.10-4** shows typical noise levels produced by various types of construction equipment typically involved with large-scale construction projects, would occur at a reference distance of 50 feet from the source and also as would occur at a distance of 200 feet, which is the approximate distance from the New Hospital Addition site to the nearest residences on Hillway Avenue and Edgewood Avenue.

The sensitive residential receptors nearest the New Hospital Addition site experience existing daytime noise levels of 58 dBA. Temporary noise from standard construction equipment could exceed these existing noise levels by as much as 19 dBA. If an impact pile driver were required, it could result in an increase of up to 31 dBA over existing noise levels, resulting in a temporary but significant noise increase over existing conditions over a period of pile installation. Consequently, mitigation measures to reduce construction noise are identified.

TABLE 6.10-4
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 Feet)	Noise Level (dBA, Leq at 200 Feet)
Dump truck	76	64
Portable air compressor	78	66
Concrete mixer (truck)	79	67
Crane	81	69
Excavator	81	69
Dozer	82	70
Paver	77	65
Generator	81	69
Backhoe	78	66
Pile driver	101	89
Auger Drill Rig	84	72

SOURCE: FHWA, 2006.

Mitigation Measure: Implement Mitigation Measure NOI-LRDP-1 and NOI-LRDP-2.

Significance After Mitigation: Significant and Unavoidable. Mitigation Measures LRDP-NOI-1 and 2 would reduce the severity of noise generated by construction and pile-driving activities and reduce the potential annoyance to nearby residents and others who could be disturbed by pile-driving to the extent feasible. If piles can be installed though drilling and cast in place measures then these mitigation measures would result in a less than significant impact.

However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration (up to about six weeks in total), even after mitigation the noise level would likely exceed ambient noise levels by 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.

Impact NOI-PH-3: Demolition and construction activities proposed under the 2014 LRDP at the Parnassus Heights campus site could generate ground-borne vibration. (Less than Significant)

The types of construction and demolition-related activities associated with propagation of ground-borne vibration include pile driving, use of hoe-rams for demolishing large concrete structures and foundations, and caisson drilling.

Demolitions

The only demolition activity associated with propagation of ground-borne vibration would be use of hoe-rams for demolishing large concrete structures or foundations. Operation of a hoe ram can result in peak particle velocities (PPV) of up to 0.089 inches per second (in/sec) at a distance of 25 feet (FTA, 2006). The Caltrans threshold of architectural damage for conventional sensitive

structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings.

The nearest existing off-campus structure is approximately 60 feet away from the site of the proposed demolition at LPPI. At this distance, vibration from hoe-ram operation would be expected to be reduced to 0.03 inches per second. Therefore, vibration from hoe-ram operation would not exceed the criterion published by Caltrans of 0.25 in/sec for the protection of fragile older buildings, or the 0.5 in/sec PPV criterion for newer buildings at any off campus receptors. Vibration levels from Hoe ram operations would be less than 0.04 inches per second at the nearest residential receptors and would be less than distinctly perceptible. Consequently, the LRDP demolitions would have a less-than-significant impact to ground-borne vibration.

Renovations

No renovation activity would propagate ground-borne vibration.

New Construction

Of the construction equipment likely to be used, pile driving has the potential to result in the highest levels of ground-borne vibration. Pile driving, if required, could take one or more months, and would occur during daytime hours, consistent with the City's Police Code.

Pile driving can result in peak particle velocities (PPV) of up to 1.5 inches per second (in/sec) at a distance of 25 feet (FTA, 2006), but typically results in an average of about 0.644 PPV at that distance. The Caltrans threshold of architectural damage for conventional sensitive structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings.

The nearest existing off-campus structure is approximately 200 feet away from the site of the proposed New Hospital Addition, where pile driving may occur. At this distance, vibration from pile driving would be expected to be reduced to 0.03 inches per second. Therefore, vibration from pile driving would not exceed the criterion published by Caltrans of 0.25 in/sec for the protection of fragile older buildings, or the 0.5 in/sec PPV criterion for newer buildings at any off campus receptors. Vibration levels would be substantially less (below 0.01 inches per second) at the nearest residential receptors, and would not generally be perceptible.

Consequently, the demolition or construction activities would have a less-than-significant impact with regard to ground-borne vibration.

Mitigation: None required.

Impact NOI-PH-4: Operational noise generated by development under the 2014 LRDP at the Parnassus Heights campus site could cause a long-term increase in ambient noise levels in the campus vicinity. (Less than Significant)

Demolitions

No long-term noise sources and no noise increases would be associated with the demolitions.

Renovations

Repurposing of UC Hall and Millberry Union towers may result in subtle increases in roadway traffic but even when the entirety of the LRDP is considered increased roadway noise is less than significant. No new mechanical or other stationary noise sources would be introduced by these renovations. Consequently, operational noise increases due to these LRDP renovations would be less than significant.

New Construction

Long-term noise sources associated with operation of the renovated UC Hall, Millberry Union towers, and Moffitt Hospital, and the New Hospital Addition would primarily consist of marginal increases in roadway traffic resulting from new and repurposed land use. There will likely be some new mechanical equipment (e.g. heating ventilation and air conditioning) associated with operation of the new hospital. The potential location of such equipment in not known given that there is, as yet, no design for the New Hospital Addition building but such equipment would be operated in such a manner as to conform to the extent feasible to the requirements of the City of San Francisco noise ordinance. Additionally new mechanical equipment would effectively replace older and potentially noisier HVAC equipment currently existing at LPPI that would be demolished as a project-level element hence resulting in potentially beneficial impacts.

UCSF has addressed stationary source noise from existing equipment at the Parnassus Heights campus site on an ongoing basis throughout the past 20 years. These efforts have included monitoring and mitigation identification for noise generated throughout the campus site (Smith, Fause McDonald, 1998); installing new, quieter equipment as older, noisier equipment is phased out; as well as follow-up noise monitoring conducted in 2010 demonstrating operational equipment noise consistent with the updated portion of the City's Noise Ordinance (Salter, 2010). UCSF continues its efforts to minimize equipment noise generated on campus. These efforts demonstrate that although UCSF is not subject to the City's noise ordinance, it strives to be consistent with it to the extent feasible. Consequently, new construction is anticipated to have a less than significant impact with respect to new stationary noise sources.

With respect to noise from increased roadway traffic, increased traffic would primarily be on the local roadway network surrounding the campus site, including Parnassus Avenue and Fifth Avenue based on turning movement volumes calculated for Section 6.14, *Transportation and Traffic*. A project would be considered to generate a significant impact if it resulted in a permanent increase in ambient noise levels greater than 3 dBA in the project vicinity above levels existing without the project for areas already impacted by noise.

Noise levels were determined for this analysis using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model and the turning movements in the traffic section for Existing (2014), Existing Plus LRDP, and Cumulative Plus LRDP conditions as determined in Section 6.14, *Transportation and Traffic*. Peak hour intersection turning data from the traffic study were analyzed to evaluate increases and resulting traffic-generated noise increases on roadway links most affected by LRDP -related traffic. The roadway segments analyzed and the results of the noise increases resulting from modeling are shown in **Table 6.10-5**, below.

TABLE 6.10-5
PEAK-HOUR TRAFFIC NOISE LEVELS IN THE VICINITY OF THE PARNASSUS HEIGHTS CAMPUS SITE

Roadway Segment[a,b]	(A) Existing	(B) Existing Plus Project	(B-A) Difference between Existing Plus Project and Existing[c]	(D) Cumulative Plus Project (2040)	(D-A) Difference between Cumulative Plus Project and Existing
Parnassus Avenue between Stanyan Street and Hillpoint Avenue	62.7	62.7	<0.1	63.2	0.5
Parnassus Avenue between 3rd Avenue and 5th Avenue	63.4	63.5	0.1	64.0	0.6
4th Avenue between Parnassus Avenue and Irving Street	56.1	56.2	0.1	57.2	1.1
5th Avenue between Parnassus Avenue and Irving Street	53.2	53.2	<0.1	53.4	0.2
5th Avenue between Parnassus Avenue and Kirkham Street	57.3	57.4	0.1	58.6	1.3
Kirkham Street between 5th Avenue and 6th Avenue	58.3	58.4	0.1	59.8	1.4

[a] Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model.
[b] The analysis considered the vehicle mix based on – cars 95 percent, medium trucks four percent, and heavy trucks one percent on Parnassus Avenue based on observed city and para-transit bus activity. Traffic speeds for all vehicle classes were set at 25 mph for all vehicle classes.

SOURCE: ESA, 2014.

As shown in Table 6.10-5, the increase in traffic noise in the vicinity of the Parnassus Heights campus site from the Existing Plus LRDP traffic scenario compared to the Existing traffic scenario would increase peak hour noise levels by less than 3 dBA at all roadway segments. This is also true when the cumulative plus project condition is compared to existing conditions. Overall, traffic noise increases associated with the 2014 LRDP at all analyzed roadway segments in the vicinity of the Parnassus Heights campus site would be less than significant impacts.

Mitigation: None required.

Impact NOI-PH-5: Operations under the 2014 LRDP at the Parnassus Heights campus site would result in exposure of persons (new residents) to noise levels in excess of standards established in the general plan. (Less than Significant)

The LRDP would result in renovating and repurposing UC Hall and Millberry Union towers to residential uses. Long-term noise monitoring conducted at UC Hall indicates existing exterior noise level of 61 DNL. This noise level is within the "conditionally acceptable" noise exposure category as defined by the City of San Francisco General Plan Noise Element (greater than 60 DNL). New residences would also be constructed at Fifth and Parnassus Avenues and at the Proctor site. Noise levels at these locations are represented by the short-term measurements in Table 6.10-1 and range from 59 to 63 dBA which can reasonably be assumed to represent DNL levels in an environment where vehicle traffic is the predominant source.

A conditionally acceptable noise exposure is defined as one in which new construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Both UC Hall and Millberry Union towers have air-handling systems and windows are generally kept closed. Additionally, Section 1207 of the California Building Code (Title 24 of the California Code of Regulations) establishes material requirements in terms of sound transmission class (STC) [12] of 50 for all common interior walls and floor/ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public areas. This requirement would be sufficient to achieve the additional 1 dBA of sound reduction necessary to achieve the noise exposure goals of the San Francisco General Plan. Consequently, the 2014 LRDP would have a less than significant impact with regard to exposure of new residential receptors to noise levels in excess of acceptable noise exposure standards.

Mitigation: None required.

6.10.4 References

Federal Highway Administration (FHWA) Roadway Noise Construction Model, 2006.

Salter, Charles M. Associates, UCSF Parnassus Acoustical Study, July 21, 2010.

Smith, Fause, MacDonald Inc., *University of California, San Francisco Parnassus Campus, Campus Noise Abatement Study Phase II, Assessment of Existing Noise Levels, Modeling, and Mitigation Measures, Southeast Campus Edge*, February 24, 1998.

[12] The STC is used as a measure of a materials ability to reduce sound. The STC is equal to the number of decibels a sound is reduced as it passes through a material.

6.11 Population and Housing

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Population and Housing are contained in Section 4.11 of this EIR. The CEQA Significance Standards presented in Section 4.11.3 are used to evaluate the potential population and housing impacts of all proposed 2014 LRDP activities.

The 2014 LRDP would result in population growth in San Francisco or the wider Bay Area through increased employment and student enrollment. The 2014 LRDP would accommodate an increase in employment and students at all campus sites from the current approximately 30,840 to approximately 42,270 by 2035. This anticipated population increase could result in an increased demand for housing in the Bay Area. This overall increase and its potential effect on housing were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures.*

The 2014 LRDP development proposals would result in a small change in daily population at this campus site. The projected increase in population at the Parnassus Heights campus site would be approximately 600 people by 2035. Approximately 388 beds in 329 residential units are proposed under the 2014 LRDP for the campus site. Two-hundred fifty-two new units are proposed by converting existing building space (UC Hall and Millberry Union towers) and 77 new units are proposed for the Fifth and Parnassus avenues and Proctor sites. The direct and indirect physical environmental effects that result from these changes are fully considered in each of the appropriate topical sections of this Chapter.

6.12 Public Services

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Public Services are contained in Section 4.12 of this EIR. The CEQA Significance Standards presented in Section 4.12.3 are used to evaluate the potential public services impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all sites, including patients and visitors, was approximately 39,420. At LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Parnassus Heights campus site would be approximately 600 people by 2035.

This anticipated population increase could result in an increased demand for public services in San Francisco, including fire protection, law enforcement, and public education. This overall increase and its potential effect on public services were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. The anticipated small increase in population at this campus site under the LRDP would not cause substantial increased demand for public services specific to this campus site, and all impacts are found to be less than significant.

6.13 Recreation

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Recreation are contained in Section 4.13 of this EIR. The CEQA Significance Standards presented in Section 4.13.3 are used to evaluate the potential recreation impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all sites, including patients and visitors, was approximately 39,420. At LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Parnassus Heights campus site would be approximately 600 people by 2035.

This anticipated population increase could result in an increased use of recreational facilities on and near UCSF campus sites. This overall increase and its potential effect on recreational facilities, as well as effects resulting from 2014 LRDP proposals, were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. The anticipated small increase in population at this campus site under the LRDP would not cause substantial increased demand for recreation facilities specific to this campus site, and all impacts are found to be less than significant.

6.14 Transportation and Traffic

This section considers the transportation and traffic setting and impacts of implementation of the 2014 LRDP at the Parnassus Heights campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Transportation and Traffic are in Section 4.14 of this EIR. The CEQA Significance Standards presented in Section 4.14.3 are used to evaluate the potential transportation and traffic impacts of all proposed 2014 LRDP activities.

6.14.1 Transportation and Traffic Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Parnassus Heights campus site, the Initial Study concluded that:

- **Air traffic patterns.** No activities would result in a change in air traffic patterns. Therefore, no additional analysis of this issue is required.

6.14.2 Transportation and Traffic – Parnassus Heights Setting

A more-detailed description of current transportation and traffic characteristics in the Parnassus Heights campus site area is provided in Appendix G, the Transportation Impact Study (TIS) for the UCSF 2014 LRDP.

6.14.2.1 Roadway Facilities

The network of regional roadways that serve the Parnassus Heights campus site is described in Section 4.14.

With Golden Gate Park to the north and Mount Sutro to the south, the roadways used to access the Parnassus Heights campus site are primarily via east-west corridors – Parnassus Avenue-Judah Street, Irving Street-Carl Street, Lincoln Avenue, and Kirkham Street. Primary north-south routes to the Parnassus Heights campus site include Stanyan Street, Arguello Boulevard, Seventh Avenue, and Second Avenue through Fifth Avenue. The primary vehicular entrances to parking and loading areas for the campus site are located at the intersections of Second Avenue/Irving Street, Arguello Boulevard/Carl Street-Irving Street, along Parnassus Avenue, and at Fifth Avenue/Kirkham Street. Local access to the Parnassus Heights campus site is provided by an urban street grid network. Key local roadways through the campus site are discussed below.

The local road network serving the Parnassus Heights campus site consists primarily of two-lane roadways with on-street parking provided on both sides of the streets in most areas, as follows:

- **Kirkham Street** runs between the UCSF Parnassus Heights campus site to La Playa Street in the west. East of Fifth Avenue, Kirkham Street becomes Koret Way (a campus site street) and provides access to the School of Dentistry, Laboratory of Radiology, Medical Research 4, and School of Nursing buildings. West of Sixth Avenue, Kirkham Street has Class II bicycle lanes in both directions.

- **Carl Street/Irving Street** extends from Clayton Street to 48th Avenue. The City classifies this roadway as a Primary Transit Street (transit-oriented) east of Ninth Avenue. In the vicinity of the Parnassus Heights campus site, the N Judah light rail line operates along the roadway between Cole Street and Ninth Avenue. The street provides exclusive turn pockets for vehicles to enter the UCSF parking garage at the Second Avenue/Irving Street intersection.

- **Hugo Street** runs between Arguello Boulevard and Seventh Avenue. Between Seventh Avenue and Third Avenue, Hugo Street is designated as a Class III bicycle route.

- **Willard Street** runs from Fredrick Street to Woodland Avenue.

- **Medical Center Way**, a campus site street, runs from Parnassus Avenue to Johnstone Drive through the Mount Sutro Open Space Reserve.

- **Hillway Avenue** runs between Parnassus Avenue and Carl Street.

- **Arguello Boulevard** runs from Kezar Drive to Carl Street.

- **Second Avenue** runs from Lincoln Way to Irving Street, with the southern end of the street providing direct access to a large public parking deck on the Parnassus Heights campus site.

- **Third Avenue** runs between Lincoln Way and Parnassus Avenue. Between Hugo Street and Lincoln Way, Third Avenue is a designated Class III bicycle route. All northbound traffic on Third Avenue must turn right at Lincoln Way.

- **Fourth Avenue** runs between Lincoln Way and Parnassus Avenue. All northbound traffic on Fourth Avenue must turn right at Lincoln Way.

- **Fifth Avenue** runs between Lincoln Way and its terminus south of Kirkham Street. Fifth Avenue provides full access (i.e., northbound traffic can turn left and right) at Lincoln Way.

- **Sixth Avenue** runs between Lincoln Way and its terminus south of Kirkham Street. Sixth Avenue is designated as a bicycle route between Hugo Street and Kirkham Street and has a southbound Class II bicycle lane and a northbound Class III bicycle route (with shared-lane markings [“sharrows”]).

- **Eighth Avenue** runs between Lincoln Way and its southern terminus at Pacheco Street. The 66 Quintara bus line operates along Eighth Avenue between Parnassus Avenue and Lawton Street in the northbound direction only.

The roadway exceptions to the two-lane cross section are as follows:

- **Parnassus Avenue/Judah Street** is a two- to three-lane roadway that extends from Clayton Street to 48th Avenue. The City classifies this roadway as a Secondary Transit Street east of Ninth Avenue (in the vicinity of the Parnassus Heights campus site) and a Primary Transit Street (Transit-Oriented) west of Ninth Avenue. The 6 Parnassus and 43 Masonic bus lines operate on this street. A two-way left-turn lane extends from Stanyan Street to the Moffitt-Long Hospital. Access to the Millberry Union Garage is across from the Moffitt/Long Hospital Drop-off/Pick-up area; two signalized crosswalks facilitate heavy pedestrian volumes across the street in the same location. Parnassus Avenue/Judah Street is also designated as a Class III bicycle route east of Sixth Avenue. Class III bicycle routes employ “sharrows”.

- **Lincoln Way/Frederick Street** is a two- to four-lane Secondary Transit Street that forms the southern boundary of Golden Gate Park. At Third Avenue, Lincoln Way merges with Kezar Drive and is a main thoroughfare between the Sunset District and downtown. The 71/71L Haight-Noriega bus line uses the entirety of Lincoln Way and Frederick Street to travel to Stanyan Street, while the 16X Noriega Express and NX Express use Lincoln Way to merge onto Kezar Drive in order to get to the Fell-Oak streets one-way couplet.

- **Kezar Drive** is a two- to four-lane east-west Major Arterial Street north of Parnassus Avenue that provides the major connection from the Parnassus Heights campus site to the Fell-Oak Street one-way couplet. Kezar Drive has a Class I bicycle path facility. The 16X Noriega Express and NX Express bus lines use Kezar Drive to travel from Lincoln Way to Oak Street.

- **Stanyan Street** is a Secondary Transit Street from Geary Boulevard to Belgrave Avenue. It forms the eastern boundary of Golden Gate Park (excluding the Panhandle section of the park). In the vicinity of the Parnassus Heights campus site (north of Frederick Street), it is a four-lane roadway; south of Fredrick, it is a two-lane street. The 71/71L Haight-Noriega bus line operates along Stanyan Street north of Frederick Street.

- **Seventh Avenue** is a Secondary Transit Street, which provides access to Golden Gate Park and becomes Laguna Honda Boulevard to the south of the Parnassus Heights campus site. It has one northbound and two southbound lanes in the vicinity of the campus site. Seventh Avenue is designated as a Class III bicycle facility between Lincoln Way and Judah Street and as a Class II bicycle lane south of Judah Street. The 36 Teresita, 43 Masonic, and 44 O'Shaughnessy bus lines operate on Seventh Avenue south of Lawton Street.

- **Ninth Avenue** is a Secondary Transit Street, which provides access to Golden Gate Park and the Sunset District. It has one northbound and two southbound lanes in the vicinity of the Parnassus Heights campus site. The N Judah light rail line operates on Ninth Avenue between Irving and Judah streets. The 43 Masonic and 66 Quintara bus lines operate along Ninth Avenue between Judah Street and Lawton Street, while the 44 O'Shaughnessy line runs between Golden Gate Park and Lawton Street.

6.14.2.2 Parnassus Avenue Traffic Volumes

On the basis of traffic counts conducted on Parnassus Avenue between Fifth Avenue and Medical Center Way in 2007 and 2013, current traffic volumes on Parnassus Avenue are similar to those in 2007. The total daily traffic volume on Parnassus Avenue is relatively low by comparison to other two-lane streets in San Francisco. For example, Polk Street carries approximately 16,000 vehicles per day compared to approximately 10,000 vehicles per day on Parnassus Avenue. Although both Polk Street serves more commercial retail uses, compared to the more institutional and residential uses along Parnassus Avenue, this comparison shows that a two-lane street with frequent transit service is capable of serving much more traffic than currently exists on Parnassus Avenue, and that an oft-described "busy feel" on Parnassus is due more to other factors, such as double-parking and high pedestrian volumes, than to heavy traffic volumes.

6.14.2.3 Intersection Operating Conditions

Intersection operating conditions at 23 intersections were evaluated during the weekday peak hours of the AM (7:00 AM-9:00 AM) and PM (4:00 PM-6:00 PM) peak periods. Intersections

usually form the critical capacity constraints on roadways. Therefore, most transportation analyses examine intersection operations as a measure of overall roadway conditions.

The operating characteristics of intersections are evaluated using the concept of Level of Service ("LOS"). LOS is a qualitative description of driver comfort and convenience. Intersection levels of service range from LOS A, which indicates free flow or excellent vehicle flow conditions with short delays, to LOS F, which indicates congested or overloaded vehicle flow conditions with extremely long delays. In San Francisco, LOS A through D is considered acceptable, and LOS E and LOS F are considered unsatisfactory service levels. The intersections were evaluated using the 2000 Highway Capacity Manual (HCM) methodology. Tables summarizing the relationship between average delay per vehicle and LOS for signalized and unsignalized intersections according to the 2000 HCM method can be found in the appendices of the TIS for the 2014 LRDP (Appendix G).

For signalized intersections, this methodology determines the capacity for each lane group approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average delay and LOS is presented for the intersection. For unsignalized intersections, operations are defined by the average control delay per vehicle (in seconds per vehicle) for each stop-controlled movement or movement that must yield the right-of-way, and the LOS is determined by the worst (highest average delay) approach. Generally, the delay ranges for each LOS are lower than for signalized intersections because drivers expect less delay at unsignalized intersections.

As shown in **Table 6.14-1**, 21 of the 23 study intersections operate at an acceptable level of service, which is LOS D or better, during the AM peak hour and 20 study intersections operate at an acceptable LOS during the PM peak hour. The following intersections operate unacceptably during the AM or PM peak hours:

- Oak Street – Fell Street – Kezar Drive and Stanyan Street (Intersection #1) operates at LOS E during the PM peak hour due to the traffic volumes on northbound and southbound Stanyan Street.

- Lincoln Way and Ninth Avenue (Intersection #2) operates at LOS E during the PM peak hour due to the conflicting traffic volumes on westbound Lincoln Way and southbound Ninth Avenue.

- Lincoln Way and Fourth Avenue Intersection (#4) operates at LOS F during the AM peak hour due to high conflicting traffic volumes on eastbound Lincoln Way.

- Judah Street-Parnassus Avenue and Fifth Avenue (Intersection #15) operates at LOS E during the PM peak hour due to a combination of the traffic volumes on the stop-controlled approaches of Fifth Avenue and the relative lack of gaps in traffic on Judah Street-Parnassus Avenue.

- Kirkham Street and Seventh Avenue (Intersection #21) operates at LOS E during the AM peak hour due to the relatively high conflicting traffic volumes on northbound Seventh Avenue and eastbound Kirkham Street.

TABLE 6.14-1
EXISTING PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – PARNASSUS HEIGHTS CAMPUS SITE

Intersection	Traffic Control[a]	Peak Hour	Delay (seconds)[b]	LOS[c]
1. Oak Street-Fell Street-Kezar Drive / Stanyan Street	Signal	AM PM	45 **58**	D **E**
2. Lincoln Way / Ninth Avenue	Signal	AM PM	39 **65**	D **E**
3. Lincoln Way / Seventh Avenue	Signal	AM PM	32 39	C D
4. Lincoln Way / Fourth Avenue	SSS	AM PM	**>50** 23	**F** C
5. Lincoln Way-Kezar Drive / Third Avenue	SSS	AM PM	24 29	C D
6. Fredrick Street / Stanyan Street	Signal	AM PM	26 24	C C
7. Irving Street / Ninth Avenue	Signal	AM PM	17 20	B B
8. Irving Street / Seventh Avenue	Signal	AM PM	24 25	C C
9. Irving Street / Fourth Avenue	AWS	AM PM	11 (12) 11 (12)	B (B) B (B)
10. Irving Street / Second Avenue	AWS	AM PM	10 (11) 11 (12)	B (B) B (B)
11. Irving Street / Arguello Boulevard	SSS	AM PM	15 27	B D
12. Judah Street / Ninth Avenue	Signal	AM PM	15 16	B B
13. Judah Street / Seventh Avenue	Signal	AM PM	32 25	C C
14. Judah Street / Sixth Avenue	AWS	AM PM	17 (18) 17 (22)	C (C) C (C)
15. Judah Street-Parnassus Avenue / Fifth Avenue	SSS	AM PM	22 **42**	C **E**
16. Parnassus Avenue / Fourth Avenue	AWS	AM PM	15 (18) 19 (23)	B (C) C (C)
17. Parnassus Avenue / Third Avenue	SSS	AM PM	17 20	C C
18. Parnassus Avenue / Hillway Avenue	SSS	AM PM	13 15	B C
19. Parnassus Avenue / Hill Point Avenue	SSS	AM PM	17 16	C C
20. Parnassus Avenue / Stanyan Street	Signal	AM PM	41 29	D C
21. Kirkham Street / Seventh Avenue	Signal	AM PM	**70** 30	**E** C
22. Kirkham Street / Sixth Avenue	AWS	AM PM	13 (16) 13 (14)	B (C) B (B)
23. Kirkham Street / Fifth Avenue	AWS	AM PM	<10 (<10) <10 (<10)	A (A) A (A)

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled

[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersections, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach (indicated in parentheses).

[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersections, LOS is based on the worst approach, which for AWS is indicated in parentheses.

[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

6.14.2.4 Transit Network

The Parnassus Heights campus site is well-served by public transit, both local and regional. Regional service is described in Section 4.14. Local service is provided by the San Francisco Municipal Railway (Muni) bus and light rail lines, which provide transit service to the campus site and throughout San Francisco and can be used to access regional transit operators. Service to and from the East Bay is provided by Bay Area Rapid Transit (BART), Alameda-Contra Costa Transit (AC Transit) and ferries; service to and from the North Bay is provided by Golden Gate Transit buses and ferries; service to and from the Peninsula and South Bay is provided by SamTrans, BART, and Caltrain. As described in Section 4.14, UCSF supplements Muni transit service with its own shuttle system that provides direct connections to UCSF-operated or affiliated facilities throughout San Francisco. In many cases, these shuttles provide a direct transit alternative between two campus sites that would otherwise require a transfer between two or more Muni routes. Based on the 2013 UCSF Transportation Commute Survey, approximately 24% of those traveling to the Parnassus Heights campus site use public transit, while another 12% rely on UCSF shuttles to get to and from the campus site.

Local Transit

San Francisco Muni. San Francisco Municipal Railway (Muni) provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car and electric streetcar lines. Muni operates nine bus and rail lines in the Parnassus Heights campus site area (see the TIS in Appendix G for details about these transit lines).The Transit Effectiveness Project (TEP) serves as both a thorough review of and repositioning of San Francisco's public transit system, initiated by SFMTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. TEP recommendations include new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The TEP recommendations were unanimously endorsed by the SFMTA Board of Directors in October 2008, for environmental impact review. The initial TEP recommendations were revised based on public feedback on the draft TEP environmental impact report (TEP EIR). The TEP EIR was certified on March 27, 2014, and the SFMTA Board of Directors approved most of the Service Improvements and portions of the Transit Travel Time Reduction Proposals on March 28, 2014.[13] The TEP project will be implemented based on funding and resource availability. The TEP Implementation Strategy anticipates that many of the improvements will be implemented sometime between Fiscal Year 2014 and Fiscal Year 2019, subject to funding sources and resource availability.[14] The changes proposed by the TEP for routes near the Parnassus Heights campus site are described in the TIS (Appendix G).

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13 San Francisco Planning Department. 2014. TEP Final EIR, March 27, 2014, Available online at http://tepeir.sfplanning.org. Accessed April 3, 2014. Case No. 2011.0558E. The document and supporting information may also be viewed at the Planning Department, 1650 Mission Street, Suite 400, San Francisco in case file 2011.0558E.

14 San Francisco Municipal Transportation Agency. 2014. TEP Implementation Workbook, March 5, 2014, Available online at: http://www.sfmta.com/sites/default/files/projects/TEP%20Implementation%20Plan%20-%20Section%201%20%282%29_1.pdf. Accessed June 27, 2014.

UCSF Shuttle System

Shuttles to and from the Parnassus Heights campus site (Gold, Blue, Black, Tan, Purple, Grey, Lime, Pink, VA-Parnassus, and Bronze) stop at shuttle zones along the north side of Parnassus Avenue, between Third Avenue and the Library, and on the south side of Parnassus Avenue, just west of UC Hall, outside the Dental Clinic plaza at Fourth Avenue, and also east of Langley Porter Psychiatric Institute. These stops are designated by UCSF Transportation Services and reviewed/approved by SFMTA. A more-detailed description of the UCSF shuttle system serving the Parnassus Heights campus site area is provided in Appendix G (TIS for the 2014 LRDP).

6.14.2.5 Pedestrian Circulation

Walking to and from the Parnassus Heights campus site is a common travel mode option for many UCSF employees and students. Based on the 2013 UCSF Transportation Commute Survey, about 11% of those traveling there walk to and from the campus site.

Pedestrian facilities include sidewalks, crosswalks, curb ramps, and pedestrian signals. Within the campus site, sidewalks exist on both sides of the street in most locations, generally 12 feet to 15 feet wide. In some areas on the campus site, sidewalk widths exceed 20 feet. All study intersections provide painted crosswalks and directional curb ramps. High-visibility yellow continental stripe crosswalks exist on Judah Street at the intersections of Sixth and Seventh avenues. Two additional high-visibility continental stripe crosswalks exist on Parnassus Avenue adjacent to the Moffitt/Long Hospital Drop-off/Pick-up area, where there are two signalized pedestrian crosswalks with countdown timers. These signalized crossings accommodate the large number of pedestrians crossing from one side of Parnassus Avenue to the other. Most other crosswalks in the area are standard crosswalks; San Francisco typically only uses the standard crosswalk at signalized intersections, continental crosswalks at high-visibility locations (e.g., near schools), and ladder crosswalks.

Pedestrian counts were conducted at each crosswalk in the Parnassus Heights campus site between 7:00 AM and 7:00 PM in 2007 and 2013. A comparison of those counts showed that the 2013 pedestrian volumes are essentially unchanged from those in 2007. Some slight variations in crossing volumes at individual crosswalks was observed, and because there has not been any substantial development in the area since 2007, most changes in pedestrian activity likely would be related to typical seasonal or daily fluctuations or attributable to adjustments in the UCSF shuttle system routing. However, counts at the pedestrian crossing in front of the Medical Building 1 (ACC) at Irving Street increased 60% between 2007 and 2013. This may be an indication of increased light rail ridership.

During the same time period in which the two Parnassus Avenue signalized crosswalks accommodate approximately 18,500 crossings, the Parnassus Avenue roadway carries about 8,500 vehicles. Thus, on average, there are over two times more pedestrians crossing Parnassus Avenue than vehicles traveling along it. The pedestrian activity on Parnassus Avenue in the campus site area (Third Avenue to Hillway Avenue) is more than double the pedestrian activity occurring at Judah Street and Fifth Avenue to the west.

Field observations at the campus site indicate that the locations of the two signalized crosswalks across Parnassus Avenue in the campus site core area are not aligned with many pedestrians' desired travel paths. A number of pedestrians exiting the UCSF Medical Center walk around Moffitt Circle and walk directly across Parnassus Avenue into the entrance to the Millberry Union, rather than walk east or west to one of the two signalized crosswalks.

6.14.2.6 Bicycle Circulation

Despite the hilly topography at the Parnassus Heights campus site, bicycling is a viable and common travel mode. UCSF has identified bicycling as an effective tool in reducing congestion and pollution, promoting good health, and creating a livable environment. Based on the 2013 UCSF Transportation Commute Survey, approximately 5% of those traveling to and from the campus site do so by bike. In addition, approximately 3% of trips made by UCSF Parnassus employees and students to off campus, non-UCSF locations throughout the day are made by bike. This is consistent with the bicycling mode share throughout San Francisco.

Bicycle facilities in San Francisco consist of bicycle paths, separated bicycle lanes, bicycle lanes, and bicycle routes. Bicycle Paths (Class I) provide a completely separated right-of-way for the exclusive shared use of cyclists and pedestrians. These facilities are off-street and minimize cross-flow traffic, but they can be adjacent to an existing roadway. Separated Bicycle Lanes (Class II) provide a striped, marked and signed bicycle lane buffered from vehicle traffic. These facilities are located on roadways and require a minimum of four to five feet of space for exclusive bicycle traffic. Bicycle Lanes (Class II) provide a striped, marked and signed lane for bicycle travel. These one-way facilities are located on roadways and reserve a minimum of four to five feet of space for exclusive bicycle traffic. Bicycle Routes (Class III) provide a shared travel lane marked and signed for shared use with motor vehicle traffic. These facilities may or may not be marked with "sharrows" to emphasize that the roadway space is shared. Bicycle facilities located within or near the Parnassus Heights campus site are described above as part of the description of local roadways.

Bicycle counts were collected along Parnassus Avenue, near Moffitt Circle, and Irving Street, near Second Avenue between 7:00 AM and 7:00 PM on a typical weekday in 2007 and again on Parnassus Avenue in 2013 during the same time period. In 2007, Irving Street/Carl Street, despite the fact that it has no official bicycle route designation, carried approximately four times as many bicycles as Parnassus Avenue, which is a designated bicycle route. In 2007, higher volumes along Irving Street and Carl Street were likely the result of the street being relatively flat compared to Parnassus Avenue or the result of the UCSF bicycle cage being located on the ground level of the Millberry Union Garage, which has an entrance at Second Avenue/Irving Street. In 2013, bicycle counts along Parnassus Avenue had increase four-fold when compared to 2007, paralleling the uptick in bicycle use throughout the city that has been reported by the SFMTA and seen anecdotally on key corridors, such as Market Street.

UCSF provides free, secured bicycle parking inside a bicycle cage in the Millberry Union Garage. There are bike racks at five additional locations throughout the campus site: from east to west, they are at the Langley Porter Psychiatric Institute, Medical Building 1, the Kalmanovitz Library, the Clinical Science building and the Dental Clinics building. There are also on-street bicycle racks

located along Parnassus Avenue; however, most bicyclists are encouraged (by signs) to park in the designated bicycle parking areas in the campus site buildings. During site visits conducted in 2013, all of the designated bicycle parking areas were at near capacity, and numerous bikes were found to be parking on the street at parking meters and sign poles, indicating a high demand for bicycle parking facilities. Through the on-going monitoring of bicycle facilities, UCSF has since responded to user feedback about crowded bicycle parking facilities by doubling the capacity of the Millberry Union Garage bicycle cage and installing a new bike fix-it station.

6.14.2.7 Loading Conditions

The Parnassus Heights campus site has both service vehicle and passenger loading. There are 10 service vehicle loading facilities (with a total of 17 truck loading spaces) serving the existing uses on the campus site. This excludes the 30 on-street service vehicle spaces along Parnassus Avenue. Passenger loading takes place in the Moffitt Loop, located on Parnassus Avenue in front of Moffitt Hospital, or in passenger loading zones located along Parnassus Avenue.

The loading area located on Parnassus Avenue in front of the Medical Building 1 serves passenger vehicles, service vehicles, emergency vehicles, and is the drop-off location for valet service. This area in particular can become congested throughout the day, sometimes leading to vehicles blocking a lane of traffic as passenger and service loading occurs. Although all the loading areas are used regularly for building deliveries, the Central Receiving Area and Long Hospital are typically the busiest locations throughout the day.

6.14.2.8 Parking Conditions

On-Street Parking

Parking is available on most streets near the Parnassus Heights campus site, primarily with parallel parking on both sides of the street. However, due to the steep topography of the area, parking spaces perpendicular to the direction of travel are provided on some streets, on one side of the street only. A variety of parking regulations apply, with the majority of the spaces subject to Residential Parking Permit (Zone "J") restrictions (two-hour parking, except for residents, Mondays through Friday from 8:00 AM to 5:00 or 6:00 PM). Other parking spaces have meters and/or allow parking only during the non-peak commute periods.

Parking occupancies are about 85% on average over the course of the day. The parking demand in this area is primarily associated with the UCSF campus during the mid-morning (10:00 AM – 12 Noon) and midday (12 Noon – 2:00 PM) periods, and the residential and nearby neighborhood commercial uses during the evening period. These parking occupancies do not consider residents who park in their own driveways, which is typical in this area given the high parking demand.

Off-Street Parking

There are several UCSF-managed off-street parking facilities in the vicinity of the Parnassus Heights campus site that provide approximately 2,700 public and permit-only parking spaces. These include:

- Millberry Union / Kalmanovitz Library garage, located between Judah Street and Irving Street, with about a 1,075 vehicle capacity, of which approximately 1,000 spaces are available to the general public, and the rest are reserved to UCSF faculty and staff. In addition, staff, faculty, and students may purchase monthly "afternoon" parking permits to park in this garage on weekdays from 2:30 PM to 8:00 AM and anytime on the weekend.

- Medical Building 1 (Ambulatory Care Center) garage, located adjacent to the Millberry Union Garage, at the Irving Street / Arguello Boulevard intersection, with 1,007 marked parking spaces and the capacity to accommodate 330 additional vehicles with attendant parking. Permit parking is available for faculty, house staff, and senior management.

- Proctor surface lot is located south of Kirkham Street near the intersection of Fifth Avenue and provides 16 spaces available by permit.

- The Westside surface lot behind the Dental Clinics Building at Fourth Avenue and Kirkham Street, on the western edge of the campus site. There are 151 parking spaces; about 81 spaces are reserved for permit parking.

- Beckman surface lot is located on Koret Way across from the Beckman Vision Center, and provides 76 parking spaces, with 13 spaces available for public parking.

- The Environmental Health and Safety Building has a 9-space surface parking lot, off Medical Center Way, available by permit.

- The Surge and Woods lots form a 158-space surface parking lot located off Medical Center Way above the Parnassus Heights campus site. Parking permits for this location are issued for staff.

- The Langley Porter Psychiatric Institute has a 21-space surface parking lot, off Medical Center Way at the eastern edge of the campus site, available by permit.

- The Emergency Room parking area is accessed off Parnassus Avenue at the southeast end of the campus site and provides 23 parking spaces reserved for ambulances, emergency patients, and for designated radiation and chemotherapy patients.

- Aldea surface parking lots are located within the Aldea Housing Area in the southern portion of the campus site and contain 192 parking spaces reserved to UCSF residents.

In addition, the Kezar surface lot is a city-owned parking facility adjacent to Kezar Pavilion on Stanyan Street. UCSF has about 100 spaces reserved for staff and faculty use during the day. UCSF shuttle bus service is provided every 10 to 20 minutes on average between the lot and the campus from 5:30 AM to 9:00 PM.

The overall occupancy of the spaces in the above-described parking facilities is about 88% between 10:00 AM and 2:00 PM, and about 50% between 6:00 PM and 8:00 PM. An occupancy above 90% typically represents that the facility is at is effective capacity.

6.14.3 Transportation and Traffic – Parnassus Heights Campus Site Impacts and Mitigation Measures

6.14.3.1 Impact Methodology

Analysis Approach

The transportation analysis in this EIR considers operations-related issues related to vehicular traffic, transit facilities, pedestrians, bicyclists, and parking, as well as construction-related impacts, associated with implementation of the 2014 LRDP at the Parnassus Heights campus site. To determine potential impacts on the transportation system, it was first necessary to establish the background transportation conditions for the horizon years. Future year background conditions for the LRDP are based on the countywide travel demand model developed and maintained by the San Francisco County Transportation Authority (SFCTA).

Vehicle, pedestrian, bicycle, and transit travel demand associated with the 2014 LRDP was estimated based on factors developed from extensive surveys conducted at existing UCSF facilities over the past few years, and through the use of a four-step process: trip generation, mode split, trip distribution, and trip assignment. In the first step, the number of person trips generated by the 2014 LRDP was estimated on a daily, AM and PM peak hour basis. Next, the person trips were assigned to different modes of travel (automobile, transit, UCSF shuttle, bicycles, etc.). Then, the geographic distribution of the trip origins and destinations was predicted, and finally, project trips for each mode were assigned to specific streets, UCSF shuttle routes and transit lines along the transportation network.

Travel Demand Estimates

The 2014 LRDP proposes various levels of growth at each campus site through the plan horizon year of 2035. Some known projects, such as Phase 2 of the Medical Center in Mission Bay, are currently projected to occur between 2035 and 2040, after the 2014 LRDP horizon year, but have been incorporated into the travel demand estimates presented in this document, As such, the transportation analysis represents a conservative approach as it includes development five years past the 2015 LRDP horizon, to the year 2040. Each campus site is expected to increase in population through the 2014 LRDP horizon year of 2035, with the highest growth expected at the Mission Bay campus site.

The Parnassus Heights campus site is estimated to generate a total of approximately 3,055 new daily person trips by 2040. That number of trips reflects the total number of additional person trips that would be generated by the increased campus site population, but it does not reflect trips associated with the internal trips expected to occur within the campus site. An internal trip is a trip with its origin and destination within the same campus site (e.g., a researcher at the Parnassus Heights campus site traveling from her office to the Millberry Union to eat lunch and returning back to her office afterwards). Taking those internal trips into account, the Parnassus Heights campus site is estimated to generate approximately 1,928 new external daily person trips by 2040.

"Mode choice" is the designation of trips to the various means that people use to travel, such as automobile, transit, walking, bicycling, taxi, or other mode of transportation. The determination of the mode of transportation used in trips to and from the Parnassus Heights campus site would depend on many characteristics of the trip (e.g., the population group: that is, faculty, staff, vendor, patient, visitor), the type of trip (work, visit), and the specific site. Travel mode split and average vehicle occupancy assumptions were based on information collected by UCSF and its consultants, with the estimates of the future modal share based on the current modal splits for each campus site by population type, which take into account the transit accessibility, UCSF shuttle service, parking availability, and TDM measures being provided at each campus site; this approach is consistent with the travel demand methodologies established by the SF Planning Department. The majority of Parnassus Heights campus site trips arrive/depart the campus site by taking public transit or the UCSF shuttle service. The 1,928 external daily person trips generated by the Parnassus Heights campus site are expected to use the following travel modes:

274 Auto Drive Alone
107 Drop-Off/Taxi
48 Carpool/Vanpool
400 Public Transit
637 UCSF Shuttle
171 Bicycle/Motorcycle
291 Walk

The auto drive alone, drop-off/taxi, carpool/vanpool, and UCSF shuttle person trips would generate about 405 daily vehicle trips.[15]

Approximately 95 new vehicle trips would occur during both the AM and PM peak hour. There would be approximately 190 new transit riders in the AM peak hour and 170 new transit riders in the PM peak hour, with a majority of transit users using Muni and the UCSF shuttle bus service.

The new trips associated with the Parnassus Heights campus site were assigned to San Francisco and regional origins/destinations, including the four San Francisco Superdistricts (northeast, northwest, southeast, and southwest quadrants of the City), the East Bay, the North Bay, and the South Bay, as well as areas outside the Bay Area region. Information collected by UCSF as part of its yearly commute surveys of employees, patients, visitors and residents was used in this analysis.

6.14.3.2 Construction Period Impacts

Impact TRAF-PH-1: Implementation of the 2014 LRDP on the Parnassus Heights campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities. (Potentially Significant)

Impacts associated with demolition and construction activities that would occur as the 2014 LRDP is implemented are addressed in Chapter 5 (**Impact TRAF-LRDP-1**). That 2014 LRDP

[15] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

Plan-Level analysis determined that although construction activities would be temporary, construction impacts would be considered potentially significant given the magnitude of 2014 LRDP development over the course of many years and need for on-going coordination and monitoring. The potentially significant determination would apply to the 2014 LRDP elements on the Parnassus Heights campus site. The implementation of LRDP **Mitigation Measure TRAF-LRDP-1: Construction Coordination and Monitoring Measures** would reduce construction-period impacts to less-than-significant levels.

Mitigation Measure: Implement **Mitigation Measure TRAF-LRDP-1**

Significance after Mitigation: Less than Significant

6.14.3.3 Operational Impacts

Impact TRAF-PH-2: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase traffic at intersections on the adjacent roadway network. (Less than Significant)

Table 6.14-2 presents a summary comparison of Existing and Existing plus 2014 LRDP intersection LOS for the weekday AM and PM peak hours. In general, the addition of 2014 LRDP-generated traffic would result in small changes in the average delay per vehicle at the study intersections, and all study intersections would continue to operate at the same service levels as under Existing conditions. While the great majority of the study intersections operate at acceptable levels of service (LOS D or better) under both AM and PM peak hour conditions under Existing conditions, and would continue to operate acceptably under Existing Plus 2014 LRDP conditions, the following five study intersections (listed by intersection number in Table 6.14-2) currently operate at unacceptable levels of service (LOS E or F), and would continue to operate at the same LOS under Existing Plus 2014 LRDP conditions:

1. Oak Street – Fell Street – Kezar Drive / Stanyan Street (PM peak hour)
2. Lincoln Way / Ninth Avenue (PM peak hour)
4. Lincoln Way / Fourth Avenue (AM peak hour)
15. Judah Street – Parnassus Avenue / Fifth Avenue (PM peak hour)
21. Kirkham Street / Seventh Avenue (AM peak hour)

For these five intersections, the 2014 LRDP's contribution to the intersection's critical movements was calculated to determine if the 2014 LRDP would have a significant impact, and in each case, the 2014 LRDP contribution would not be considered significant. Therefore, the 2014 LRDP's traffic impact at intersections on the adjacent roadway network would be considered less than significant.

Mitigation: None required.

TABLE 6.14-2
EXISTING AND EXISTING PLUS 2014 LRDP
PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – PARNASSUS HEIGHTS

Intersection	Traffic Control[a]	Peak Hour	Existing		Existing plus 2014 LRDP	
			Delay (sec.)[b]	LOS[c]	Delay (sec.)[b]	LOS[c]
1. Oak Street-Fell Street-Kezar Drive / Stanyan Street	Signal	AM	45	D	45	D
		PM	**58**	**E**	**59**	**E**
2. Lincoln Way / Ninth Avenue	Signal	AM	39	D	39	D
		PM	**65**	**E**	**67**	**E**
3. Lincoln Way / Seventh Avenue	Signal	AM	32	C	32	C
		PM	39	D	40	D
4. Lincoln Way / Fourth Avenue	SSS	AM	**>50**	**F**	**>50**	**F**
		PM	23	C	24	C
5. Lincoln Way-Kezar Drive / Third Avenue	SSS	AM	24	C	24	C
		PM	29	D	29	D
6. Fredrick Street / Stanyan Street	Signal	AM	26	C	27	C
		PM	24	C	24	C
7. Irving Street / Ninth Avenue	Signal	AM	17	B	17	B
		PM	20	B	20	B
8. Irving Street / Seventh Avenue	Signal	AM	24	C	24	C
		PM	25	C	26	C
9. Irving Street / Fourth Avenue	AWS	AM	11 (12)	B (B)	11 (12)	B (B)
		PM	11 (12)	B (B)	11 (12)	B (B)
10. Irving Street / Second Avenue	AWS	AM	10 (11)	B (B)	10 (11)	B (B)
		PM	11 (12)	B (B)	11 (12)	B (B)
11. Irving Street / Arguello Boulevard	SSS	AM	15	B	15	B
		PM	27	D	31	D
12. Judah Street / Ninth Avenue	Signal	AM	15	B	15	B
		PM	16	B	16	B
13. Judah Street / Seventh Avenue	Signal	AM	32	C	34	C
		PM	25	C	25	C
14. Judah Street / Sixth Avenue	AWS	AM	17 (18)	C (C)	17 (18)	C (C)
		PM	17 (22)	C (C)	17 (23)	C (C)
15. Judah Street-Parnassus Avenue / Fifth Avenue	SSS	AM	22	C	23	C
		PM	**42**	**E**	**44**	**E**
16. Parnassus Avenue / Fourth Avenue	AWS	AM	15 (18)	B (C)	15 (18)	B (C)
		PM	19 (23)	C (C)	20 (25)	C (D)
17. Parnassus Avenue / Third Avenue	SSS	AM	17	C	18	C
		PM	20	C	21	C
18. Parnassus Avenue / Hillway Avenue	SSS	AM	13	B	13	B
		PM	15	C	15	C
19. Parnassus Avenue / Hill Point Avenue	SSS	AM	17	C	17	C
		PM	16	C	16	C
20. Parnassus Avenue / Stanyan Street	Signal	AM	41	D	42	D
		PM	29	C	29	C
21. Kirkham Street / Seventh Avenue	Signal	AM	**70**	**E**	**74**	**E**
		PM	30	C	31	C
22. Kirkham Street / Sixth Avenue	AWS	AM	13 (16)	B (C)	13 (16)	B (C)
		PM	13 (14)	B (B)	13 (15)	B (B)
23. Kirkham Street / Fifth Avenue	AWS	AM	<10 (<10)	A (A)	<10 (<10)	A (A)
		PM	<10 (<10)	A (A)	<10 (<10)	A (A)

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled

[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersections, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach (indicated in parentheses).

[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersections, LOS is based on the worst approach, which for AWS is indicated in parentheses.

[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

Impact TRAF-PH-3: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase transit ridership demand. (Less than Significant)

As described in 6.14.3.1 above, approximately 190 and 170 new transit trips are expected during the AM and PM peak hour, respectively. About 50% of transit users will use a UCSF shuttle, and about 30% will use Muni, to commute to and from the campus site, with the remaining transit riders using BART, AC Transit, Caltrain, SamTrans or Golden Gate Transit.

San Francisco Muni. Existing Muni transit stops are located within a half-mile of the center of campus site, with multiple stops located through the campus site on Parnassus Avenue and adjacent to the campus site on Ninth Avenue, Irving Street and Lincoln Way. Major stop relocations adjacent to the campus site are not anticipated at this time. As part of the *Parnassus Avenue Streetscape Plan*, UCSF proposes that Muni consolidate the three transit stops on Parnassus Avenue into two transit stops in order to improve Muni's operating efficiency and provide more flexibility with respect to curb space allocation. The TEP proposes to reduce headways for the following routes: 43 Masonic, 44 O'Shaughnessy, and 71/71L Haight-Noriega.

The estimated number of 2014 LRDP-generated Muni trips is about a 2% increase in ridership traveling to and from the Parnassus Heights campus site, which would not require the expansion of transit service or facilities. Additionally, none of the specific proposals of the 2014 LRDP would reconfigure, or reduce access to, transit stops in a way that would degrade transit service to the campus site. Therefore, the 2014 LRDP's transit impact on Muni service would be considered less than significant.

Regional Transit. UCSF staff, patrons and students are anticipated to continue to use BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit for regional transit service through the 2014 LRDP horizon year. Regional service stations are likely to remain at existing locations, over a half-mile away, and can be accessed by other transit modes such as SF Muni and the UCSF shuttle. Fewer than 20 new regional transit trips are expected during each AM and PM peak hours, and that increase would not require the expansion of regional transit service or facilities. Therefore, the 2014 LRDP's transit impact on regional transit service would be considered less than significant.

UCSF Shuttle. As part of the Parnassus Avenue Streetscape Plan, UCSF will reorganize UCSF shuttle operations by centralizing pick-up and drop-off locations. Existing shuttle stations located at the campus site gateways will be relocated to the center of the campus site on Parnassus Avenue, fronting the campus library in the westbound direction and the Clinical Sciences building in the eastbound direction. The 2014 LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as 2014 LRDP projects are constructed and occupied at each respective campus site.

An approximately 15% increase in UCSF Shuttle ridership during both peak hours is anticipated through the 2014 LRDP horizon year, and that increase would not require the expansion of UCSF shuttle service or facilities. Therefore, the 2014 LRDP's transit impact on UCSF Shuttle service would be considered less than significant.

Mitigation: None required.

Impact TRAF-PH-4: Implementation of the 2014 LRDP on the Parnassus Heights campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

UCSF proposes a variety of improvements to pedestrian and transit facilities at the campus site. The *Parnassus Avenue Streetscape Plan* proposes to make crossing Parnassus Avenue safer and more convenient for pedestrians, reorganize and improve transit and UCSF shuttle operations, create more usable outdoor space, and enhance the public realm. The *Parnassus Avenue Streetscape Plan* also proposes to modify the existing UCSF shuttle stops from the gateways of the campus site to a central location fronting the campus library in the westbound direction and the Clinical Sciences Building in the eastbound direction. In addition to the *Streetscape Plan*, the 2014 LRDP proposes to construct new trails in the Mount Sutro Open Space Reserve.

The 2014 LRDP would add approximately 210 pedestrian trips to the surrounding streets (mostly transit-access trips) during the AM peak hour, and about 190 pedestrian trips during the PM peak hour. Pedestrian trips would primarily use Parnassus Avenue and Carl-Irving Streets to travel to the surrounding residential neighborhoods or to the commercial areas in the Inner Sunset and Cole Valley.

Major stop relocations for Muni service adjacent to the campus site are not anticipated at this time. In addition to the above-cited proposed UCSF shuttle stop changes, proposed changes to buildings along Parnassus Avenue would likely shift some pedestrian traffic to the New Hospital Addition near Hillway Avenue and to the potential future housing at Parnassus and Fifth avenues.

Overall, the 2014 LRDP would improve pedestrian accessibility on the campus site frontage through the Parnassus Avenue Streetscape Plan and new trails in the Reserve. The immediate area surrounding the Parnassus Heights campus site includes robust pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops, and that would accommodate the new pedestrian trips generated by the 2014 LRDP in addition to the shifts in pedestrian traffic that would occur in the future. The 2014 LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the 2014 LRDP's impact to pedestrian circulation and facilities at the Parnassus Heights campus site would be less than significant.

Mitigation: None required.

Impact TRAF-PH-5: Implementation of the 2014 LRDP on the Parnassus Heights campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The area around the Parnassus Heights campus site has a number of streets with bicycle lanes, and streets designated as bicycle routes, including Parnassus Avenue, Kirkham Street, Sixth Avenue, and Seventh Avenue. In addition, there are several bicycle paths and bicycle routes in

nearby Golden Gate Park. The Parnassus Heights campus site is within convenient bicycling distance of residential and commercial areas in surrounding neighborhoods. Within the campus site, the *Parnassus Avenue Streetscape Plan* proposes to convert the current Class III bicycle route to a Class II bicycle lane on steep portion of Parnassus Avenue, from Fifth Avenue to Third Avenue. The SF Bike Plan does not include any short- or long-term improvements in the campus site area.

The 2014 LRDP is expected to increase bicycle demand in the area by approximately 20 new trips during both the AM and PM peak hours. These trips would primarily occur on designated bicycle facilities in addition to other popular routes such as Irving and Carl streets, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated at the campus site through additional bicycle parking provided as a part of UCSF's TDM program. In the near-term, UCSF plans to add one new bicycle cage and 20 new bicycle racks at the Parnassus Heights Campus Site. This would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The expected increase in bicycle traffic would not represent a level that would adversely affect bicycle facilities on the campus site, nor would the 2014 LRDP create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Therefore, the 2014 LRDP's impact to bicycle circulation and facilities at the Parnassus Heights campus site would be less than significant.

Mitigation: None required.

Impact TRAF-PH-6: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase loading demand. (Less than Significant)

The San Francisco Planning Code requires that land uses, such as medical offices and hospitals, provide off-street loading spaces according to a prescribed schedule. The required loading supply was estimated based on that Code requirement, and the existing and proposed loading supply exceeds the Code requirement at the Parnassus Heights campus site.

The demand for loading spaces through the 2014 LRDP horizon year was calculated based on surveys from the Parnassus Heights campus site and methods described in the City's *Transportation Impact Analysis Guidelines for Environmental Review*. The existing peak hourly demand is estimated to be about 52 spaces on the Parnassus Heights campus site, and the 2014 LRDP horizon year peak hourly demand is estimated to be about 55 spaces.

It is expected that the estimated 2014 LRDP loading supply should be adequate for the estimated demand, however, as mentioned above, the campus sites are unique and should be monitored over time. This is considered a less-than-significant impact if UCSF continues to monitor loading operations and provide appropriate supply with guidance from the SF Planning Code and existing operations.

In addition to freight loading, there is a demand for passenger loading spaces, and in order to estimate passenger loading demand, the drop-off/taxi service mode split and a portion of the carpool mode split percentages presented in the Travel Demand Estimates discussion (Section 6.14.3.1) above was applied to the peak AM and PM peak-hour person trips. The peak-hour passenger loading demand is estimated to increase by approximately 5% at the Parnassus Heights campus site.

As indicated by observations made of very active loading areas that on occasion generate queues of vehicles awaiting entry, there is an existing deficit of passenger loading supply to accommodate the existing peak hour demand at the Parnassus Heights campus site. It should be noted that this deficit appears to be exacerbated during peak times by some vehicles not adhering to all peak hour parking and loading regulations. As part of the 2014 LRDP, the *Parnassus Avenue Streetscape Plan*, which seeks to alleviate parking and loading congestion among other goals, will be implemented. In addition to the *Parnassus Avenue Streetscape Plan*, as part of the New Hospital Addition, a new passenger loading loop, larger than the current Moffitt Loop and sized to compensate for the existing deficit of passenger loading supply, will be provided off Parnassus Avenue.

The combination of the Parnassus Avenue Streetscape Plan and new passenger loading loop at the New Hospital Addition will be sufficient to accommodate the estimated 2014 LRDP demand; therefore, the 2014 LRDP's impact to passenger loading is considered less than significant.

Mitigation: None required.

Impact TRAF-PH-7: Implementation of the 2014 LRDP on the Parnassus Heights campus site would increase parking demand. (Less than Significant)

Under the 2014 LRDP, additional parking would be provided on the Parnassus Heights campus site, as warranted by the proposed development (i.e., the number of any new parking spaces would be determined as projects are proposed). It is estimated that the number of parking spaces owned by UCSF at the Parnassus Heights campus site would increase by approximately 90 spaces (about 3%) by year 2040. The following list describes the currently proposed changes in parking supply:

- Upon demolition of the Laboratory of Radiobiology building, the remaining surface pad may be improved, then used for approximately 30 contractor-only spaces sometime between 2014 and 2019.

- Upon demolition of the Medical Research 4 building, the remaining lot may be graded and improved and used for approximately 30 contractor-only spaces sometime between 2014 and 2019.

- About 20 parking spaces at the Surge surface lot would be converted from permit holder to contractor-only parking sometime between 2014 and 2019.

- Upon demolition of the Koret Vision building, the remaining surface pad may be improved, then used for approximately 30 contractor-only spaces sometime between 2031 and 2035.

As described previously, the available on-street parking is well-occupied at the Parnassus Heights campus site, and has therefore not been considered as a resource for the future parking utilization analysis, which has focused instead on the availability of off-street parking. Assessment of the growth of peak parking demand under the 2014 LRDP shows that the future parking utilization at the Parnassus Heights campus site would be at its effective capacity. Because there would not be a shortfall in parking supply, the 2014 LRDP's impact to parking demand is considered less than significant.

Mitigation: None required.

6.15 Utilities and Service Systems

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Utilities and Service Systems are contained in Section 4.15 of this EIR. The CEQA Significance Standards presented in Section 4.15.3 are used to evaluate the potential utilities and service systems impacts of all proposed 2014 LRDP activities.

The overall effects on water supply, wastewater treatment, storm drainage facilities, solid waste disposal and energy demand resulting from implementation of the 2014 LRDP were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. No expansion of water, wastewater or storm drainage facilities beyond the standard service connections of future buildings to the City's existing infrastructure is anticipated at the Parnassus Heights campus site.

CHAPTER 7
Mission Bay Campus Site – Setting, Impacts and Mitigation Measures

7.0 Introduction

This chapter considers the existing conditions and describes the potential impacts of 2014 LRDP activities proposed at the Mission Bay campus site. Functional zones, space program, population at LRDP horizon and proposed LRDP development activities that would occur at the Mission Bay campus site were described in detail in Section 3.8.2 of Chapter 3, *Project Description*, and are summarized briefly below. The remaining 15 major sections of this chapter present the site settings and impacts for each of the 15 environmental topics.

7.0.1 Functional Zones

The proposed functional zoning diagram for the Mission Bay campus site is shown in **Figure 3-11**, in Chapter 3, *Project Description*. Functional zones on the North Campus of the Mission Bay campus site reflect the organizational structure of the original *Mission Bay Master Plan and Design Guidelines*. A second Housing functional zone is proposed on the northern edge of the North Campus on Block 15, identified for future housing use because of its proximity to off-site residential development under construction north of the Mission Bay campus site, and proximity to on- and off-site open space and a potential public school site on Block 14.

The majority of clinical uses are expected to be located on the South Campus in the Clinical functional zone, in support of the UCSF Medical Center at Mission Bay. However, several clinics have been developed as a secondary use within the Research functional zone in cases where there is a close functional relationship between clinical and research programs, and this is likely to continue in the future.

Parking functional zones are located near the periphery of the campus site so as to minimize vehicular traffic within the campus site. The two parking zones on Owens Street provide for parking expansion when it is needed to support future program growth.

The East Campus (Blocks 33 and 34) is functionally zoned for research and parking use, shown as a striped pattern on Figure 3-11 because the exact footprints for those uses have not yet been determined. When the locations of specific uses on the parcel are identified, the functional zones for the East Campus will be updated accordingly.

7.0.2 Space Program

The LRDP proposes an additional 2.40 million gsf in owned and leased buildings across all of UCSF's sites through 2035. The allocation of this growth at the Mission Bay campus site at LRDP horizon in 2035 is shown in **Table 7.0-1**, below. As noted previously, for the purposes of the EIR analysis, growth at the Mission Bay campus site at the LRDP horizon includes the Phase 2 Medical Center at Mission Bay. The total space in 2035 also includes Mission Hall and the Phase 1 Medical Center, both of which are under construction and expected to open in late 2014 and 2015, respectively the cancer outpatient building and development of Blocks 33 and 34 (East Campus).

TABLE 7.0-1
MISSION BAY EXISTING AND LRDP HORIZON GSF

Type of Space	Existing 2013 Total gsf	LRDP Horizon 2035 Total gsf
Instruction	102,000	249,000
Research	891,600	1,908,800
Clinical	30,600	1,795,300
Support		
Academic Support	102,400	222,300
Academic/Campus Admin	174,000	478,100
Campus Community	187,300	266,500
Logistics	32,200	187,900
Support Subtotal	495,900	1,154,800
Housing	387,400	786,100
Vacant/Alteration	19,200	34,900
Total	**1,926,700**	**5,928,900**

7.0.3 Population

The total projected UCSF population across all campus sites (including population associated with the Phase 2 Medical Center at Mission Bay) would increase by approximately 17,000 at the LRDP horizon. As shown in **Table 7.0-2**, below, the projected increase in population at the Mission Bay campus site would be approximately 17,000 in 2035.

TABLE 7.0-2
MISSION BAY EXISTING AND PROJECTED POPULATION

	Existing (2013)	Projected Population at LRDP Horizon (2035)	Change
Students	489	586	97
Faculty and Staff	3,851	15,393	11,542
Patients	153	2,407	2,254
Visitors	324	3,462	3,138
Total	**4,817**	**21,848**	**17,031**

7.0.4 Mission Bay – 2014 LRDP Proposals

As described in Chapter 5, the 2014 LRDP proposals at the four campus sites consist of three general activities: 1) demolition, 2) renovation, 3) construction of new facilities, and 4) circulation, open space, and utilities/infrastructure proposals. The 2014 LRDP proposals at the Mission Bay campus site are listed below:

Construction Proposals

- New Housing on Block 15
- Develop Additional Research Capacity on Blocks 16, 18A, 23A, 25B, 33 and 34
- Phase 1 Medical Center – Cancer outpatient building
- Phase 2 Medical Center[1]
- New parking structures on Blocks 18, 33/34, and 38

Circulation, Open Space, and Utilities/Infrastructure Proposals

- Block 15 pump station upgrade

Mission Bay – 2014 LRDP Proposal Construction Time Frames

Activities at the Mission Bay campus site to implement the 2014 LRDP proposals would occur between the year 2015 and the LRDP horizon in 2035. These are presented in **Table 7.0-3**, below.

TABLE 7.0-3
PROPOSAL CONSTRUCTION TIME FRAMES AT MISSION BAY

Proposal Title	Land Use	Gross Square Feet / Number of Residential Units
2015-2019		
Block 15	Housing	418,200 gsf / 523 units
Block 33	Research Building	275,000 gsf
Block 33/34	Parking Garage	167,500 gsf
Cancer Outpatient	Medical Building	124,500 gsf
Block P15 pump station	--	--
2020-2025		
Block 23A	Research Building	232,200 gsf
Block 34	Research Building	225,000 gsf
Block 18	Parking Garage-Phase 1	271,000 gsf
2025-2030		
Block 25B	Research Building	323,000 gsf
Block 16	Research Building	377,400 gsf
2030-2035		
Block 18A	Research Building and Parking Garage	193,000 gsf
Phase 2 Medical Center	Hospital and Parking Garage	793,500 gsf

[1] The Phase 2 Medical Center at Mission Bay is anticipated to be constructed after the LRDP horizon year of 2035: however, the impacts associated with its construction and operation are evaluated in this EIR in order to provide a conservative analysis of future development of the entire Mission Bay campus site.

7.0.5 LRDP Variant

As discussed in Section 3.8.2.3 of Chapter 3, *Project Description,* the East Campus (Blocks 33 and 34) is proposed to be developed with up to 500,000 gsf and 500 parking spaces, and would be functionally zoned for research and parking use. UCSF is also considering a variant that would develop Blocks 33 and 34 with clinical uses for a portion of the proposed 500,000 gsf. Although the amount of clinical space that may be developed has not yet been determined, up to about 250,000 gsf could be developed, with the remainder 250,000 gsf as research/office use. Similar to the 2014 LRDP proposal for Blocks 33 and 34, no specific UCSF programs have been identified yet to relocate to the site, and no specific building design is proposed. Proposed development would follow the *Mission Bay South Redevelopment Area Plan "Design for Development"* regarding building height, bulk, setbacks, maximum tower floorplate and other design matters. As with the Blocks 33/34 proposal under the LRDP, up to 500 parking spaces would be developed under this variant.

The LRDP Variant would have the same or similar effects as the proposed 2014 LRDP development for most of the environmental topics analyzed in the EIR. Those topics that would have different effects are discussed in the following sections of this chapter: Section 7.2, *Air Quality*; Section 7.6, *Greenhouse Gas Emissions*; Section 7.9, *Land Use and Planning*; Section 7.10, *Noise*; and Section 7.15, *Transportation and Traffic*.

7.1 Aesthetics

This section considers the setting and aesthetics impacts at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential Aesthetics effects are contained in Section 4.1 of this EIR. The CEQA Significance Standards presented in Section 4.1.3 are used to evaluate the potential aesthetics impacts of all proposed 2014 LRDP activities.

7.1.1 Aesthetics Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Scenic resources.** No activities would result in an adverse impact to scenic resources within a state scenic highway. Therefore, no additional analysis of this issue is required.

7.1.2 Aesthetics – Mission Bay Setting

The Mission Bay campus site is located within the 303-acre Mission Bay Redevelopment Area in the Mission Bay neighborhood, north of the Potrero Hill and Dogpatch neighborhoods. The campus site is generally bounded by Mission Bay Boulevard South to the north, Owens Street to the west, Mariposa Street to the south and Third Street to the east. It is a relatively flat area characterized primarily by man-made visual landmarks, including the elevated Interstate 280 highway to the west. The campus site includes 42.2 acres north of Sixteenth Street (North Campus) and 14.4 acres south of Sixteenth Street (South Campus). Sixteenth Street serves as the primary gateway from the west into the Mission Bay area. The North Campus is bifurcated by Fourth Street; through the South Campus, Fourth Street transitions into a large pedestrian plaza and bicycle route, which serve the Medical Center.

Natural features in the vicinity include Potrero Hill, located southwest and elevated above the campus site, and San Francisco Bay, which serves as the major visual boundary to the east. Development in the immediate vicinity of the campus site consists largely of new research and office buildings of similar size and character to UCSF, as well as multi-family residential buildings. Beyond Interstate 280, to the west and south of the campus site, are the Showplace Square, Dogpatch and Potrero Hill neighborhoods, which consist of residential areas, commercial buildings and some industrial uses. Non-residential buildings in these neighborhoods are generally bulky, two- to three story warehouse or former light industrial structures.

The visual environment on the campus site is dominated largely by campus buildings as well as Koret Quad. Genentech Hall, the adjoining Byers Hall, Sandler Neurosciences Center, Arthur and Toni Rembe Rock Hall and the Rutter Center all surround Koret Quad. The roughly three-acre quad is a grassy, landscaped open space immediately north of Genentech Hall that serves as a gathering place for the public as well as the campus community. A housing complex consisting of four separate buildings ranging from 7 to 15 stories with a total of 430 units is located northwest

of Koret Quad. The Smith Cardiovascular Research building and Diller Cancer Research building are located north of the housing complex. Campus buildings generally have large rectangular footprints, an 85-foot height to the cornice line, a light-colored material palette of two-toned travertine and concrete for the skin, light green tinted glazing, arcades at the ground level and sculptural treatment of the rooftop mechanical equipment and exhaust stacks. The Rutter Center serves as a contrast to other campus buildings with its reddish color and 144-foot tower. The campus site includes three parking structures: Third Street, Community Center Garage (adjoining the Rutter Center) and Owens Street (on south campus).

Mission Hall, a faculty office building, is currently under construction at the northeast corner of Fourth and 16th Streets. Phase 1 of the Medical Center at Mission Bay is currently under construction on the South Campus and will open in early 2015. Phase 1 includes three specialty hospitals, a medical outpatient building, an energy center, and structured and surface parking.

7.1.2.1 Mission Bay South Redevelopment Area Plan "Design for Development"

The San Francisco Office of Community Investment and Infrastructure's (OCII) *Mission Bay South Redevelopment Area Plan "Design for Development"* contains objectives and policies that serve as design guidelines for future development in the plan area surrounding the UCSF campus site at Mission Bay. These guidelines support the creation of a pattern of streets, parks and buildings that yields a high-density, urban streetscape while preserving and maximizing views to and from the area. The *Mission Bay South Plan* intends for new development to recognize the physical transition from the higher elevations of Potrero Hill to the lower elevations of the shoreline, thus allowing taller buildings closer to Potrero Hill and stepping down to lower building heights closer to the shoreline. The plan establishes major public open space corridors and uses, building height limits, view corridors and other design guidelines throughout the plan area to ensure access to sunlight, to reduce wind effects and to create a diverse and pleasant urban environment.

7.1.2.2 UCSF Mission Bay Design Guidelines

Design guidelines were developed by UCSF for the Mission Bay campus site that address such features as building mass, scale, height, floor size, proportion and setbacks. The *Mission Bay Campus Master Plan and Design Guidelines* (CMPDG) is an internal UCSF planning tool to provide an overall framework for the physical development of the Mission Bay campus site. It sets forth basic principles to guide the design of individual buildings and landscaping projects with the understanding that buildout of the campus site would include designs by many different architects over time. The CMPDG is intended to be compatible with the design standards and guidelines of the *Mission Bay South Redevelopment Area Plan* "*Design for Development*."

7.1.2.3 UCSF Physical Design Framework

As discussed in Section 4.1.2.2, development at UCSF is also guided by the *Physical Design Framework*, which sets forth a vision for the physical development of all UCSF campus sites. It

serves as the foundation for UCSF to plan and design future projects according to a clear and consistent set of planning and design principles, guidelines and strategies. The *Physical Design Framework* contains six planning principles that are universally applicable to UCSF campus sites. They express key thematic concepts of Context, Connectivity, Cohesiveness, Collegiality, Community and Conservation. The *Physical Design Framework* also includes six planning and design strategies for the Mission Bay campus site: 1) Strengthen UCSF's Identity and Wayfinding, 2) Enhance the Pedestrian Spine, 3) Complete the Open Space Network, 4) Enhance the Campus Core, 5) Develop Opportunity Areas, and 6) Develop Transportation Facilities.

7.1.3 Aesthetics – Mission Bay Impacts and Mitigation Measures

Impact AES-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site would not have a substantial adverse effect on a scenic vista. (Less than Significant)

The *Mission Bay South Redevelopment Area Plan "Design for Development"* guidelines designated view corridors along street alignments to preserve the orientation and visual linkages to the Bay and Mission Creek, to nearby hills, the Bay Bridge and the downtown skyline; and to preserve orientation and visual linkages that provide a sense of place within Mission Bay. Buildings proposed for the Mission Bay campus site under the 2014 LRDP on Blocks 15, 16, 18, 23, and 25; the cancer outpatient building; or the Phase 2 Medical Center would not intrude on views of the Bay, downtown or nearby hills as viewed from public streets or pedestrian corridors. Proposed development on Blocks 33 and 34 would similarly comply with the *Mission Bay South Redevelopment Area Plan "Design for Development"* guidelines regarding view corridors. Therefore, the impact would be less than significant.

Mitigation: None required.

Impact AES-MB-2: Implementation of the 2014 LRDP at the Mission Bay campus site would not substantially degrade the existing visual character or quality of the site and its surroundings. (Less than Significant)

The 2014 LRDP includes proposed development of remaining and increased entitlement on Blocks 16, 18, 23, and 25; a new housing complex on Block 15; the cancer outpatient building; and the Phase 2 Medical Center. Although these building have not yet been designed, preliminary designs provide basic parameters for development on each block. As summarized from Chapter 3, *Project Description*, Block 15 would include a housing complex comprised of four or fewer buildings with an internal courtyard. Building heights would range from 55 feet along Mission Bay Commons to 120 feet along Fifth Street. On Block 16, one research and/or office building and a central utility plant, or alternatively, two research buildings may be built. The height of the proposed buildings on Block 16 would be similar in height to other research buildings on the campus site (85 feet), but would have setbacks of 30 feet at the 55-foot height along Mission Bay Boulevard South in accordance with the CMPDG. Block 18 is proposed to include one office and/or research building up to 160 feet tall. A separate or attached parking garage up to 110 feet tall could be built east of the

proposed building on Block 18. A full-size, multi-purpose sports field would be developed on the eastern portion of the block. An 85-foot tall research building is proposed for the western side of Block 23. Block 25 is proposed to include a research/office building on the eastern side of the block with all or a portion of the building constructed up to 160 feet in height. The cancer outpatient building would be approximately 105 feet tall, with an additional 20 feet to the top of the mechanical screen. Phase 2 of the Medical Center would include multiple buildings that would be consistent with the design features of the Phase 1 Medical Center. Two enclosed pedestrian bridges are proposed at the third and fourth floors across Fourth Street that would connect Phase 1 on the east side of Fourth Street to Phase 2 on the west side of the street.

Three visual simulations showing basic height and bulk of the proposed buildings from viewpoints shown on **Figure 7.1-1** are provided below. **Figure 7.1-2** shows proposed development on Block 16 looking southwest along Fourth Street. The similarity in building height for proposed development on Block 16 with other existing buildings along Fourth Street is evident in this view.

Figure 7.1-3 shows the proposed residential complex on Block 15 as viewed from the planned Mission Bay Commons (not part of UCSF). Development on Block 16 is also visible in the background. The proposed office/research building on Block 25 is depicted in **Figure 7.1-4**. This view also includes a simulation of the cancer outpatient building, which is anticipated to be constructed prior to 2035 as part of the Phase 1 entitlement for the Medical Center at Mission Bay. Mission Hall, which is currently under construction on the western portion of Block 25 as shown in the existing view, would not be visible from this viewpoint upon completion of the LRDP-proposed building and the cancer outpatient building. Proposed development on Blocks 33 and 34 would follow the *Mission Bay South Redevelopment Area Plan "Design for Development"* guidelines regarding building height, bulk, setbacks, maximum tower floorplate and other design matters.

Although changes in appearance at the Mission Bay campus site would be noticeable, new buildings would be built in accordance with UCSF's CMPDG, *Physical Design Framework* and *Facilities Design Guidelines* and would be consistent with the 2014 LRDP's Community Planning Principles regarding Building and Public Realm Design. As buildings on the Mission Bay campus site are proposed during the LRDP horizon, consideration will be given to the development of open space, landscape improvements in the adjacent streets and pedestrian connections per the *Physical Design Framework.* Courtyards may be included as part of project design to provide additional open space. Proposed buildings would be sited appropriately in the Research, Housing, or Parking functional zone, as delineated by the 2014 LRDP. The design guidelines would ensure that final building designs respond to the form of adjacent buildings (e.g., in terms of massing and height) and the overall context of the Mission Bay campus site and vicinity. Because the proposed buildings would be visually similar to existing buildings on the campus site, they would not substantially degrade the visual character of the site and its surroundings. Therefore, effects to visual quality and character regarding implementation of the 2014 LRDP at the Mission Bay campus site are less than significant.

Mitigation: None required.

SOURCE: Environmental Vision

UCSF Long Range Development Plan Environmental Impact Report

Figure 7.1-1

Viewpoint Locations-Mission Bay

Existing view from Fourth Street at Mission Bay Boulevard looking southwest (VP 1)

Visual Simulation of Proposed Project

Note: Visual simulation depicts potential building envelope, not proposed design.

SOURCE: Environmental Vision

UCSF Long Range Development Plan Environmental Impact Report

Figure 7.1-2

Visual Simulation-Mission Bay

Existing view from Mission Bay Boulevard (future) near Sixth Street looking east (VP 2)

Visual Simulation of Proposed Project

Note: Visual simulation depicts potential building envelope, not proposed design.

SOURCE: Environmental Vision

UCSF Long Range Development Plan Environmental Impact Report

Figure 7.1-3

Visual Simulation-Mission Bay

Existing view from Third Street near 16th Street looking northwest (VP 3)

Visual Simulation of Proposed Project

Note: Visual simulation depicts potential building envelope, not proposed design.

SOURCE: Environmental Vision

Figure 7.1-4

Visual Simulation-Mission Bay

Impact AES-MB-3: Implementation of the 2014 LRDP at the Mission Bay campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area. (Potentially Significant)

Development at the Mission Bay campus site could increase ambient light levels due to light dispersion from the new buildings. Increases in night lighting could affect nighttime views in this area of the campus site or in the surrounding neighborhood. New light sources could include street lights, illuminated signage, exterior safety lighting and light emitted from building windows. Glare could be generated from reflective building materials. Because specific architectural features and building materials of the new buildings have yet to be determined, the proposed improvements have the potential to include reflective surfaces, such as metal and glass. The resultant glare could affect nearby residents, pedestrians and passing motorists. **Mitigation Measure AES-LRDP-1** would be implemented to reduce the impact to a less than significant level. By employing appropriate design standards and minimizing the quantity of reflective material used in new construction, light and glare impacts and impacts to views related to lighting could be reduced to less-than-significant levels.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-1

Significance after Mitigation: Less than Significant

Impact AES-MB-4: Implementation of the 2014 LRDP at the Mission Bay campus site could result in flood lighting during nighttime construction activities. (Potentially Significant)

Although construction operations are generally expected to take place during the day, some activities could be conducted at night to reduce noise, vibration or other effects on daytime office or research uses. To enable construction at night, flood lighting would be required. The use of night lighting would have the potential to disturb residents in neighborhoods near the campus site, and potentially also affect nighttime views. Night lighting of construction sites would be temporary and would cease upon completion of construction. **Mitigation Measure AES-LRDP-2** would be implemented to reduce the impact of nighttime work lighting to a less than significant level.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-2

Significance after Mitigation: Less than Significant

Impact AES-MB-5: Implementation of the 2014 LRDP at the Mission Bay campus site could create street-level winds that could be hazardous to pedestrians in the area. (Potentially Significant)

Prior wind tunnel tests for proposed UCSF Mission Bay buildings have demonstrated that existing wind conditions within the Mission Bay campus site have improved over time as planned buildings have been constructed in accordance with the *Mission Bay South Redevelopment Area*

Plan "Design for Development." This general trend is expected to continue as more buildings are constructed in the Mission Bay Redevelopment Area and on the Mission Bay campus site.

The existing pedestrian wind conditions on the remaining large vacant parcels of land in the south Mission Bay Redevelopment Plan Area can be characterized as windy to very windy. Prior wind testing clearly demonstrates that "equivalent" wind speeds[2] in open areas within the south Mission Bay Redevelopment Area typically reach 16 to 22 mph. In large parcels without buildings to slow the wind, typically as many as half to three-quarters of the open area might experience wind speeds that exceed the wind hazard criterion of Section 148 of the Planning Code. The duration of each such wind hazard is typically less than 10 hours per year. However, in locations near to or in the wakes of buildings, it is possible that wind accelerations and turbulence created by buildings could result in wind hazards with longer durations.

However, as more buildings are built and fill in vacant sites in the south Mission Bay Redevelopment Plan Area and on the campus site, wind speeds in pedestrian areas near buildings will generally continue to decrease. Groups of buildings such as those at the UCSF campus site or similar structures built according to the "*Design for Development Guidelines"* substantially slow the winds. Winds in the downwind reach of such buildings, although much slowed, tend to be much more variable in speed. Typically, the range of wind speeds expected in locations on and around those sites would be 2 to 3 mph lower, namely in the range of 13 to 19 mph.

Exceptions occur along wide streets and on blocks fronting open spaces, such as the Commons, where the wind can regain speed before reaching a building – there, the higher speed wind striking a building can be deflected to cause adverse winds around the base of that building. Similarly, if a building or tower is much taller than nearby buildings, it can deflect winds to ground level to cause adverse winds there.

Prior wind testing conducted for the UCSF Mission Bay campus site included testing in 2001 for Block 20 Housing, the UCSF Medical Center at Mission Bay in 2008, and for Mission Hall, Building 25A, in 2012. These tests provide sufficient information to characterize wind conditions on the campus site. Because wind testing requires models, basic building masses and shapes such as described in the LRDP or in the *Mission Bay South Redevelopment Area Plan "Design for Development"* were used to model program buildings or upwind buildings in the Redevelopment Area whenever such buildings had not yet been designed. Using bulk shapes for such buildings yields the best possible approximation of the future wind conditions with the building design being wind tested. If that project design changes or if the other future building designs substantially differ from those bulk building shapes used, the wind test results may not correctly simulate the wind effects of those actual designs; further, major changes in the basic shape, dimensions, or the orientation of a building can substantially alter its wind effects and can compromise prior test results. On the other hand, experience indicates that simply articulating the basic building masses, as often done in the design process, will improve the performance of each building with respect to wind effects, making the results conservative.

[2] Throughout this discussion, "wind speed" refers to equivalent wind speed (a metric defined in the San Francisco Planning Code Section 148 protocol that includes the effects of turbulence) that is exceeded 10% of the time.

Wind testing in 2001 for UCSF Block 20 housing included the few existing buildings and the project as designed, while most of the surrounding planned campus site structures were represented as simple bulk shapes, because no designs existed.

Wind testing in 2008 for the UCSF Medical Center at Mission Bay included more actual existing buildings and fewer bulk shapes. This test found that both the "*LRDP Phase*" and the "*Future Phase*" of the Medical Center would substantially improve wind conditions in the vicinity by reducing the number and duration of previously occurring wind hazards. The Medical Center *Future Phase* scenario would still result in a single remaining wind hazard at one location at the corner of Mariposa and Third Streets. As a result, continued actions under UCSF Mitigation Measure 4.1-7 from the *UCSF Medical Center at Mission Bay EIR*[3] and its predecessor City Mitigation Measure D.7 from the *Mission Bay Subsequent EIR*[4], or under **Mitigation Measure AES-LRDP-3,** which is the functional equivalent of these two mitigation measures, would be required to eliminate this hazard during the on-going design process for the Medical Center *Future Phase*.

UCSF Mitigation Measure 4.1-7 was based on Mitigation Measure D.7 7, *which* derives from City *Planning Code* Section 148, and simply applies that hazardous wind criterion to proposed projects within the Mission Bay Redevelopment Area. However, under the 2014 LRDP, these two measures are superseded by the **Mitigation Measure AES-LRDP-3,** which is functionally equivalent to these two measures, and which will apply to new UCSF buildings over 100 feet in height. Therefore, compliance with **Mitigation Measure AES-LRDP-3** will also insure compliance with the hazardous wind criterion of City *Planning Code* Section 148.

Subsequent wind testing in 2012 for Mission Hall, Building 25A, found that the final design of Mission Hall would result in generally lower wind speeds on and around Block 25 than were measured in the 2008 wind tests. The major difference was that bulk models were used in the 2008 wind tests to represent nearby Buildings 25A and 25B, but these building shapes were substantially changed in developing the Mission Hall design that was wind tested in 2012. Overall, the results of the 2012 wind testing showed that wind conditions would be sufficiently improved to eliminate three nearby wind hazards found in the 2008 test; note that the wind hazard location at Mariposa and Third Streets was not tested in 2012 because Mission Hall could have no effect on winds at Mariposa and Third Streets.

Blocks 33 and 34 are vacant, and existing wind speeds on Blocks 33 and 34 should be substantially higher than occur on the Mission Bay campus site west of Third Street. However, development of these blocks in accordance with the "*Design for Development Guidelines"* should improve wind conditions in the same way as Mission Bay campus site development has improved wind conditions on the campus site to date.

3 UCSF Medical Center at Mission Bay Environmental Impact Report, Certified by The Regents of the University of California, September 17, 2008, State Clearinghouse No. 2008012075.

4 City and County of San Francisco, *Final Mission Bay Subsequent Environmental Impact Report*, September 17, 1998, certified October 14, 1998, Notice of Determination filed November 3, 1998 (State Clearinghouse Number 1997092068).

Increasing the Mission Bay campus site's development capacity north of Sixteenth Street will increase the density of UCSF development there. The increased density of buildings designed in accordance with the "*Design for Development Guidelines"* would be expected to further reduce general wind speeds downwind, in the same way as discussed above and as demonstrated by improved wind conditions on the UCSF Mission Bay campus site.

In addition to buildings, landscaping that includes street trees and street furniture is planned to accompany development of the Mission Bay campus site. It is well-known that the presence of large street trees, plantings, and street furniture would improve wind conditions on sidewalks on the campus site, and further reduce wind speeds measured in the wind tests by varying amounts, with reductions expected to be in the range of 1 mph to 3 mph.

With respect to the Wind Hazard Criterion, the 2014 LRDP proposals within the 85-foot height of the *Mission Bay South Redevelopment Area Plan "Design for Development"* should improve general wind conditions on the Mission Bay campus site from the current setting by reducing the overall number of wind hazards and the overall duration of exceedences.

Although most buildings would be 85 feet or less in height, the "*Design for Development"* also allows for buildings greater than 100 feet in height. Given the current understanding of wind conditions at the Mission Bay campus site due to actual development in accordance with the *"Design for Development,"* as discussed above, wind testing of every building or any portion greater than 100 feet in height is not necessary. However, with implementation of **Mitigation Measure AES-LRDP-3** the proposed design for a building over 100 feet shall be evaluated by an expert to determine the potential to cause a wind hazard, and if such a hazard cannot be judged unlikely, the design shall be wind tunnel tested.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-3

Significance after Mitigation: Less than Significant

Impact AES-MB-6: Implementation of the 2014 LRDP at the Mission Bay campus site could substantially reduce sunlight or significantly increase shadows in public open space areas or could shadow the potential school site on Block 14. (Less than Significant)

Development proposed under the 2014 LRDP could cast shadows on nearby public open spaces in Mission Bay, namely the Mission Bay Commons and Bayfront Park. These open spaces are not under the control of the San Francisco Recreation and Park Department and therefore are not subject to the provisions of *Planning Code* Section 295. However, development under the 2014 LRDP would be designed to comply with the *Mission Bay South Redevelopment Area Plan* "*Design for Development,"* which prescribes building height limits and other design guidelines that protect the parks from shadow. The *Design for Development* states that "Shadow studies have determined that development complying with the Design Standards will reasonably limit areas of shadow on public open spaces during the active months of the year and during the most actives times of the day." No further shadow analysis is required unless a variance is sought from the Design Standards such as height, bulk, setbacks, and streetwall heights. UCSF development

would be consistent with the *Design for Development* Design Standards, so impacts of shading on public open space areas would be less than significant.

UCSF does not intend to seek a variance from the Design Standards, but if a variance were sought, the following criteria are discussed in the *Design for Development*:

> "… To reasonably limit areas of open space in continuous shadow for extended periods of time, the area of public open space in continuous shadow for a period of one hour from March to September between 10 am and 4 pm should not exceed the following percentages:
>
> | | |
> |---|---|
> | Mission Creek Park | 13% |
> | Bayfront Park | 20% |
> | Triangle Square | 17% |
> | Mission Bay Commons | 11% |

The Mission Bay Commons is defined as that one-block portion of the commons east of Third Street; shadow from development under the 2014 LRDP would not reach that open space during the criteria times quoted above.

However, the proposed structures on Blocks 15 and 16 (and the existing buildings on Block 17) would cast some shadow on the other portions of the Commons that lie north of these sites and west of Third Street. The maximum area of shadow cast on those other portions of the Commons at any of these criteria times would be less than 9% of the open space area.

Development on the East Campus is close to, and could cast shadows on the southern-most portion of Bayfront Park. However, shadowing of that part of Bayfront Park would occur only in the latter half of the last hour of these criteria times, and the largest area of shadow at that time would be roughly a few percent of the total area of the park.

Therefore, project shadow would not reach the Mission Bay Commons (the protected one-block portion of the commons east of Third Street). Project shadowing on the other portions of the Commons open spaces would be less than the 11% criterion for the Commons. Project shadowing of Bayfront Park would occur in the last hour of the criteria times, and the largest area of shadow would be an order of magnitude less than the park's criterion of 20% shadow coverage. By conforming to these design standards, the development proposed under the 2014 LRDP would remain well within the shadowing criteria established by the "*Design for Development"* and therefore would have a less than significant impact on shadowing of public open space.

Development proposed under the 2014 LRDP also would cast shadows on the potential public school site on Block 14. The "*Design for Development"* provides no guidance as to the shadow protection for the school site, but shadow that would occur during the school day would be important to the school. Shadows from development proposed on Blocks 18 and 15 under the 2014 LRDP would reach onto Block 14. Because development on Block 18 would be south of Block 14, that shadow would reach the site generally from mid-morning to early afternoon; these are the times of day when the Block 18 shadow would be relatively short, and would cover only a portion of the school site. Development of housing on Block 15, to the east of Block 14, would

cast shadow on portions of the adjacent school site beginning in early morning throughout the year, with Block 15 shadow leaving Block 14 by 9:30 am in December, by 11:00 am in March, and by 10:30 am in June.

The potential use of the site as a school would require a school building and the building itself would occupy space and cast its own shadows on the site as well, in a configuration that is not now known. Determining the effect of shadow from future development under the 2014 LRDP on a potential school is speculative given that the school site configuration is unknown.

Mitigation: None required.

7.2 Air Quality

This section considers the setting and air quality impacts of implementing the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Air Quality are contained in Section 4.2 of this EIR, while the plan-level Air Quality impacts of the 2014 LRDP are described in Section 5.2. The CEQA Significance Standards presented in Section 4.2.3 are used to evaluate the potential Air Quality impacts of all proposed 2014 LRDP activities.

7.2.1 Air Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Objectionable odors.** No activities would result in objectionable odors affecting a substantial number of people. Therefore, no additional analysis of this issue is required.

7.2.2 Air Quality – Mission Bay Setting

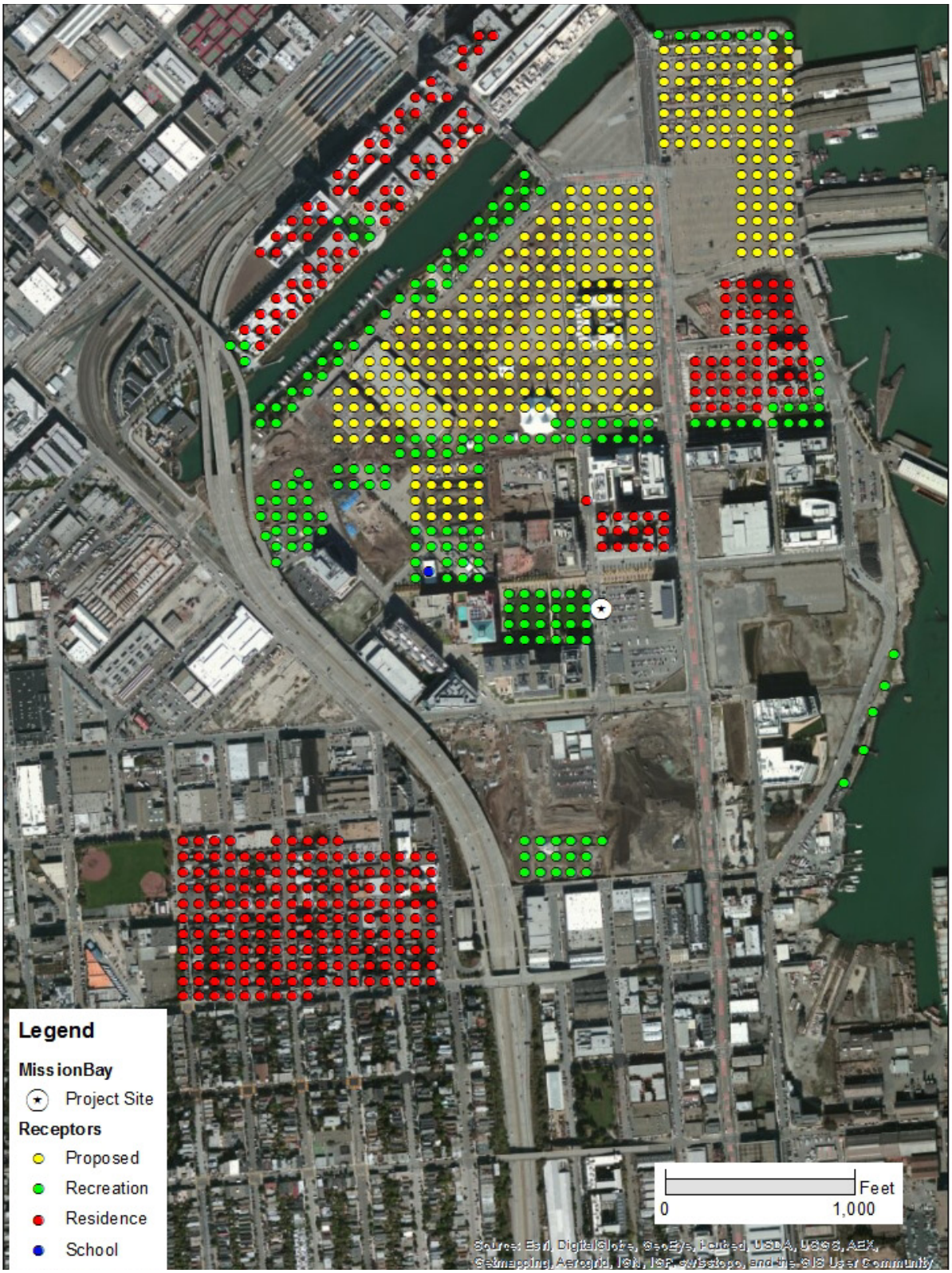
7.2.2.1 Sensitive Receptors

The sensitive receptors closest to the Mission Bay campus site are identified in **Figure 7.2-1**. On that campus site, existing sensitive receptors consist of the Mission Bay housing building on Block 20, a child care facility located on Block 18 and Koret Quad, which could be considered a recreational receptor. The hospital under construction will be a sensitive receptor when opened. Off-campus receptors consist of residential land uses approximately 300 feet northeast of the campus site, residential land uses approximately 650 feet northwest of the campus site (across Mission Creek) and residential land uses in Potrero Hill over 1,000 feet southwest of the campus site (on the west side of I-280 and south of Sixteenth Street). Additionally, there are recreational receptors (parks) located north west and northeast of the campus site.

7.2.2.2 Existing Stationary Sources of Air Pollution

The BAAQMD's inventory of permitted stationary sources of emissions identifies 18 permitted stationary emission sources present within or near the 1,000-foot zone of influence of the campus site. These permitted facilities are inventoried in **Table 7.2-1** and are primarily made up of stationary diesel engines for back-up power generators or fire water pump engines.

The Mission Bay campus site also operates fume hoods which emit TACs. These fume hood emissions do not require a permit from BAAQMD based on the operating throughput and therefore have not been assigned an existing risk value in BAAQMD databases like permitted sources. However, UCSF maintains an inventory of chemical throughput for each campus site and has prepared health risk assessments relative to fume hood emissions and other stationary source emissions on the Mission Bay campus site. A 2009 health risk assessment performed for



SOURCE: KB Environmental Sciences

UCSF Long Range Development Plan Environmental Impact Report

Figure 7.2-1

Sensitive Receptors – Mission Bay Campus Site

TABLE 7.2-1
PERMITTED STATIONARY SOURCES WITHIN THE MISSION BAY CAMPUS SITE AREA

Source #	Facility Type	Address
13160	UCSF	600 16th Street
17357	Alexandria Real Estate	1700 Owens Street
15874	J. David Gladstone Institute	1650 Owens Street
19073	Alexandria Real Estate	1500 Owens Street
19601 (now 21816)	Mission Bay Development Group	505 Mission Bay Blvd North
19906	ARE San Francisco	405 Mission Bay Blvd South
19626	Radiance HOA	325 China Basin Street
19322	SP4 Mission bay LP	500 Terry Francois Boulevard
17782	Gap Incorporated	550 Terry Francois Boulevard
14232	Channel Pump Station	455 Berry Street
18971	UCSF CPEM	654 Minnesota Street
12323	Western Printing Inc.	777 Tennessee Street
G2187	SF Petroleum Company	2840 Broadway
8253	SF Boatworks	835 China Basin Street
15335	Gianni's Auto Body	625 Mariposa Street
3239	Cemex (Plant removed)	
18749	Shorenstein Realty Svcs	409 Illinois Street
19268	Fibrogen	409 Illinois Street
		Highest Source Impact

SOURCE: BAAQMD, 2012c and ESA.

the Mission Bay campus site identified health risks from boilers, fume hoods, emergency generators, microturbines and a future cogeneration turbine proposed for the campus. Risks associated with all of these sources were estimated at 8 in one million at the maximally exposed off-site receptor and 2 in one million for the individual maximally exposed on-site receptor (ENVIRON, 2009). An assessment of existing fume hood emissions at Genentech Hall alone prepared in 2011 indicated an increased cancer risk from fume hoods to be 0.0217 in one million at the nearest off-site receptor (UCSF, 2011).

7.2.2.3 Major Roadways and Railways Contributing to Air Pollution

Third Street, Sixteenth Street and Mariposa Street are arterial streets in the existing local roadway system within the 1,000-foot zone of influence that have at least 10,000 vehicles in annual average daily traffic based on the City's SF CHAMP roadway model.[5] This traffic contributes to elevated concentrations of $PM_{2.5}$, DPM, and other contaminants emitted from motor vehicles near

[5] San Francisco Metropolitan Transportation Agency, Chained Activity Modeling Process version 4.3.0, Average Daily Traffic Volumes, provided to ESA August 2, 2012.

the street level. Interstate 280 Bridge extends in a northerly alignment in the vicinity of the Mission Bay campus site, and is approximately 400 horizontal feet west of the campus site, with the lanes at an elevation of approximately 20 feet above ground level. Aside from the surrounding major roadways, the only other areas of mobile-source activity or otherwise "non-permitted" sources (e.g., railyards, trucking distribution facilities, and high-volume fueling stations) located within 1,000 feet of the campus site would be Recology (formerly Golden Gate Disposal Company), which operates a storage yard for its collection trucks on Seventh Street approximately 900 feet west of the Mission Bay campus site. Additionally, Caltrain operates 96 daily diesel locomotive trips on its tracks approximately 400 feet west of the campus site, below I-280.

7.2.3 Air Quality – Mission Bay Impacts and Mitigation Measures

Impact AIR-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site would result in increased emissions of criteria air pollutants during construction activities. (Potentially Significant)

Construction activities under the 2014 LRDP at the campus site would result in emissions of criteria pollutants from the use of heavy-duty construction equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the campus site. In addition, fugitive dust or PM_{10} emissions would result from excavation, trenching, and other construction activities.

Construction-related emissions from 2014 LRDP proposals were calculated using the California Emissions Estimator Model (CalEEMod), assuming four discrete construction windows in five year increments. These windows are presented in **Table 7.0-3**, Proposal Construction Time Frames at Mission Bay, located in Section 7.0.4 of this chapter.

Modeling assumed construction phasing lengths based on CalEEMod default estimates, which are based on square footage for hospitals and research/office uses. All model inputs and outputs are provided in Appendix E. Emissions for the 2015-2020 construction window included equipment operations and export of 9,000 cubic yards of soil for surcharging of building pads of Blocks 15 and 18.

Table 7.2-2 presents the average annual daily construction emissions generated by the development under the 2014 LRDP at the Mission Bay campus site. As can be seen in Table 7.2-2, estimated average daily construction-related exhaust emissions would not exceed the thresholds for ROG, NOx, or particulate matter.

The BAAQMD approach to analysis of construction-related particulate impacts (other than exhaust PM) emphasizes implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions. As indicated under Impact AIR-LRDP-4 in Section 5.2 of this EIR, the BAAQMD considers construction-related fugitive dust impacts of projects to be less than significant if a suite of recommended dust-control measures are

TABLE 7.2-2
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS WITHOUT MITIGATION - MISSION BAY

Years	Estimated Emissions (lbs/day)			
	ROG	NO_x	Exhaust PM_{10}	Exhaust $PM_{2.5}$
2015-2019	16.42	38.92	1.86	1.74
2020-2024	8.65	19.70	0.86	0.81
2025-2030	7.75	14.67	0.55	0.51
2031-2035	15.72	15.76	0.36	0.35
BAAQMD Considered Construction Threshold	54	54	82	54
Potential Significant Impact?	No	No	No	No

SOURCE: ESA (Appendix E)

implemented. Therefore, BAAQMD-identified Best Management Practices for control of fugitive dust are adopted Campus-wide in Section 5.2 as **Mitigation Measure AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions.** With this measure in place the construction-related fugitive dust impacts would be less than significant.

Mitigation Measure: Implement Mitigation Measure AIR-LRDP-1

Although the criteria air pollutant emissions from demolition and construction proposals at the Mission Bay campus site would be below BAAQMD significance thresholds, **Impact AIR-LRDP-4** in Section 5.2 identifies a significant and unavoidable LRDP construction-related air quality impact resulting from emissions of criteria air pollutants when the combined construction at all campus sites is considered. In response, **Mitigation Measure AIR-LRDP-2: Architectural Coatings** and **Mitigation Measure AIR-LRDP-3: Off-Road Equipment Control Measures** were adopted Campus-wide and therefore would also apply to construction projects at the Mission Bay campus site.

Mitigation Measures: Implement Mitigation Measure AIR-LRDP-2 and AIR-LRDP-3

Significance after Mitigation: Less than Significant

Impact AIR-MB-2: Construction activities at the Mission Bay campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents. (Potentially Significant)

Construction activities under the 2014 LRDP at the Mission Bay campus site would produce DPM and $PM_{2.5}$ emissions due to combustion equipment such as loaders, backhoes, and cranes, as well as haul truck trips. These emissions result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences and schools) near the campus site. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts.

Consequently, a health risk assessment was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The health risk assessment was based on recommended methodology of the state Office of Environmental Health Hazard Assessment and adopted by BAAQMD. Detailed assumptions and methodology for the health risk assessment are included in Appendix E. For the Mission Bay campus site, the closest new residences (a total of approximately 330 receptors) would be located at Mission Bay housing within Block 15 along Mission Bay Boulevard North. Additional existing residences are located at Mission Bay housing within Block 20. One daycare is located in the immediate vicinity and approximately 200 recreational receptors (Campus Sport Field, Koret Quad, and Mission Creek Park) were included in the analysis. Nearly 840 receptors were included in the analysis, which used the annual mass construction emissions as predicted by CalEEMod and determined annual average concentrations of DPM and $PM_{2.5}$ which were then used to calculate risk values.

A summary of the health impacts related to construction under the 2014 LRDP at the Mission Bay campus site is presented in **Table 7.2-3**.

TABLE 7.2-3
CONSTRUCTION-RELATED HEALTH IMPACTS – MISSION BAY

Receptor Type	Cancer Risk (cases per million Persons)	Chronic Impact	Acute Impact	PM2.5 Concentration ($\mu g/m^3$)
New Residence (adult / child)	0.63 / 7.11	0.01	0.08	0.07
School Children	0.35	0.01	0.01	0.03
Existing Residence (adult / child)	0.73 / 8.21	0.01	0.17	0.05
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

Subsequent to the preparation of the health risk assessment, development of Blocks 33 and 34 were added to the long-term projects under the 2014 LRDP Project Description. Construction on these blocks would add incrementally to the risk values in Table 7.2-3. However, CEQA review for development of these blocks assuming a research and development land use was addressed in the *Mission Bay Subsequent EIR*. That document identified a significant impact with regard to operational TAC emissions and identified Mitigation Measure F.03 with regard to TAC emissions to reduce the impact to less than significant. Because the analysis of Blocks 33 and 34 has already undergone CEQA review, implementation of Mitigation Measure F.03 would be required of future development. This mitigation measure has been identified for development of Blocks 33 and 34 as **Mitigation Measure AIR-MB-1**.

As shown in Table 7.2-3, the maximum cancer risk for a new residence-adult and residence-child associated with the project (Mission Bay housing within Block 15) would be 0.6 and 7.1 cancer cases per million persons, respectively. The maximum cancer risk for an existing residence-adult

and residence-child (Mission Bay housing within Block 20) would be 0.7 and 8.2 cancer cases per million persons, respectively. Thus, the cancer risk due to construction activities alone is below the BAAQMD threshold of 10 cancer cases per million persons and would be less than significant. No school children receptors are located within the campus site, but a potential San Francisco Unified School District school site is located at Block 14, the northwestern most parcel of the campus site. Potential impacts to future school children receptors at this site are considered in Section 10.2, *Cumulative Impacts*.

The chronic HI would be less than 0.01 at all receptors. The chronic HI would be below the BAAQMD threshold of 1 and the impact of 2014 LRDP activities would be less than significant. The acute HI would be less than 0.2 at all receptors including recreational receptors within the Campus Sport Field, Koret Quad, and Mission Creek Park. The acute HI would be below the BAAQMD threshold of 1 and the impact of 2014 LRDP activities would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.1 $\mu g/m^3$ for the new residences associated with the 2014 LRDP, any future school on Block 14, and the existing residences. The construction-related annual $PM_{2.5}$ concentration resulting from 2014 LRDP activities is below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

> **Mitigation Measure AIR-MB-1:** Obtain written verification from BAAQMD that the facility has been issued a permit from BAAQMD, if required by law, or that permit requirements do not apply to the facility. (Modified from *Mission Bay Subsequent EIR Mitigation Measure F.03*)
>
> **Significance after Mitigation:** Less than Significant

Impact AIR-MB-3: Operations at the Mission Bay campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (Potentially Significant)

Development under the 2014 LRDP would result in an increase in criteria air pollutant and precursor emissions, including ROG, NOx, PM_{10} and $PM_{2.5}$ from a variety of emissions sources, including onsite area sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.) and mobile on-road sources. Operational emissions of criteria pollutants were estimated using the CalEEMod version 2013.2.2 emissions inventory model. All model inputs and outputs are provided in Appendix E.

One of the sources of operational emissions at the campus site would be increased vehicle emissions from additional staff, patients, visitors and residents. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the LRDP (Adavant, 2014). 2014 LRDP activities at the campus site would generate an estimated 12,175 additional daily vehicle trips during the weekday. In addition to exhaust emissions, vehicles would also generate PM_{10} and $PM_{2.5}$ from entrained road dust and tire and brake wear.

Emissions would also be generated by on-site natural gas combustion, operation of landscape maintenance equipment, and maintenance application of paint and other architectural coatings.

Table 7.2-4 presents estimated operational emissions from development under the 2014 LRDP at the Mission Bay campus site in 2035. As shown in the table, without mitigation, operational emissions of NOx, ROG, and PM_{10} would exceed the threshold levels, resulting in a significant impact. The primary contributing sources to ROG emissions would be the use of consumer products associated with over 2 million square feet of development, while for NOx emissions, the primary sources are vehicle emissions and natural gas combustion. PM_{10} emissions are primarily associated with vehicle trips.

TABLE 7.2-4
UNMITIGATED OPERATIONAL CRITERIA POLLUTANT EMISSIONS - MISSION BAY

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Mobile Sources[a]	23.14	39.20	65.38	18.32
Area Sources[a]	103.4	0.50	0.24	0.24
Natural gas combustion	3.82	34.69	2.64	2.64
Total	**130.4**	**74.39**	**68.26**	**21.20**
Regional Significance Threshold	54	54	82	54
Significant Impact?	Yes	Yes	Yes	No

a Mobile sources are motor vehicles and trucks. Area sources include landscape maintenance (equipment used for these activities such as gasoline-powered lawnmowers and blowers), maintenance application of paints and other interior and exterior surface coatings, and increased use of consumer products that result in emissions of ROG. Natural gas combustion is for space and water heating.

SOURCE: ESA, 2014 (see Appendix E).

Impact AIR-LRDP-5 identifies a significant operational air quality impact resulting from emissions of criteria air pollutants when operation at all campus sites is considered. In response, **Mitigation Measure AIR-LRDP-4: BAAQMD-Suggested Operational Measures** was adopted Campus-wide and therefore would also apply to operation of projects at the Mission Bay campus site.

Mitigation Measure: Implement Mitigation Measure AIR-LRDP-4

Significance after Mitigation: Significant and Unavoidable. Mitigation Measure AIR-LRDP-4 would not result in the 59% reduction necessary (for ROG) or 27% (for NOx) to reduce the impact to a less-than-significant level. This amount of traffic reduction exceeds the best reduction estimates for TDM programs (BAAQMD, 2012b). Assuming a conservative 12% reduction in vehicle miles travelled associated with TDM measures (CAPCOA, 2010), operational emissions of ROG at the Mission Bay campus site would be reduced to 126.8 pounds per day and emissions of NOx would be reduced to 62.68 pounds per day. Consequently, 2014 LRDP development at the campus site with implementation of feasible mitigations would still result in significant environmental effects on air quality and contribute substantially to an existing air quality violation (ozone precursors and particulate matter). Therefore, even with implementation of Mitigation Measure AIR-MB-4, this impact would remain significant and unavoidable for emissions of ROG, NOx and PM_{10}.

NOx and ROG emissions are a concern as ozone precursors. The health implications of this significant impact would result from the potential to contribute to increased violations of the air quality standards for ozone. As indicated in Table 4.2-1, state and federal standards for ozone have not been exceeded in the past five years of monitoring in San Francisco, so the degree to which project would substantially contribute to a future violation of the ozone standard would be expected to be minimal. Further, the extent to which these significant ozone precursor emissions would result in adverse health effects is not readily quantifiable on a local scale because "by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards" (BAAQMD, 2011).

Impact AIR-MB-4: Operations at the Mission Bay campus site under the 2014 LRDP would expose persons (new receptors) to substantial levels of TACs, which may lead to adverse health effects. (Potentially Significant)

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of health risk impacts for new receptors resulting from the 2014 LRDP. The method for determining health risk requires the review of health risk from permitted sources and major roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source), then adding the project impacts to determine whether the health risk thresholds for new receptors are exceeded.

BAAQMD has developed a geo-referenced database of permitted emissions sources throughout the San Francisco Bay Area, and has developed the Stationary Source Risk & Hazard Analysis Tool (dated May 2011) for estimating cumulative health risks from permitted sources. Eight permitted sources are located within 1,000 feet of new residences associated with the 2014 LRDP and included in the cumulative analysis.

BAAQMD has also developed a geo-referenced database of major roadways throughout the San Francisco Bay Area and has developed the *Highway Screening Analysis Tool* (dated May 2011) for estimating cumulative health risks from roadways.

Fume hood emissions also contribute to exposure to TACs. As discussed in the setting section, these fume hood emissions do not require a permit from BAAQMD based on the operating throughput and therefore have not been assigned an existing risk value in BAAQMD databases like permitted sources. An assessment of existing fume hood emissions at Genentech Hall prepared in 2011 indicated an increased cancer risk from fume hoods to be 0.0217 in one million at the nearest off-site receptor (UCSF, 2011).

A summary of the cumulative health impacts for the new residences under the 2014 LRDP Mission Bay campus site is found in **Table 7.2-5**.

The health impacts from nearby sources in the area would have an impact on new receptors associated with the 2014 LRDP at the Mission Bay campus site, including new housing on Block 15 and relocated child care facilities. The highest cancer risk from any of the nearby sources would

TABLE 7.2-5
HEALTH IMPACTS FOR MAXIMALLY EXPOSED NEW RECEPTORS - MISSION BAY

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Hazard Index	PM2.5 Concentration ($\mu g/m^3$)
13160	UCSF/Mission Bay[a]	600 16th Street	2.89	<0.01	0.01
17357	Alexandrea Real Estate	1700 Owens Street	3.26	<0.01	<0.01
15874	David Gladstone	1650 Owens Street	0.54	<0.01	0.02
19073	Alexandrea Real Estate	1500 Owens Street	1.11	0.01	<0.01
		Fume Hood Emissions	0.02	<0.01	<0.01
		Caltrain	14.3	0.01	0.02
		I-280	5.32	0.01	0.05
		4th Street	0.34	<0.01	0.01
		7th Street	0.29	<0.01	0.01
		16th Street	0.39	<0.01	0.01
		Proposed LRDP construction and traffic (adult/child)	0.65/7.13	0.01	0.07
		Highest Single Source Impact	14.3	0.01	0.07
		BAAQMD Significance Criteria (new receptor)	10	1	0.3
		Potentially Significant Impact?	Yes	No	No

[a] UCSF risks presented here were calculated using data provided by BAAQMD in response to a stationary source inquiry form request and their risk and hazard emission screening calculator at an approximated 800 foot distance of Genentech Hall from Block 15.

SOURCE: KB Environmental Sciences, Inc., 2014; BAAQMD, 2014.

be 14.3 persons per million from operations of Caltrain. This cancer risk value declines negligibly with receptor height (14.0 in one million at 20 feet and 13.6 in one million at 30 feet). Thus, the cancer risk for new receptors exceed the BAAQMD threshold of 10 per million and would be significant. Diesel locomotives used by Caltrain are predicted to be transitioned to electric-powered locomotives by 2025, at which point the increased cancer risk values would drop to zero. Notwithstanding this predicted improvement, **Mitigation Measure AIR-MB-4** is identified to reduce DPM exposure at the proposed housing and child care at Block 15 to a less than significant level.

The highest hazard index from other nearby sources would be less than 0.1; well below the BAAQMD threshold of 1 and the impact of the proposed residences at the campus site would be less than significant. The highest annual $PM_{2.5}$ concentrations would be 0.1 $\mu g/m^3$. This $PM_{2.5}$ concentration at new residences would be below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation Measure AIR-MB-4: Particulate Filtration Systems for Block 15 Housing and Child Care.

Air Filtration and Ventilation Requirements for Sensitive Land Uses. As part of the building design, UCSF shall include a ventilation plan for the proposed housing and day care building. The ventilation plan shall show that the building ventilation system removes at least 80% of the outdoor $PM_{2.5}$ concentrations from habitable areas and be designed by

an engineer certified by ASHRAE, who shall provide a written report documenting that the system meets the 80% performance standard and offers the best available technology to minimize outdoor to indoor transmission of $PM_{2.5}$.

Maintenance Plan. UCSF shall prepare a plan that ensures ongoing maintenance for the ventilation and filtration systems.

Significance after Mitigation: Less than Significant

Impact AIR-MB-5: Operations at the Mission Bay campus site under the 2014 LRDP would cumulatively expose persons (existing and new receptors) to substantial levels of TACs, which may lead to adverse health effects. (Less than Significant)

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of cumulative health risk impacts for new projects. The method for determining health risk requires reviewing health risks from permitted sources and major roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source), then adding the project impacts to determine whether the cumulative health risk thresholds are exceeded.

Development under the 2014 LRDP would also result in an increase in TACs from boilers, fume hoods, emergency generators, microturbines and a future cogeneration turbine proposed for the campus. A health risk assessment performed for the Mission Bay campus site identified health risks associated with all of these sources which were estimated at 8 in one million at the maximally exposed off-site receptor and 2 in one million for the individual maximally exposed on-site receptor (ENVIRON, 2009).

A summary of the cumulative health impacts for the existing residences for the Mission Bay campus site are found in **Table 7.2-6**.

The health impacts from the 2014 LRDP construction and operations plus other sources (permitted sources and roadways) in the campus site would have a cumulative impact on nearby receptors. The maximum cumulative cancer risk for existing residence would be 14.9 and 22.4 persons per million for residence-adult and residence child, respectively. Non-residential receptors such as the recreational users of the proposed sports fields would have a lesser impact due to reduced exposure durations compared to residential receptors, which conservatively assume a 70 year exposure. Thus, the cumulative cancer risk is below the BAAQMD threshold of 100 per million and would be less than significant.

The cumulative HI would be less than 0.1. The HI would be well below the BAAQMD threshold of 10 and the impact of the 2014 LRDP would be less than significant. The maximum cumulative annual $PM_{2.5}$ concentrations would be 0.2 $\mu g/m^3$. The cumulative annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.8 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

TABLE 7.2-6
CUMULATIVE HEALTH IMPACTS - MISSION BAY

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Chronic Hazard Index	PM2.5 Concentration ($\mu g/m^3$)
13160	UCSF/Mission Bay	600 16th Street	**	**	**
17357	Alexandria Real Estate	1700 Owens Street	3.26	<0.01	<0.01
15874	David Gladstone	1650 Owens Street	0.54	<0.01	0.02
19073	Alexandria Real Estate	1500 Owens Street	1.11	0.01	<0.01
		Caltrain	14.3	0.01	0.02
		I-280	5.32	0.01	0.05
		4th Street	0.34	<0.01	0.01
		7th Street	0.29	<0.01	0.01
		16th Street	0.39	<0.01	0.01
		UCSF Generators, Fume Hoods, turbines and boilers under the LRDP	8/2	0.01	0.01
		Proposed LRDP Construction and Vehicle Trips (adult / child)	0.73 / 8.21	0.01	0.07
		Grand Total (adult / child)	**34.3 / 35.8**	**0.05**	**0.2**
		BAAQMD Cumulative Significance Criteria	100	10	0.8
		Significant Cumulative Impact?	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014; ENVIRON 2009.
** These existing sources are included in the 2009 HRA values that analyzed all campus wide stationary source emissions under the 2008 LRDP Update.

LRDP Variant Conditions

Under the LRDP Variant, the Mission Bay campus site would generate slightly more vehicle trips than under the 2014 LRDP. Approximately 2,950 new vehicle trips would be generated during the AM peak hour and approximately 2,450 additional vehicles at the campus site during the PM peak hour. These represent increases of approximately 2% in the total number of vehicles compared to the 2014 LRDP during both the AM and PM peak hours.

With an overall 2% increase in daily trip generation, this Variant would increase operational mobile criteria air pollutant emissions by approximately 2% (0.4 pounds per day of ROG, 0.78 pounds per day of NOx, 1.31 pounds per day of PM_{10} and 0.37 pounds per day of $PM_{2.5}$). Daily emissions of ROG and NOx from operations at Mission Bay would still exceed significance thresholds and daily emissions of PM_{10} and $PM_{2.5}$ would remain below significance thresholds which would be the same impact conclusion as under the 2014 LRDP. Consequently, the LRDP Variant would have the similar operational air quality impacts as Mission Bay under the 2014 LRDP. Emissions from the LRDP Variant would also marginally increase cancer risk and hazard levels presented in Table 7.2-5 and 7.2-6. However, similar to criteria pollutant impacts, this variant would have the similar operational cancer risk and hazard impacts as Mission Bay under the 2014 LRDP.

Considering the additional contributions of the LRDP Variant in the context of the LRDP as a whole (Chapter 5), the additional emissions from the LRDP Variant would result in marginal increases of pollutants to those presented in Table 5-4. Daily emissions of ROG and NOx from operations at Mission Bay would still exceed significance thresholds and daily emissions of PM_{10} and $PM_{2.5}$ would remain below significance thresholds and would be the same impact as under the 2014 LRDP.

7.2.4 References

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California Air Resources Board (CARB), 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April 2005.

7.3 Biological Resources

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Biological Resources are contained in Section 4.3 of this EIR. The CEQA Significance Standards presented in Section 4.3.3 are used to evaluate the potential impacts to biological resources of all proposed 2014 LRDP activities.

After evaluation of the 2014 LRDP proposals at the Mission Bay campus site, the Initial Study concluded that all activities would result in no impact or less-than-significant impacts regarding biological resources issues. Therefore, no additional analysis is required.

7.4 Cultural Resources

This section considers the setting and cultural resources impacts of implementation of the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Cultural Resources are contained in Section 4.4 of this EIR. The CEQA Significance Standards presented in Section 4.4.3 are used to evaluate the potential impacts to cultural resources of all proposed 2014 LRDP activities.

7.4.1 Cultural Resources Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Historical resources.** No activities would result in an adverse effect on historical resources. Therefore, no additional analysis of this issue is required.

7.4.2 Cultural Resources – Mission Bay Setting

The Mission Bay area of San Francisco (approximately 300 acres on the east side of the City) once consisted of open bay and tidal marshes. Mission Bay was filled in the late 19th and early 20th centuries to provide additional land area to be used primarily for industrial expansion. Most of the area was owned by the Southern Pacific Railroad and is currently being redeveloped into a mixed-used community. The area once consisted of industrial and commercial buildings, warehouses, construction sites, and vacant parcels, but it is undergoing transition to a mixed-used community, which includes the UCSF Mission Bay campus site. A cultural resource evaluation prepared for the *Mission Bay Final EIR* (1990), the *Subsequent EIR* (1998), and the UCSF *LRDP Amendment #2* (2005) identifies three historic structures within Mission Bay: Fire Station 30, the Lefty O'Doul Bridge, and the Peter Maloney Bridge. None of these resources is within or near the campus site.

No recorded archaeological sites dating from the Prehistoric (2500 BC to AD 1500) or Protohistoric (1500s to 1700s) periods are located within the area potentially affected by construction proposed under the 2014 LRDP. The nearest recorded resources are about 1,500 feet away and have been identified as the southern tip of Steamboat Point, just south of Townsend and Third Streets, and the northern point of San Quentin, north of Mariposa Street, between Pennsylvania Avenue and Terry A. Francis Blvd. The Wing Lee Laundry Site, located on King Street between Third and Fourth Streets, is also about a half mile north of the Mission Bay campus site. There is no archival evidence that cultural resources are present at the Mission Bay campus site, and the potential for discovery is low.

7.4.3 Cultural Resources – Mission Bay Impacts and Mitigation Measures

Impact CUL-MB-1: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to archaeological resources. (Potentially Significant)

Development proposals under the 2014 LRDP would occur on Blocks 15, 16, 18, 23, 25, 33, 34 and on the site of the Medical Center at Mission Bay (cancer outpatient building and Phase 2). These blocks are either undeveloped or contain existing development completed within the last 10 years. Due to the relatively recent age of the buildings on the subject blocks and surrounding areas, no historic resources exist on these development sites or in the immediate vicinity.

Previous studies and archival research conducted for the Mission Bay campus site has not identified archaeological resources at the campus site (UCSF, 2005). Development to date on the UCSF Mission Bay North and South campuses has not resulted in the discovery of any significant archaeological resources. Archaeological sites are generally located near watercourses or water bodies. However, the Mission Bay area has been substantially altered over time, including the large amount of fill added along the shoreline; therefore, the likelihood of discovering archaeological resources is low.

In the unlikely event that archaeological artifacts are discovered during construction (including grading, excavation and other earthmoving activities), **Mitigation Measure CUL-LRDP-3** would be implemented to reduce the impact to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-3

Significance after Mitigation: Less than Significant

Impact CUL-MB-2: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to paleontological resources. (Potentially Significant)

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. In general, older sedimentary rocks (more than 10,000 years old) are considered most likely to yield vertebrate fossils of scientific interest. Review of geological maps and previous analysis suggests that there no unique paleontological resources or unique geologic features at the Mission Bay campus site, which is underlain by dune sands. In the event that paleontological resources are uncovered during the course of construction, implementation of **Mitigation Measure CUL-LRDP-4** would reduce impacts to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-4

Significance after Mitigation: Less than Significant

Impact CUL-MB-3: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to human remains. (Potentially Significant)

There are no known human remains, including those interred outside of formal cemeteries located at the Mission Bay campus site. In the event of an accidental discovery or recognition of human remains during project excavation and construction, **Mitigation Measure CUL-LRDP-5** would be implemented to reduce the impact to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-5

Significance after Mitigation: Less than Significant

7.4.4 References

UCSF, *Long Range Development Plan Amendment #2 – Hospital Replacement*, March 17, 2005.

7.5 Geology, Soils and Seismicity

This section considers the setting and geology, soils and seismicity impacts of implementation of the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Geology, Soils and Seismicity are contained in Section 4.5 of this EIR. The CEQA Significance Standards presented in Section 4.5.3 are used to evaluate the potential Geology, Soils and Seismicity impacts of all proposed 2014 LRDP activities.

Those impacts that are specific to the implementation of the 2014 LRDP at the Mission Bay campus site are discussed below.

7.5.1 Geology, Soils and Seismicity Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Landslides.** No activities would result in adverse effect from landslides. Therefore, no additional analysis of this issue is required.
- **Expansive soils.** No activities would be located on expansive soils. Therefore, no additional analysis of this issue is required.
- **Soils and wastewater disposal.** No activities would result in the installation of septic tanks or alternative wastewater disposal systems. Therefore, no additional analysis of this issue is required.
- **Structural hazards.** No activities would result in exposure to structural hazards in an existing building. Therefore, no additional analysis of this issue is required.

7.5.2 Geology, Soils and Seismicity – Mission Bay Setting

The Mission Bay campus site is relatively flat with a ground elevation of approximately 10 to 25 feet above mean sea level. The Mission Bay campus site is an artificially filled former tidal inlet containing varying thicknesses of non-engineered fill, Bay Mud, clay, and sand overlying sandstone bedrock. The fill is irregularly distributed across the campus site and is widely variable in its density, compaction, and corrosivity characteristics. Several feet of total and differential settlement have occurred in the 150 years since filling began. Depending on the season, groundwater is encountered at depths ranging from 5 to 9 feet below ground surface (Harding, 2001).

Numerous geotechnical investigations have been completed in the Mission Bay area, and have identified potential seismic hazards, including ground shaking, ground failure due to liquefaction, ground lurching or lateral spreading, and seismically induced settlement. The investigations found little settlement in Mission Bay immediately after the 1989 Loma Prieta earthquake. The

investigations concluded that these hazards would be reduced to "low" with the use of appropriate foundation and structural design elements (e.g., deep foundation systems such as pile supported foundations) in accordance with building code requirements (Harding, 2001).

A program to surcharge the land to compact the underlying fill was also recommended from earlier geotechnical investigations and has been underway for the past 10 years. The Mission Bay campus site is within a California Geologic Survey (CGS) Seismic Hazard Zone and the City of San Francisco's Special Geologic Study Area for potential ground failure hazards caused by liquefaction and would therefore be subject to Special Publication 117A (CGS, 2003). Special Publication 117A includes protocols for the identification of potentially liquefiable materials as well as appropriate requirements to minimize potential damage from liquefaction (e.g., use of edge containment structures, removal of liquefiable soils, dynamic consolidation, injection grouting, etc.).

7.5.3 Geology, Soils and Seismicity – Mission Bay Impacts and Mitigation Measures

2014 LRDP proposals at the Mission Bay campus consist of construction of new facilities, including housing on Block 15, research, office, and clinical uses on the remaining blocks.

As discussed in Section 5.5, the general Geology, Soils and Seismicity impacts that could occur as a result of implementing the 2014 LRDP, are:

> **Impact GEO-LRDP-1: Implementation of the 2014 LRDP could result in adverse effects to people and structures resulting from geologic hazards.**
>
> **Impact GEO-LRDP-2: Implementation of the 2014 LRDP could result in substantial soil erosion or loss of topsoil.**

The campus site is located in a seismically active region that could experience at least one major earthquake (Richter magnitude (M) 6.7 or higher) over the next 30 years. Strong ground shaking at the campus site could occur during a moderate to severe earthquake occurring on one of the active Bay Area faults near to the campus site. In general, the Mission Bay campus site contains conditions that present a number of potential geologic hazards including groundshaking, liquefaction, settlement, and differential settlement. If not addressed appropriately in site preparation and design, the presence of heterogeneous fill materials including building debris, soft compressible Bay Mud, and loose saturated soils would make new structures susceptible to damage from dynamic (earthquake) or static (slow compression of Bay Muds) forces. However, these hazards are commonplace in areas throughout the Bay margins and, as stated above, current code requirements and design practices such as the use of deep foundation systems are effective in reducing potential impacts. Therefore, with construction and design in accordance with the most recent version of the California Building Code, CGS Special Publication 117A, and the *UC Seismic Safety Policy* would reduce potential geotechnical hazards to less than significant levels.

Construction activities could also include disturbance to underlying soils. If not managed appropriately, these soils could be susceptible to the effects of wind and water erosion. However, all construction activities would be required to adhere to best management practices that include erosion control measures.

All new construction would be required to adhere to the most recent version of the California Building Code or local code if more stringent and CGS Special Publication 117A, which require structures to include measures to minimize potential damage from seismic hazards. During construction, implementation of best management practices would reduce potential for erosion.

Housing is also subject to building code requirements to address the potential geotechnical and seismic hazards that are present at the Mission Bay campus site. As noted above, the Mission Bay campus site includes underlying materials that present a number of geotechnical challenges which can be overcome through site preparation (e.g., replacement of unengineered fill with engineered fill, compaction of soft soils through surcharging, dynamic compaction etc.) and building foundation design (e.g., deep foundation systems) in accordance with the most stringent of current state or local building code requirements. During construction, implementation of best management practices would reduce potential for erosion.

Mitigation: None required.

7.5.4 References

Harding ESE, *Geotechnical evaluation : land acquisition due diligence review : proposed UCSF Mission Bay South Hospital : San Francisco, California***,** December 17, 2001.

University of California, *Seismic Safety Policy*, available at http://ucop.edu/real-estate-services/resources/seismic-safety-policy/index.html.

7.6 Greenhouse Gas Emissions

This section considers the setting and greenhouse gas emissions impacts of implementing the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of greenhouse gas emissions are contained in Section 4.6 of this EIR. The CEQA Significance Standards presented in Section 4.6.3 are used to evaluate the potential greenhouse gas emissions impacts of all proposed 2014 LRDP activities.

7.6.1 Greenhouse Gas Emissions Issues Adequately Addressed in the Initial Study

The Initial Study concluded that proposed 2014 LRDP activities at the Mission Bay campus site and their potential effects on greenhouse gas emissions would be evaluated in the EIR.

7.6.2 Greenhouse Gas Emissions – Mission Bay Setting

Greenhouse gas (GHG) emissions are generated at the Mission Bay campus site from a variety of sources. These include motor vehicle trips generated by uses on the campus site, electrical and natural gas usage including, water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation.

7.6.3 Greenhouse Gas Emissions – Mission Bay Impacts and Mitigation Measures

Impact GHG-MB-1: Development at the Mission Bay campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (Potentially Significant)

Construction-related GHG emissions from 2014 LRDP proposals at the Mission Bay campus site were calculated using the California Emissions Estimator Model (CalEEMod), assuming four discrete construction windows in five- to six-year increments. These windows are presented in **Table 7.0-3**, Proposal Construction Time Frames at Mission Bay, located in Section 7.0.4 of this chapter.

Modeling assumed construction phasing lengths based on CalEEMod default estimates which are based on square footage for hospitals and research/office uses. All model inputs and outputs are provided in Appendix E.

Construction-related GHG emissions for the peak year of each window of the anticipated construction period are presented in **Table 7.6-1**. Estimated peak emissions are 1,429 metric tons of carbon dioxide equivalent greenhouse gases[6] (CO_2e) in 2016, 862 metric tons CO_2e in 2021, 804 metric tons CO_2e in 2026 and 1,496 metric tons CO_2e in 2032. As discussed earlier, BAAQMD has

6 CO_2e in all calculations of project impact includes CO_2, CH_4 and N_2O.

TABLE 7.6-1
PEAK ANNUAL CONSTRUCTION-RELATED GHG EMISSIONS
WITHOUT MITIGATION - MISSION BAY

Construction Window	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
2015-2020	1,426	<1	<1	1,429
2020-2025	860	<1	<1	862
2025-2030	802	<1	<1	804
2030-2035	1,495	<1	<1	1,496

Project CO_2 emissions estimates were made using CalEEMod v.2013.2.

not established a quantitative threshold relative to construction-related emissions. In lieu of any proposed or adopted thresholds relative to construction-related emissions, these emissions are considered significant unless best management practices are implemented to reduce GHG emissions during construction, as feasible. Consequently, **Mitigation Measure GHG-LRDP-1** is identified to ensure implementation of best management practices during construction.

Mitigation Measure: Implement Mitigation Measure GHG-LRDP-1

Significance after Mitigation: Less than Significant. Implementation of Mitigation Measure GHG-LRDP-1 would ensure that UCSF and its contractors employ feasible, effective measures to reduce GHG emissions during construction activities. This mitigation measure would therefore reduce this potential impact to less than significant.

Impact GHG-MB-2: Development at the Mission Bay campus site under the 2014 LRDP would result in an increase in operational GHG emissions. (Less than Significant)

Area, Energy, and Indirect Sources

Operational GHG emissions associated with development at the Mission Bay campus site under the 2014 LRDP would result from electrical and natural gas usage, water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the campus site is generated by the electrical supplier, PG&E. GHG emissions from natural gas are direct emissions resulting from on-site combustion for heating and other purposes. GHG emissions from water and wastewater transport are indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste-related emissions are generated when the increased waste generated by new development is disposed in a landfill where it decomposes, producing methane gas.[7]

[7] Methane (CH_4) from decomposition of municipal solid waste deposited in landfills is counted as an anthropogenic (human-produced) GHG. (USEPA, 2006).

GHG emissions from electrical usage, natural gas combustion, mobile transportation, water and wastewater conveyance, and solid waste were estimated using the CalEEMod model, and are presented in **Table 7.6-2**. A default GHG emissions factor for PG&E was adjusted to reflect future reductions envisioned by PG&E (PG&E, 2013) GHG emission factor of 290 pounds per megawatt hour was assumed. Electrical and natural gas emissions also assume compliance with UCSF policy to achieve a 20% energy reduction beyond Title 24 requirements for all new buildings. Energy use (electrical and natural gas) represents approximately 41% of estimated operational GHG emissions and solid waste generation represents approximately 19%. The relatively high percentage of emissions from energy is partially the result of the annual electrical energy use factor assumed by CalEEMod for hospital land uses (6.78 kWh/yr per square foot for Title 24 electricity and 5.52 kWh/yr per square foot for non-Title 24 electricity).

TABLE 7.6-2
ANNUAL OPERATIONAL GHG EMISSIONS
WITHOUT MITIGATION - MISSION BAY

Emission Source	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
Area Sources	6	<1	<1	7
Energy Sources	10,055	<1	<1	10,127
Mobile Sources	8,158	<1	<1	8,163
Solid Waste	2,091	124	<1	4,687
Water and Wastewater	999	31	<1	1,881
Total	**2,392**	**155**	**<1**	**24,865**

NOTE: Columns may not total precisely due to rounding. Rows may not total precisely due to differences in global warming potential.

Mobile Emission Sources

One of the sources of operational emissions would be increased vehicle emissions from travel by additional staff, patients, visitors and residents. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the LRDP (Adavant, 2014). Development under the 2014 LRDP at the campus site would generate an estimated 12,175 additional daily vehicle trips. GHG emissions from motor vehicle sources were calculated using the CalEEMod. Table 7.6-2 presents the incremental mobile source GHG emissions associated with the development under the 2014 LRDP at the Mission Bay campus site, which represents approximately 33% of the total operational GHG emissions.

As shown in Table 7.6-2, the sum of both direct and indirect GHG emissions resulting from operations under the 2014 LRDP would result in an estimated 24,865 metric tons per year of CO_2e. Applying a service population of 5,633 (new faculty and staff) results in emissions of approximately 4.4 metric tons per year of CO_2e/SP. This is below the service population threshold of 4.6 metric tons per year of CO_2e/SP and operational GHG emissions associated with development under the 2014 LRDP at the Mission Bay campus site would therefore be a less than significant impact.

Mitigation: None required.

LRDP Variant Conditions

Under the LRDP Variant, the Mission Bay campus site would generate slightly more vehicle trips than under the 2014 LRDP. Approximately 2,950 new vehicle trips would be generated during the AM peak hour and approximately 2,450 additional vehicles at the campus site during the PM peak hour. These represent increases of approximately 2% in the total number of vehicles compared to the 2014 LRDP during both the AM and PM peak hours.

With an overall 2% increase in daily trip generation, this Variant would increase operational mobile GHG emissions by approximately 2% (approximately 163 metric tons of CO_2e per year). Annual GHG emissions from operations at Mission Bay would still be 4.4 metric tons of CO_2e per service population as it would be under the 2014 LRDP and would be the same impact as under the 2014 LRDP. Consequently, the LRDP Variant would have similar operational GHG impacts at the Mission Bay campus site under the 2014 LRDP.

7.6.4 References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report, CEQA Thresholds of Significance Air Quality Guidelines, October 2009. Available at www.baaqmd.gov.

BAAQMD, 2012. CEQA Air Quality Guidelines. Adopted June 2011, updated May 2012. Available at www.baaqmd.gov.

Pacific Gas & Electric Company (PG&E), Greenhouse Gas Emission Factors: Guidance for PG&E Customers, April, 2013.

7.7 Hazards and Hazardous Materials

This section considers the setting and hazards and hazardous materials impacts at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Hazards and Hazardous Materials are contained in Section 4.7 of this EIR. The CEQA Significance Standards presented in Section 4.7.3 are used to evaluate the potential hazards and hazardous materials impacts of all proposed 2014 LRDP activities.

7.7.1 Hazards and Hazardous Materials Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Safety hazards from airport operations.** No activities would result in safety hazards resulting from proximity to public airports. Therefore, no additional analysis of this issue is required.

- **Wildland fires.** No activities would result in exposure to wildland fires. Therefore, no additional analysis of this issue is required.

7.7.2 Hazards and Hazardous Materials – Mission Bay Setting

The Mission Bay campus site is located in a large parcel that has been subject to various periods of infill, debris disposal, and a long history of various industrial activities. The periphery of the parcel was filled by 1892 and the central region of the parcel, was filled between 1906 and 1913 which likely consisted of building rubble and debris from the 1906 San Francisco earthquake (Iris Environmental, 2009). Parts of the parcel to the west of Fifth Street were used as a former city dump between 1869 and 1895. Since 1916, land uses at Mission Bay have included a pipe yard, hay yard, garbage dock, several lumber yards, an icing platform, a City and County boiler house, a number of warehouses, a metal salvage company, and a variety of rail-related activities. There were also a variety of rail-related buildings including an incinerator, scales, material platform, carpenter shop, storehouse, blacksmith shop, electrical shop, and dryer shed.

According to a *Hazards Mitigation Program* (HMP) report that was prepared for earlier stages of development at Mission Bay, five underground storage tanks (USTs) were present at the site including one 10,000-gallon tank, one 8,000-gallon tank, two 1,000-gallon tanks, and one 550-gallon tank (Iris Environmental, 2009). The USTs were primarily used for the storage of gasoline or diesel. Another investigation report indicated that sixteen USTs were present and all were listed as "former" USTs (ENVIRON, 1998 as referenced in Iris Environmental, 2009).

According to a search of available databases from Department of Toxic Substances Control (DTSC) (Envirostor) and the State Water Resources Control Board (SWRCB) (Geotracker), there are a number of cases listed for the Mission Bay campus site and immediate surrounding area

(DTSC, 2014 and SWRCB, 2014). All of these cases located on the Mission Bay campus site have been closed indicating that no further risks to human health or the environment remain.

In 1999, as part of the preparation for the initial development of UCSF facilities at the Mission Bay campus site, an environmental Risk Management Plan (RMP) was developed under the direction of the Regional Water Quality Control Board to provide a decision framework and protocols for managing contaminants in the subsurface soil and groundwater in a manner that is protective of human health and the environment. The RMP was developed to be consistent with existing and planned future land uses including long-term phased development (Environ, 1999).

7.7.3 Hazards and Hazardous Materials – Mission Bay Impacts and Mitigation Measures

Impact HAZ-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (Potentially Significant)

Additional use of hazardous materials associated with implementation of the 2014 LRDP at the Mission Bay campus site would require adherence to regulatory requirements and existing UCSF policies that address the storage, use, and disposal of hazardous materials in a manner that limit health risks and upset and accident conditions. However, earthwork activities could also potentially encounter naturally occurring asbestos if not managed appropriately. With implementation of **Mitigation Measure HAZ-LRDP-1**, incorporation of best management practices, if warranted, would reduce potential impacts from exposure to naturally occurring asbestos to less than significant level.

Considering the past industrial uses of Mission Bay, it is also possible for volatile components of subsurface contaminants, if present, to migrate through building foundations exposing residents and visitors to potential soil vapor contamination. Previous studies have identified methane as an issue of concern at the Mission Bay campus site. Working with the RWQCB, BAAQMD, and the San Francisco Department of Public Health on a project by project basis, UCSF installs subsurface engineered control systems to address venting of volatile components of subsurface contaminants, protect public health, and ensure that maximum exposure levels for building occupants are not exceeded. Characterization and risk analysis of any subsurface contaminants would be addressed either through remediation prior to commencement of construction or through design elements such as vapor barriers that would protect future occupants from adverse health effects.

Mitigation Measure: Implement Mitigation Measures HAZ-LRDP-1

Significance after Mitigation: Less than Significant

Impact HAZ-MB-2: Implementation of the 2014 LRDP at the Mission Bay campus site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools. (Less than Significant)

There are no schools located within a quarter mile of the Mission Bay campus site although Live Oak School is located approximately 0.4 miles from the campus site. In addition, Block 14 on the Mission Bay campus site is currently reserved for a school site by the San Francisco Unified School District. In general, existing hazardous materials use for administrative support services or even research laboratory purposes at UCSF does not involve large enough quantities of hazardous materials or result in emissions that would represent potential health hazards to schools near UCSF campus sites. Regardless, the proposed plan would not result in substantive emissions and all handling of hazardous materials would occur under a continued practice of adherence to federal, state, local and UCSF policies and regulatory requirements.

Mitigation: None required.

Impact HAZ-MB-3: 2014 LRDP proposals at the Mission Bay campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 could create a significant hazard to the public. (Less than Significant)

As noted above, the entire Mission Bay campus site has a long history of industrial use and a number of environmental investigations, cleanup, and removal of USTs have occurred many of which are included in the Geotracker database. Although many of these cases have been closed indicating that no further action was required, there is still a potential to encounter previously unidentified contaminants. A Risk Management Plan (RMP) was developed for all of the *Mission Bay Redevelopment Plan* area for previous construction efforts and has been effective in reducing potential impacts as a result of past releases of hazardous materials. This document has been periodically amended by the RWQCB. As called for in the RMP, at the onset of each project, UCSF hires a qualified geotechnical/environmental consultant to do soil testing (including for sulfate and chloride content) and prepare a site-specific report identifying any necessary remediation The RMP provides construction protocols and notification procedures that would protect workers, the public, and the environment from any legacy contaminants that may be discovered during groundwater breaking activities.

Mitigation: None required.

Impact HAZ-MB-4: Implementation of the 2014 LRDP at the Mission Bay campus site would not result in a safety hazard for people residing or working in the vicinity of a private airstrip. (Less than Significant)

The existing facilities at the Mission Bay campus site will include a helicopter landing pad (helipad) which would be used for inter-facility transfers after Phase 1 of the Medical Center at Mission Bay opens in 2015. New facilities under the 2014 LRDP could potentially place new residents, visitors, or employees in proximity to safety hazards associated with this helipad.

The accident rate for medical helicopters averages approximately 1.8 fatal accidents per 100,000 flights. Using a 20 minute estimate for an average helicopter flight, this equals to approximately one fatal accident per 180,000 flights. This risk is increased where the landing site is unfamiliar to the pilot, which is more common during scene calls and would not be the case for the Mission Bay campus site. Of the 56 fatal accidents in US that involved medical helicopters (1991-2007), four occurred while landing or taking off from a hospital helipad. This rate equals approximately 1 in 2.5 million and is considered a measurable yet very small risk. None of the four fatal helicopter events caused any ground deaths to third parties, although in one accident, a hospital security guard who was helping service the helicopter was fatally injured. Moreover, based on the statistics associated with medical helicopter operations since 1991 in the United States, the observed risk to third parties has been negligible.

Statistics also reveal that helicopter accidents that cause serious injuries to third parties or substantial property damage are also extremely rare. Out of 132 incidents involving medical helicopters from 1991 to 2005,[8] none caused serious injury to a third party and one caused modest damage to a hospital building (Barnet, 2008).[9]

Based on information documenting national helicopter safety patterns provided above, it can be assumed that, while the risk of death or injury to third parties, and risk of property damage to structures near the project site is not zero, this risk is very small. The twelve million medical helicopter flights in the US since 1991 have caused no deaths to third parties in the vicinity of hospitals. Based on this and other statistics noted above, the likelihood of a third party death resulting from the operation of the proposed inter-facility transfer operation is also extremely small.

Mitigation: None required.

7.7.4 References

Barnett, Arnold, *Risk Assessment for Helicopter Operations at the University of California-San Francisco Medical Center at Mission Bay*, March, 2008.

Environ, Risk Management Plan Mission Bay Area, May 11, 1999.

State Water Resources Control Board (SWRCB), Geotracker Database, http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=San+Francisco%2C+CA, accessed February 13, 2014.

http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=Mission%20Bay%20Boulevard,%20San%20Francisco%20CA&zip=&county=&federal_superfund=true&state_response=true&voluntary

8 This statistical record was achieved in the course of approximately twelve million medical helicopter flights.
9 One medical flight hit a home after losing visibility en route, causing serious injury to three occupants. But this accident was not close to the hospital.

_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true, accessed February 13, 2014.

Iris Environmental, Updated Site History and Work Plan UCSF Neurosciences Building, Block 19A, Mission Bay Project Area, San Francisco, California, July 9, 2009.

Environ, Hazards Mitigation Program, 1998.

7.8 Hydrology and Water Quality

This section considers the setting and hydrology and water quality impacts of implementation of the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Hydrology and Water Quality are contained in Section 4.8 of this EIR. The CEQA Significance Standards presented in Section 4.8.3 are used to evaluate the potential Hydrology and Water Quality impacts of all proposed 2014 LRDP activities.

Those impacts that are specific to implementation of the 2014 LRDP at the Mission Bay campus site are discussed below.

7.8.1 Hydrology and Water Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Groundwater supplies.** No activities would result in substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. Therefore, no additional analysis of this issue is required.

7.8.2 Hydrology and Water Quality – Mission Bay Setting

7.8.2.1 Fluvial Hydrology and Stormwater Management

Historically, the Mission Bay area was part of San Francisco Bay, with the bay waters at ordinary high tide roughly being bounded by Townsend Street on the north, Eighth Street on the west, and Sixteenth Street on the south. Marshes, with intersecting sloughs, penetrated as far north as Mission Street between Seventh and Eighth streets, and Folsom Street between Fourth and Eighth streets (Sharpsteen, 1941). Mission Creek once was a navigable body of water that flowed from Mission Dolores to San Francisco Bay. In 1854 the California Legislature declared Mission Creek to be a navigable stream; although it has been filled in, it retains the designation today (Sharpsteen, 1941). The only remaining portion of Mission Creek above ground is the Mission Creek Channel that drains into China Basin.

The Mission Bay campus site does not drain to the City's combined sewer system (CSS); instead, the area has its own Small Municipal Separate Storm Sewer System (MS4). As discussed in Section 4.8, since this MS4 does not drain into one of the City's Water Treatment Plants, its Phase II NPDES General Permit requires development and adoption of a Storm Water Management Plan/Program (SWMP). When complete, the Mission Bay SWMP will minimize the discharge of pollutants into receiving waters, identify appropriate stormwater treatment practices with measurable performance criteria, and include six minimum measures to promote pollutant load reduction.

7.8.2.2 Flooding

The Federal Emergency Management Agency (FEMA) is preparing Flood Insurance Rate Maps (FIRMs) for the City and County of San Francisco (CCSF). FIRMs identify areas that are subject to inundation during a flood having a 1-percent chance of occurrence in a given year (also known as a "base flood," "100-year flood," or "1 percent annual chance flood"). FEMA refers to the floodplain as an area that is at risk from a flood of this magnitude as a Special Flood Hazard Area (SFHA). Communities use FIRMS to define planning and construction standards in flood-prone areas, and insurance companies use them to rate flood insurance policies. The Base Flood Elevations (BFEs) mapped on the FIRMs are based on the 100-year (1%) stillwater elevation (e.g. extreme high tide), as well as wave run-up processes due to locally-generated wind waves and longer-period swells from outside the Golden Gate. In the preliminary FIRM released in June 2013, portions of the Mission Bay campus site, including areas proposed for housing, are designated within the special flood hazard area (see **Figure 7.8-1**). However, this mapping does not consider UCSF's current activities that are raising ground elevations across the entire Mission Bay campus site[10] above the BFE (+10 ft NAVD88[11]) and anticipated future sea levels (see below). UCSF's ground surcharge and engineered fill placement programs at the Mission Bay campus site are raising ground elevations in areas proposed for entitlement/housing to a range of approximately +10.3 to +26.3 ft NAVD88 (Catellus, 1998). The final FIRM is scheduled to be released sometime in 2015 (FEMA, 2013B); by that time, UCSF expects that its work to raise elevations at the Mission Bay campus site will be complete, and that no areas of the campus site will be within a Special Flood Hazard Area.

7.8.2.3 Sea Level Rise

Increases in global air temperatures are causing the oceans to warm and expand and land ice to melt and run into the sea, resulting in sea level rise (SLR). The rate of SLR is projected to increase over the next hundred years, with acceleration in the rate expected to occur around mid-century. California Executive Order S-13-08, signed on November 14, 2008, specified that prior to the release of the then-in-progress Sea Level Rise Assessment Report from the National Academy of Sciences (NAS)/National Research Council (NRC), all state agencies planning construction projects in areas that are vulnerable to future sea level rise must consider a range of scenarios for 2050 and 2100 to assess project vulnerability, and, to the extent feasible, must reduce expected risks and increase resiliency with respect to sea level rise.

The NRC report, which was released in 2012, described a range of potential sea level rise values given various global CO_2 emission scenarios. The NRC report is consistent with assumptions used by the City[12]. For San Francisco Bay, the report describes an increase in the rate of sea level rise from around 0.7 mm/year measured at Alameda from 1939-2008 to an order of magnitude faster by 2100. Sea level rise rates at the Golden Gate ranged from 1.8 to 1.9 mm/year from

10 Except Blocks 33 and 34; see below.
11 North American Vertical Datum of 1988
12 San Francisco Public Utilities Commission, Capital Planning Committee, "Incorporating Sea Level Rise into Capital Planning, Overview of Draft Guidance," May 12, 2014, http://onesanfrancisco.org/wp-content/uploads/Agenda-Item-8-Seal-Level-Rise-Planning-Presentation.pdf

Mission Bay Campus Site

Zone AE, within the 100-year flood zone*

Zone X, within the 500-year flood zone

Zone VE, within the Coastal High Hazard Zone**

0 1000

Feet

** The Base Flood Elevation (BFE, or 100-year flood) for Zone AE in this area is +10 ft NAVD.*

*** Where wave heights of over 3 ft are possible.*

Note: Map does not reflect increase in site elevations on the Mission Bay campus site. Updated maps from FEMA are in progress

SOURCE: FEMA 2013

Figure 7.8-1

City of San Francisco Preliminary FIRM Mapping

June 2013

1930 to 1980. **Table 7.8-1** below presents a range of sea level rise projections[13] for the San Francisco region from the NRC report:

TABLE 7.8-1
REGIONAL SEA LEVEL RISE PROJECTIONS FOR SAN FRANCISCO FROM NRC (2012)

Year	Sea Level Rise Projection – Emissions Scenario A1B	Sea Level Rise – Range of Emissions Scenarios B1 and A1F1
2030	14.4 cm (5.7 in)	4.3 - 29.7 cm (1.7 - 11.7 in)
2050	28 cm (11.0 in)	12.3 - 60.8 cm (4.8 - 23.9 in)
2100	91.9 cm (36.2 in)	42.4 - 166.4 cm (16.7 - 65.5 in)

UCSF is utilizing surcharging and engineered fill to raise ground elevations at the Mission Bay campus site such that they will be higher than the projected mid-range and high-range (A1B) 2050 sea levels (existing sea levels + 11.0 and 23.9 inches sea level rise, respectively). The final ground elevations[14] on the Mission Bay campus site will range from approximately +10.3 to +26.3 ft NAVD88 (Catellus, 1998). The existing Mean Higher High Water (MHHW) at the campus site is approximately +5.9 ft NAVD88; 23.9 inches of sea level rise by 2100 would raise the MHHW to approximately +7.9 ft NAVD88.

7.8.2.4 Seiches and Tsunamis

Tsunamis (seismic sea waves) are long period waves that are typically caused by underwater seismic disturbances, volcanic eruptions, or submerged landslides. Tsunamis, which travel at speeds up to 700 miles per hour, are typically only 1 to 3 feet high in open ocean water but may increase in height to up to 90 feet as they reach coastal areas, so can cause potentially large amounts of damage when they reach land (URS, 2008). Low-lying coastal areas such as tidal flats, marshlands, and former Bay margins that have been artificially filled but are still at or near sea level are generally the most susceptible to tsunami inundation.

A seiche is caused by oscillation of the surface of an enclosed body of water such as the San Francisco Bay due to an earthquake or large wind event. Seiches can result in long-period waves that cause run-up or overtopping of adjacent lands, similar to tsunami run-up.

Since 1850, more than 50 tsunamis have been recorded or observed in San Francisco Bay. Nine of these tsunamis originated in Alaska and were caused by an earthquake, earthquake and landslide, or volcano and earthquake. Only one tsunami has been recorded as originating along

[13] Emissions scenario A1B assumes high economic growth, low population growth that peaks mid-century, the rapid introduction of more efficient technologies, and a balance between fossil and alternative fuels. A1F1 has the same assumptions as A1B except it is more fossil fuel-intensive. Scenario B1 assumes the same low population growth as the A1 scenarios, but a shift toward a lower-emission service and information economy and cleaner technologies. The A1FI scenario yields the highest carbon dioxide (CO_2) emissions by 2100, and the B1 scenario yields the lowest CO_2 emissions.

[14] NAVD88 is a reference datum for ground elevations. For readers more familiar with San Francisco Datum, the elevation reference often used within San Francisco, 0.0 ft NAVD88 is -11.322 ft SF Datum. Therefore a ground elevation of +10.3 ft NAVD88 would be -1.022 ft SF Datum.

the Central California coast: a 4-inch run-up that was recorded at the Presidio gauge station shortly after the 1906 earthquake. In March 2011, a tsunami originating in Japan caused a swell of approximately two feet in San Francisco Bay (TWC, 2011).

In 2009, the California Geological Survey, California Emergency Management Agency, and the Tsunami Research Center at the University of California completed the State's official tsunami inundation maps. Based on this mapping, portions of the Mission Bay campus site are located in an area identified for potential inundation in the event of a tsunami or seiche (see **Figure 7.8-2**) of up to approximately 6 feet (CCSF, 2011). The earthquake that hit Japan in March 2011 initiated a tsunami that traveled for 10 hours before reaching the California coast (TWC, 2011). When the tsunami warning was issued, coastal county offices of emergency services were able to use the state's official tsunami inundation maps to focus their response.

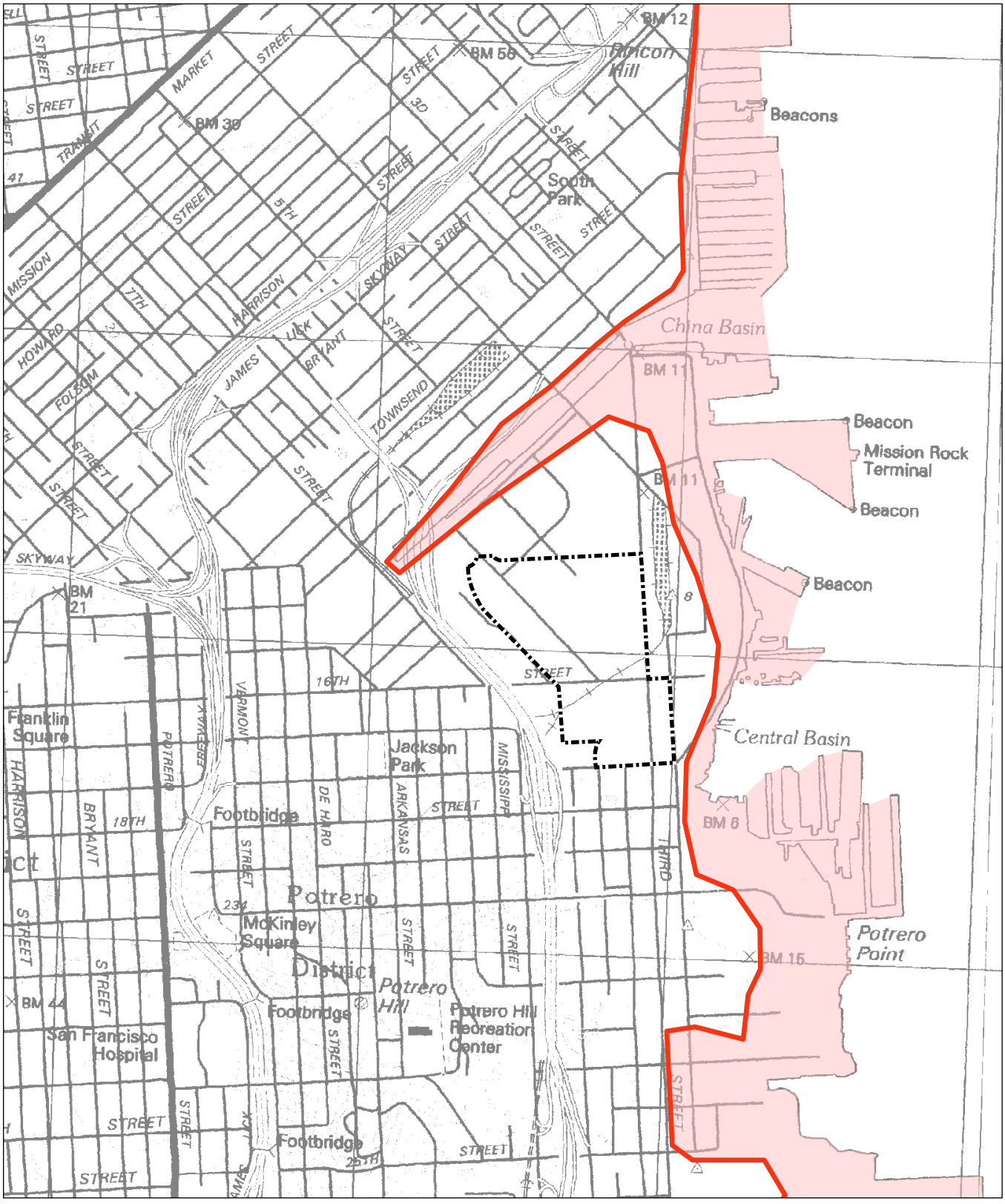
The National Oceanic and Atmospheric Administration operates the Tsunami Warning System with centers located in Hawaii and Alaska. The state National Warning System provides warnings to the West Coast (including California) and Alaska. Based on the level of threat, a Tsunami Advisory, Watch, or Warning would be issued. In San Francisco, occupants would be notified via the Outdoor Public Warning System, notification of the local media, public address systems, and the Alert San Francisco public notification system.

7.8.3 Hydrology and Water Quality – Mission Bay Impacts and Mitigation Measures

Impact HYD-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality. (Potentially Significant)

The 2014 LRDP proposals at the Mission Bay campus site consist of construction of new facilities, including housing on Block 15, research, office, and clinical uses buildings on the remaining blocks.

Proposed LRDP development at the Mission Bay campus site (including on-site staging) would include demolition, excavation, grading, and construction activities that would require temporary disturbance of surface soils and removal of existing pavement and sub-surface structures (if present). These activities would expose soil to water runoff as well as entrainment of sediment in the runoff. If dewatering would be necessary during construction, the water would likely contain suspended sediments and would require settling before being discharged to the local MS4. Sediment in runoff and deposits of soil and related debris from haul truck tires on local streets could increase the amount of sediment entering the storm drains, which could potentially clog drain inlets and reduce the flow capacity of the storm drains. The accumulation of this material could potentially result in increased localized ponding or flooding, particularly after large storms.



SOURCE: City and County of San Francisco

UCSF Long Range Development Plan Environmental Impact Report

Figure 7.8-2
Tsunami Inundation Map
For Emergency Planning

The use of construction equipment as well as the delivery, handling, and storage of construction materials and waste could contaminate stormwater that could adversely affect water quality. Potential contaminants include, but are not limited to (CSW/Stuber-Stroeh, 2011):

- Petroleum hydrocarbons and metals from stockpiled soils excavated from the site
- Fuel from storage drums
- Diesel from refueling trucks
- Oils and grease from miscellaneous heavy equipment
- Sewage from portable sanitary facilities
- Sediment from construction generated waste–piles of concrete, rock and debris
- Sediment from rock crushing activities
- Hazardous materials storage-hydraulic oil, motor oil, and lubricating fluid
- Spills and releases of hydrocarbons and related pollutants from routine light maintenance activities such as fluid topping off, and welding and repairing belts and gears of heavy equipment

Polluted stormwater runoff could violate water quality standards and/or waste discharge requirements established in the MS4 Permit as well as the NPDES General Permit for Construction.

In accordance with the Construction General Stormwater Permit, UCSF would be required to prepare and implement a SWPPP for each LRDP construction project to minimize water quality impacts during construction activities on the campus site. The SWPPPs will be consistent with previous SWPPPs that have been developed for past development of the Mission Bay campus site (e.g. UCSF Medical Center at Mission Bay, CSW/Stuber-Stroeh, 2011) as well as similar water quality protection measures in the campus site's Risk Management Plan (ENVIRON, 1999).

The SWPPPs will identify pollutant sources within the construction area and recommend site-specific BMPs regarding control of sediments in runoff and storage and use of hazardous materials to prevent discharge of pollutants into stormwater. Likely BMPs are listed in Section 5.8.

In addition, each 2014 LRDP construction project will need to obtain a water quality certification from the RWQCB for the construction activities, which would also require implementation of BMPs and specific measures for the protection of water quality during construction.

Proposed 2014 LRDP development at the Mission Bay campus site will not increase the proportion of the site that is covered in impermeable surfaces (Mission Bay Campus Master Plan, UCSF 1999). Under the MS4 Phase II General Permit (above), projects that build or replace a minimum of 2,500 square feet must drain no more water off the site after construction than before construction. According to an analysis by Freyer & Laureta (2013), the existing storm drain system at the Mission Bay campus site is adequately sized to collect and transmit runoff from a planned 5-year storm, and that the proposed increases in entitlement/housing square footage will

not increase anticipated drainage volumes from developed areas. The analysis found that the existing storm water infrastructure at the campus site was adequate and that there is no need to replace or increase the existing conveyance piping system. Therefore, the proposed LRDP actions at the Mission Bay campus site will comply with the MS4 regulations, and the resulting impacts to on-site and off-site erosion, siltation, and flooding would be less than significant.

As discussed above, new LRDP development must drain no more water off the campus site after construction than before. The Freyer & Laureta (2013) analysis found that the existing storm drain system is adequately sized to collect and transmit runoff from a 5-year storm, the proposed developments will not increase anticipated drainage volumes from developed areas, and there is no need to replace or increase the existing conveyance piping system.

Implementation of SWPPPs and associated BMPs, part of the regulatory requirements discussed in Sections 4.8 and 5.8, as well as implementation of mitigation measures previously identified in the *Mission Bay Subsequent EIR*, would reduce erosion and water quality impacts during demolition and construction activities under the 2014 LRDP at the Mission Bay campus site to less than significant.

Mitigation Measure HYD-MB-1a: Participate in the City's existing Water Pollution Prevention Program. UCSF shall facilitate implementation of the City's Water Pollution Prevention Program by providing and installing wastewater sampling ports in any building anticipated to have a potentially significant discharge of pollutants to the sanitary sewer, as determined by the Water Pollution Prevention Program of the San Francisco Public Utilities Commission's Bureau of Environmental Regulation and Management, and in locations as determined by the Water Pollution Prevention Program. (*Mission Bay Subsequent EIR Mitigation Measure K.02*).

Mitigation Measure HYD-MB-1b: UCSF shall design and construct sewer improvements such that potential flows to the City's combined sewer system from the project do not contribute to an increase in the annual overflow volume as projected by the Bayside Planning Model by providing increased storage in oversized pipes, centralized storage facilities, smaller dispersed storage facilities, or detention basins, or through other means to reduce or delay stormwater discharges to the City system. (*Mission Bay Subsequent EIR Mitigation Measure K.03*).

Mitigation Measure HYD-MB-1c: Implement alternative technologies or use other means to reduce settleable solids and floatable materials in stormwater discharges to China Basin Channel to levels equivalent to, or better than, City-treated combined sewer overflows. Such alternatives technologies could include one or more of the following: biofilter system, vortex sediment system, catch basin filters, and/or additional source control measures to remove particulates from streets and parking lots. (Modified from *Mission Bay Subsequent EIR Mitigation Measure K.04*).

Significance after Mitigation: Less than Significant

Impact HYD-MB-1: Development of proposed housing on Block 15 at the Mission Bay campus site would place housing within a 100-year flood hazard area as mapped on the preliminary (2013) FIRM map for San Francisco, potentially impede flood flows, and potentially expose people to a significant risk of loss, injury, or death associated with flooding. (Less than Significant)

As previously discussed, portions of the Mission Bay campus site that are currently proposed for housing and other types of development are designated within the preliminary 100-year Special Flood Hazard Zone and 500-year floodplain due to their low-lying elevations and proximity to a tidal flood source in Mission Creek. Ground elevations in these areas are currently being raised above Base Flood Elevation of +10 ft NAVD via surcharging and engineered fill placement. The San Francisco FIRM is in the process of being refined and updated, and UCSF expects that the final FIRM will reflect these efforts and not map any portions of the campus site within an Special Flood Hazard Area. Therefore, this impact would be less than significant.

Mitigation: None required.

Impact HYD-MB-2: Development of 2014 LRDP proposals on the Mission Bay campus site would expose people or structures to a significant risk of loss, injury or death due to inundation by seiches or tsunamis. (Less than Significant)

As previously discussed, portions of the Mission Bay campus site are within an area that could potentially be inundated by a tsunami or seiche in a "worst case [tsunami] scenario."[15] Impacts to structures would be less than significant with incorporation of specific design features such as seismic structural elements that would increase the resilience of structures to tsunamis or seiches. Impacts to people would be less than significant with implementation of the San Francisco outdoor warning system, which would notify people of an impending tsunami or seiche. In the event that an earthquake occurred that would be capable of producing a tsunami that could affect San Francisco, the National Warning System would provide warning to the City. The San Francisco Outdoor Public Warning System facility (sirens and loudspeakers, tested each Tuesday at 12:00 noon) at UCSF in Mission Bay, would be initiated that would sound an alarm alerting the public to tune into local TV, cable TV, or radio stations, which would carry instructions for appropriate actions to be taken as part of the Emergency Alert System. Police would also canvas the neighborhoods sounding sirens and bullhorns, as well as knocking on doors as needed, to provide emergency instructions. Evacuation centers would be set up if required. The advance warning system would allow for evacuation of people prior to a tsunami or seiche and would provide a high level of protection to public safety.

Mitigation: None required

[15] As defined by the San Francisco Modeling of Tsunami Effects at Marine Oil Terminals (SF MOT) study developed by Borrero et al. in 2006.

Impact HYD-MB-3: Development of 2014 LRDP proposals on the Mission Bay campus site would expose people or structures to an increased risk of loss, injury or death due to flooding from sea level rise. (Less than Significant)

As previously discussed, portions of the Mission Bay area are potentially vulnerable to inundation from sea level rise, even if higher estimates of sea level rise (e.g. the higher range 2050 estimates by the NRC) are validated over time.

While various state and local guidelines exist for planning for and anticipating sea level rise, there are currently no legally enforceable engineering or design standards that can be applied to proposed development in vulnerable areas aside from those that are based on existing (i.e., without sea level rise) conditions (e.g. the City's Floodplain Management Ordinance). In addition, there exists considerable uncertainty among planners and engineers about how to reconcile uncertainty in anticipated rates of sea level rise with the typical horizons for capital improvement projects and long-range development plans such as the 2014 LRDP.

The University uses science to guide decisions, and accordingly, it has decided to address this uncertainty by raising ground elevations in undeveloped/under construction portions of the campus site such that post-grading elevations across the campus site will range from approximately +10.3 to +26.3 ft NAVD88. This will raise ground elevations at the campus site above the projected MHHW in 2050, assuming that future sea levels are consistent with the mid-range projections described in the 2012 NRC report (and established as the most recent sea level rise guidance by the state).

Low-lying areas of the campus site, or areas adjacent to the campus site, could still be vulnerable to flooding due to storm surge, king tides, and other forcing factors that could raise water levels well above MHHW. In addition, higher than expected sea level rise could drive increases in local groundwater elevations, which could affect the performance of flood-management infrastructure such as storm drains.

UCSF will continue to monitor the situation, and if future sea levels are higher than expected such that the Mission Bay campus site is vulnerable to sea level rise-induced flooding, it will propose projects to protect people or structures from sea level rise at the Mission Bay campus site.

7.8.4 References

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7.9 Land Use and Planning

This section considers the setting and land use and planning impacts of implementation of the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Land Use are contained in Section 4.9 of this EIR. The CEQA Significance Standards presented in Section 4.9.3 are used to evaluate the potential land use impacts of all proposed 2014 LRDP activities.

7.9.1 Land Use and Planning Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Physically divide an established community.** No activities would physically divide an established community. Therefore, no additional analysis of this issue is required.

- **Habitat conservation plan.** No activities would result in a conflict with any applicable habitat conservation plan. Therefore, no additional analysis of this issue is required.

7.9.2 Land Use and Planning – Mission Bay Setting

The Mission Bay campus site is generally bounded by Mission Bay Boulevard South to the north, Owens Street to the west, Mariposa Street to the south and Third Street to the east. The campus site is within the 303-acre Mission Bay Redevelopment Area in the Mission Bay neighborhood north of the Potrero Hill and Dogpatch neighborhoods. The campus site includes the original 42 acres north of Sixteenth Street (North Campus) and 14.4 acres south of Sixteenth Street (South Campus) subsequently acquired for the Medical Center at Mission Bay. The North Campus includes six research buildings, a campus community center and 430 units of housing in four separate buildings. Mission Hall, a faculty office building, is currently under construction at the northeast corner of Fourth and Sixteenth Streets. Phase 1 of the Medical Center at Mission Bay is currently under construction on the South Campus and will open in 2015. Phase 1 includes 289-bed hospital, medical building and energy center. Over 1,000 parking spaces will be provided in a surface lot and existing garage. UCSF is in advanced discussions to acquire Mission Bay Blocks 33 and 34, a 3.83-acre parcel directly across Third Street from the South Campus. UCSF hopes to complete the acquisition in the summer of 2014. Under the 2014 LRDP, the Mission Bay campus site boundaries would be expanded to include Blocks 33 and 34, which would be known as the East Campus.

7.9.2.1 UCSF Functional Zones

Most of the North Campus is located with the Instruction and Research functional zone, with other large areas classified as Housing, Open Space and Campus Community. The South Campus is classified entirely as Clinical (see Figure 3-10 in Chapter 3, *Project Description*).

7.9.2.2 City of San Francisco Zoning

The entire campus site is zoned as Mission Bay Redevelopment Area (MB-RA), and the Height and Bulk District is also MB-RA. Buildings on the Mission Bay campus site are limited to heights ranging from 85 to 160 feet (exclusive of rooftop mechanical equipment) by the *Mission Bay South Redevelopment Plan* (see discussion below under *Existing Planning Agreements*).

7.9.2.3 UCSF Mission Bay Design Guidelines

Design guidelines were developed by UCSF for the Mission Bay campus site that address such features as building mass, scale, height, floor size, proportion and setbacks. The *Mission Bay Campus Master Plan and Design Guidelines* (CMPDG) is an internal UCSF planning tool to provide an overall framework for the physical development of the Mission Bay campus site. It sets forth basic principles to guide the design of individual buildings and landscaping projects with the understanding that buildout of the campus site would include designs by many different architects over time. The CMPDG is intended to be compatible with the design standards and guidelines for the Mission Bay Redevelopment Area adopted by the City and the former San Francisco Redevelopment Agency (now known as the Office of Community Investment and Infrastructure [OCII]).

As indicated in UCSF's *Mission Bay Phase Two Study*, overall base building heights on the North Campus are set by the CMPDG at 85 feet, exclusive of rooftop mechanical equipment. Buildings occupying up to twenty percent (20% or 5.2 acres) of developable area on the North Campus may be built to a height of 110 feet. Buildings occupying up to ten percent (10% or 2.6 acres) of developable area on the North Campus may be built to a height of 160 feet. Currently, only 1.1% and 0.6% (0.3 and 0.16 acres), respectively, of the North Campus have been built within the 110 foot and 160 foot height categories. This occurs in the housing complex on Block 20, where buildings reach heights of 85 to 155 feet, and with the tower of Rutter Center on Block 21B, which is 144 feet high. The CMPDG also includes building height parameters for certain areas of the campus site. In order to ensure that the Mission Bay Commons has good exposure to sunlight, buildings exceeding 55 feet along the Commons (adjacent to UCSF Blocks 14 through 17) must step back their facades 30 feet from the building edge above 55 feet. On other sites, building heights should be designed to avoid shading existing and planned open spaces and outdoor recreation areas to the extent possible. Further, the tallest buildings should be located on sites adjoining major urban corridors such as Third, Owens or Sixteenth Streets where they can act as landmarks.

7.9.2.4 Existing Planning Agreements

At Mission Bay, UCSF development is subject to agreements that were negotiated by UCSF with the City and the developer of Mission Bay in connection with the Mission Bay Redevelopment Plan Area.

Mission Bay Redevelopment Plan Area

The *Mission Bay Redevelopment Area North and South Plans* was prepared by the City and County of San Francisco and approved by the San Francisco Board of Supervisors in November 1998. The plans call for over 6,000 residential units (including affordable housing), commercial, retail, and entertainment uses, a large hotel, and over 40 acres of publicly accessible open space in the 303-acre area consisting of Mission Bay Area North and Mission Bay Area South on either side of the China Basin Channel. The overall objective of the plan is to remove industrial blight and stimulate development, employment, and economic growth. A key objective is to retain and promote UCSF academic and research activities within the City by providing a major new campus site large enough to accommodate a critical mass of scientific programs into the initial decades of the 21st century. A site within the Mission Bay Area South was identified in the plan that now consists of the Mission Bay campus site.

Agreements Related to the North Campus

With the transfer of 30 acres from Catellus to UCSF for the North Campus, a Contribution Agreement was prepared outlining the conditions associated with this transfer of property. The Contribution Agreement describes UCSF's financial obligations including contributions towards the construction of public infrastructure (streets and utilities), maintenance of the open space system throughout the Mission Bay Redevelopment Plan area and the development of a public fire station (currently under construction). Also included are UCSF's obligations to provide a minimum of eight acres of publicly accessible open space on the North Campus (which UCSF has already completed), and to donate Block 14 to the San Francisco Unified School District should the district request the property for a public school by 2027. A Donation Agreement was also prepared between UCSF and San Francisco for the City's donation of 13 additional acres for the North Campus, consisting of rights-of-way of previously planned public streets that had not been developed.

Agreements Related to the South Campus

As part of the acquisition of property for the South Campus, UCSF entered into a ground lease for Blocks 36-39 with Catellus and a Memorandum of Understanding (MOU) with OCII to establish UCSF's obligations including contributions towards the construction of public infrastructure, affordable housing, maintenance of the open space system throughout the Mission Bay Redevelopment Plan area, and limitations on building heights, massing and signage for development of the South Campus. UCSF subsequently acquired Block X3 to complete assembly of the South Campus, and the MOU with the City was then amended to cover that property as well.

Agreements Related to the East Campus

In connection with the pending acquisition of Blocks 33 and 34 (which will be referred to as the East Campus), UCSF anticipates entering into a MOU with OCII regarding UCSF's financial obligations, including contributions towards the construction of public infrastructure; affordable housing; maintenance of the open space system throughout Mission Bay; and agreement to follow the *Mission Bay South Redevelopment Area Plan "Design for Development"* regarding building

height, bulk, setbacks, maximum tower floorplate areas, and other design matters for buildings on the East Campus. UCSF also anticipates entering into an Agreement with the infrastructure developer for Mission Bay (FOCIL-MB, LLC) regarding UCSF's contribution towards public infrastructure.

Mission Bay Planning Principles

In response to community concern regarding UCSF's acquisition of land for the Medical Center at Mission Bay and 654 Minnesota Street, UCSF partnered with its Community Advisory Group (CAG) to convene the UCSF Mission Bay Community Task Force (Task Force). The purpose of the Task Force was to identify community issues related to UCSF's development in the Mission Bay Redevelopment Plan area and to produce planning principles to address these issues. These Planning Principles, which were incorporated into the *LRDP Amendment #3*, have since been expanded to address community concerns across all UCSF sites.

7.9.3 Land Use and Planning – Mission Bay Impacts and Mitigation Measures

Impact LU-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

Upon adoption by the Regents, the proposed 2014 LRDP will replace the 1996 LRDP, as amended, and become the applicable campus land use plan for UCSF. Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. The University is the only agency with land use jurisdiction over programs and projects proposed at UCSF campus sites by the 2014 LRDP. Therefore, all proposed activities that would be in general conformity with the 2014 LRDP would have no significant land use impacts. However, UCSF considers the land use policies and zoning regulations of the City when analyzing potential land use impacts under CEQA. The 2014 LRDP is not expected to conflict with City plans and policies adopted for the purpose of avoiding or mitigating an environmental effect.

The 2014 LRDP proposed functional zones are generally consistent with the existing zones on the Mission Bay campus site. Functional zone changes are proposed for Blocks 15 and 18. Block 15 is currently classified as Instruction and Research and would be reclassified as Housing under the 2014 LRDP. The western, triangular portion of Block 18 would be reclassified from Support and Parking to Research as its shape is not conducive to an efficient parking garage layout. Only minor classification label changes are proposed elsewhere on the Mission Bay campus site. Blocks 33 and 34, proposed as the new East Campus at the Mission Bay campus site, have not been designated with functional zones by UCSF. As part of the approval of the 2014 LRDP, the Regents also would designate these blocks for Research and Parking. UCSF is also considering a variant for Blocks 33 and 34 that would designate a portion of these blocks for Clinical use, with

the remainder as Research and Parking. Clinical uses are considered a "secondary use" under the *Mission Bay South Redevelopment Plan* and would require a finding of consistency with the plan by OCII.

The functional zone changes proposed by the 2014 LRDP do not present land use conflicts with adjacent existing land uses on the campus site. Compatibility between adjacent existing and proposed functional zones was taken into consideration in developing the proposed zones in the 2014 LRDP. Existing land use patterns reflect campus site development guided by the planning principles embodied in the previous LRDPs. Therefore, implementation of the 2014 LRDP would have a less-than-significant impact regarding consistency with land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect.

Mitigation: None required.

Impact LU-MB-2: Implementation of the 2014 LRDP at the Mission Bay campus site would be compatible with adjacent land uses. (Less than Significant)

The 2014 LRDP includes proposed development on Blocks 15, 16, 18, 23, and 25, and acquisition and development of Blocks 33 and 34. In addition, it is assumed that the last building of Phase 1 of the Medical Center at Mission Bay (cancer outpatient building) as well as Phase 2 of the Medical Center would be constructed by 2035. On Block 16, one research and/or office building and a central utility plant totaling approximately 289,000 gsf, or alternatively two research buildings totaling up to 377,400 gsf may be built. The height of the proposed buildings on Block 16 would be similar in height to other research buildings on the campus site, but would have setbacks of 30 feet at the 55-foot height along Mission Bay Boulevard South in accordance with the CMPDG. Block 18 is proposed to include one office and/or research building with up to 193,000 gsf and up to 160 feet tall. A separate or attached parking garage up to 110 feet tall could be built east of the proposed building on Block 18. A full-size, multi-purpose sports field would be developed on the eastern portion of the block. An 85-foot tall, 232,200 gsf research building is proposed for the western side of Block 23. Block 25 is proposed to include a 323,300 gsf research/office building on the eastern side of the block with all or a portion of the building constructed up to 160 feet in height.

A new housing complex consisting of 523 units and totaling 398,700 is proposed for Block 15. The complex would be comprised of four or fewer buildings with an internal courtyard. The buildings would range from 55 feet in height along Mission Bay Boulevard South, 85 feet along Sixth Street and Nelson Rising Lane and up to 120 feet along Fifth Street. The complex could include a 20,000 gsf child care center. If the child care center is developed on this block, approximately 15,000 square feet of the courtyard would be dedicated as an outdoor play yard. If child care is located elsewhere, approximately 12 additional units could be added to the housing program on Block 15. In addition, approximately 1,500 assignable square feet could be considered on this block (or Block 23) for UCSF police.

As described in the Setting in Section 7.9.2.3, above, buildings occupying up to twenty percent (20% or 5.2 acres) of developable campus site area may be built to a height of 110 feet. Buildings

occupying up to ten percent (10% or 2.6 acres) of developable campus site area may be built to a height of 160 feet. Currently, 1.1% and 0.6%, respectively, of the campus site have been built within the 110 foot and 160 foot height categories. Under the 2014 LRDP, the area on the campus site occupied by buildings up to 110 feet in height would increase to 5% (1.4 acres) of developable campus site area. The area occupied by buildings up to 160 feet in height would increase to 6% (1.7 acres) of developable campus site area. Proposed buildings under the 2014 LRDP would therefore be consistent with the height restrictions for the campus site as determined in the CMPDG. New buildings proposed for Blocks 15, 16, 18, 23, and 25 would be designed to be consistent with other parameters of the CMPDG, including such items as mass, floor size, proportion and setbacks.

Blocks 33 and 34 (to be known as the East Campus) would be developed with up to 500,000 gsf and 500 parking spaces. No specific UCSF programs have been identified yet to relocate to the site, and no specific building design is proposed. Proposed development on the East Campus would follow the *Mission Bay South Redevelopment Area Plan "Design for Development"* regarding building height, bulk, setbacks, maximum tower floorplate and other design matters.

The cancer outpatient building and the Phase 2 Medical Center would be consistent with the MOU with OCII regarding height, bulk and setback requirements as determined in the *UCSF Medical Center at Mission Bay EIR* (UCSF, 2008).

As discussed above, proposed development on the Mission Bay campus site would be consistent with the CMPDG, the *Mission Bay South Redevelopment Area Plan "Design for Development,"* and other agreements with the City and OCII. New buildings would be constructed in an area containing existing UCSF facilities and near other similar development projects adjacent to the campus site. Proposed UCSF development on the northern portion of the campus site would be separated from residential areas to the north by the Mission Bay Commons. Development proposed for the Mission Bay campus site under the 2014 LRDP would be compatible with adjacent land uses and the impact would be less than significant.

Mitigation: None required.

7.10 Noise

This section considers the setting and noise impacts of implementation of the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Noise are contained in Section 4.10 of this EIR. The CEQA Significance Standards presented in Section 4.10.3 are used to evaluate the potential noise impacts of all proposed 2014 LRDP activities.

7.10.1 Noise Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Airport noise.** No activities would be located within the vicinity of a public airport. Therefore, no additional analysis of this issue is required.

7.10.2 Noise – Mission Bay Setting

7.10.2.1 Existing Noise Environment

Long-term environmental noise in urbanized areas is primarily dependent on vehicle traffic volumes and the mix of vehicle types. The existing ambient noise environment within the Mission Bay campus site area is dominated by vehicular traffic on Third Street, Sixteenth Street and Mariposa Street as well as from the elevated section of Interstate 280 (I-280) to the west of the campus site.

The San Francisco Department of Public Health (DPH) has mapped transportation noise throughout the City and County of San Francisco, based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority travel demand model[16]. DPH maps indicate the areas subject to noise levels over 60 dBA (L_{dn}) and the range of L_{dn} noise levels that occur on every street in San Francisco. The portions of these maps that cover the campus site area indicate that areas along Third Street are generally between 65 and 70 dBA (L_{dn}) south of Sixteenth Street but exceed 70 dBA north of Sixteenth Street.

Ambient Noise Measurements

Ambient long-term (24-hour) and short-term (10-minute) noise measurement data were collected in January and March of 2014 to characterize noise conditions in the campus site area and its environs. Noise measurement locations are shown in **Figure 7.10-1**. To characterize ambient noise in the campus site area, short-term measurement data were compiled for two locations where residential land uses exist near primary 2014 LRDP development proposals, as shown in **Table 7.10-1**. Long-term noise data was collected adjacent to proposed residential land uses on the campus site. These data are presented in **Table 7.10-2**.

16 San Francisco Department of Public Health (DPH), San Francisco City-wide Noise Map, August 2006, Available online at http://www.sfdph.org/dph/files/EHSdocs/ehsPublsdocs/Noise/noisemap2.pdf Accessed April 30, 2013.

SOURCE: ESA; Google Earth

UCSF Long Range Development Plan Environmental Impact Report

Figure 7.10-1

Noise Measurements Locations – Mission Bay

TABLE 7.10-1
SHORT- TERM AMBIENT NOISE LEVEL DATA IN THE MISSION BAY CAMPUS SITE AREA

Measurement Location	Time	Noise Levels in dBA	
		Hourly L_{eq}	L_{max}
MB-ST1: UCSF Mission Bay Block 18 Existing Child Care Facility	4:15	67.8	83.6
MB-ST2: UCSF Mission Bay Block 20 Existing Residential Uses	4:30	68.0	76.8
MB-ST-3: UCSF Future Mariposa City Park	4:56	70.9	79.4

NOTE: See Figure 7.10-1 for noise measurement locations. L_{eq} represents the constant sound level; L_{max} is the maximum noise level.

SOURCE*:* Environmental Science Associates, 2014.

TABLE 7.10-2
LONG- TERM AMBIENT NOISE LEVEL DATA IN THE MISSION BAY CAMPUS SITE AREA

Measurement Location	Day-Night Noise level (DNL)	Noise Levels in dBA	
		Daytime hourly average Leq	Nighttime hourly average Leq
MB-LT1. UCSF Mission Bay Block 15	64	60	57

NOTE: See Figure 7.10-1 for noise measurement locations.

SOURCE*:* Environmental Science Associates, 2014.

Long-term monitoring location MB-LT1 is located north of the existing terminus of Nelson Rising Lane at the southeast corner of Block 15. The noise environment at this location is dominated by distant vehicle traffic on Third Street and I-280. This location experiences noise levels of 64 DNL, which, for residential land uses, the General Plan suggests that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

7.10.2.2 Sensitive Receptors

Sensitive receptors for noise are generally considered to include nursing homes, senior citizen centers, schools, churches, libraries, residences, and hospitals. Land uses in the campus site area are described in detail in Section 7.9, *Land Use*. On the Mission Bay campus site, existing sensitive receptors consist of the Mission Bay housing building on Block 20, and a child care facility located on Block 18. Off-campus receptors consist of residential land uses approximately 300 feet northeast of the campus site, residential land uses approximately 650 feet northwest of the campus site (across Mission Creek) and residential land uses in Potrero Hill over 1,000 feet southwest of the campus site.

7.10.3 Noise – Mission Bay Impacts and Mitigation Measures

Impact NOI-MB-1: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (Potentially Significant)

As noted in the Regional Setting section, the hours that construction activity noise can occur is restricted by Section 2908 of the Police Code. Although UCSF is not subject to the noise ordinance, it strives to be consistent with it. Section 2908 prohibits any person, between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day, from erecting, constructing, demolishing, excavating for, altering, or repairing any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line.

Table 7.10-3 presents an estimate of the sequence of proposed building construction and the proximity of sensitive receptor to each construction site. As can be seen from the table, most construction would occur sequentially with only construction of the Block 23 research building, the cancer outpatient building and the Block 18 sports field potentially occurring concurrently. Table 7.10-3 also presents an estimate of noise levels during construction. These estimated noise levels assume simultaneous operation of an excavator, a loader and a bulldozer common to grading work for foundations as calculated using the Roadway Construction Noise Model of the FHWA.

TABLE 7.10-3
NOISE LEVELS FOR CONSTRUCTION AT THE MISSION BAY CAMPUS SITE

Building	Estimated Construction Schedule	Distance to Nearest Sensitive Receptor (feet)	Shielding Assumption	Estimated Noise Level at Receptor (dBA, Leq)	Noise Increase over Existing Daytime Conditions (dBA, Leq)
Block 15 Housing	2015 to 2016	250 (Block 18 Child Care)	None	67.4	7.4
Block 23 Research Building	January 2018 to January 2020	175 (Block 20 Housing)	None	70.5	2.5
Cancer Outpatient Building	January 2018 to January 2020	800 (Block 20 Housing)	None	57.6	-10.4
Block 18 Sports Field	July 2018 to July 2019	100 (Block 15 Housing)		75.4	**15.4**
Block 25 Research Building	January 2023 to January 2025	450 (Block 20 Housing)	None	62.3	-5.3
Block 16 Research Building & CUP	January 2028 to January 2030	100 (Block 15 Housing)	None	75.4	**15.4**
Block 18 Parking Phase I	July 2021 to July 2022	100 (Block 15 Housing)	None	75.4	**15.4**
Block 18 Research Building	January 2033 to January 2034	200 (Block 15 Housing)		69.4	9.4
Block 18 Parking Phase II	July 2034 to July 2035	200 (Block 15 Housing)	None	69.4	9.4
Phase 2 Medical Center	2035	840 (Pennsylvania Avenue residences)	None	56.9	-14.1

TABLE 7.10-4
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 Feet)	Noise Level (dBA, Leq at 100 Feet)
Dump truck	76	70
Portable air compressor	78	72
Concrete mixer (truck)	79	73
Crane	81	75
Excavator	81	75
Dozer	82	76
Paver	77	71
Generator	81	75
Backhoe	78	72
Pile driver	101	95
Auger Drill Rig	84	78

SOURCE: FHWA, 2006.

The nearest sensitive residential receptors on the Mission Bay campus site currently experience existing daytime noise levels of 60 dBA (Future Block 15) and 69 dBA (Existing Block 20 housing and day care center on Block 18). Noise from standard construction equipment could exceed these existing noise levels by as much as 15 dBA. Implementation of **Mitigation Measure NOI-LRDP-1** will reduce the impacts from standard construction equipment by as much as 5 to 10 dBA, which would be less than significant for most locations, depending on the existing ambient noise level.

Mitigation Measure: Implement Mitigation Measure NOI-LRDP-1

Significance after Mitigation: Less than Significant

Impact NOI-MB-2: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels during pile-driving activities. (Potentially Significant)

It is likely that most of the buildings developed at the Mission Bay campus site would require pile-driving, given the soil conditions in the area and the development history of the Mission Bay campus site and surrounding area. An impact pile driver, if required, could result in an increase of up to 35 dBA over existing noise levels at the nearest receptor, 100 feet away in many cases, resulting in a significant noise increase over existing conditions. Consequently, mitigation measures to reduce pile-driving noise are identified in **Mitigation Measure NOI-LRDP-2**.

Mitigation Measure: Implement **Mitigation Measure NOI-LRDP-2**

Significance After Mitigation: Significant and Unavoidable. Mitigation Measure NOI-LRDP-2 would reduce the severity of noise generated by pile-driving activities and reduce the potential annoyance to nearby residents and others who could be disturbed by pile-

driving to the extent feasible. If piles can be installed though drilling and cast in place measures then this mitigation measure would result in a less than significant impact.

However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration, even after mitigation the noise level would likely exceed 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.

Impact NOI-MB-3: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site could generate ground-borne vibration. (Less than Significant)

The types of construction activities associated with propagation of ground-borne vibration include pile driving, use of hoe-rams for demolishing large concrete structures and caisson drilling. It is possible that pile driving and drilling could occur during hospital construction. Pile driving, if required could take one or more months, and would occur during daytime hours, consistent with the City's Police Code.

Of the construction equipment likely to be used for construction, pile driving has the potential to result in the highest levels of groundborne vibration. Pile driving can result in peak particle velocities (PPV) of up to 1.5 inches per second (in/sec) at a distance of 25 feet (FTA, 2006), but typically results in an average of about 0.644 PPV at that distance. The Caltrans measure of the threshold of architectural damage for conventional sensitive structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings.

The nearest existing structure is approximately 50 feet away from the site of the proposed buildings, where pile driving may occur and 100 feet away from the nearest residential building. At the 50-foot distance, vibration from pile driving would be expected to be reduced to 0.23 inches per second. Therefore, vibration from pile driving would not exceed the criterion published by Caltrans of 0.5 in/sec PPV for new residential structures and modern commercial buildings. At the 100-foot distance, vibration from pile driving would be expected to be reduced to 0.08 inches per second where vibration levels could be perceptible at the nearest residential receptors but would be below the thresholds considered strongly perceptible or severe, 0.1 in/sec PPV and 0.4 in/sec PPV, respectively.

Consequently, the development at Mission Bay under the 2014 LRDP would have a less-than-significant impact with regard to groundborne vibration.

Mitigation: None required.

Impact NOI-MB-4: Operational noise generated by development under the 2014 LRDP at the Mission Bay campus site could cause a long-term increase in ambient noise levels in the campus vicinity. (Less than Significant)

Long-term noise sources associated with operation of the new buildings and hospital would primarily consist of marginal increases in roadway traffic resulting from new and repurposed land uses. There will likely be some new mechanical equipment (e.g. heating ventilation and air conditioning, back up generator testing) associated with operation of these new buildings. The potential location of such equipment in not known but such equipment would be operated is such a manner as to conform to the requirements of the City of San Francisco Noise Ordinance. Noise from maintenance testing of backup generators would occur briefly once a week during daytime hours and would be roughly equivalent to that generated by a single truck engine, which would not be expected to represent a substantial increase in noise levels in an urban environment.

A project would be considered to generate a significant impact if it resulted in a permanent increase in ambient noise levels greater than 3 dBA in the project vicinity above levels existing without the project for areas already impacted by noise.

Increased traffic would primarily be on the local roadway network, including Third Street and Mission Bay Boulevard South. Noise levels were determined for this analysis using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model and the turning movements in the traffic section for Existing (2014), Existing Plus LRDP, and Cumulative Plus LRDP conditions. Peak hour intersection turning data from the traffic study were analyzed to evaluate increases and resulting traffic-generated noise increases on roadway links most affected by 2014 LRDP-related traffic. The roadway segments analyzed and the results of the noise increases resulting from modeling are shown in **Table 7.10-5**, below.

TABLE 7.10-5
PEAK-HOUR TRAFFIC NOISE LEVELS IN THE VICINITY OF THE MISSION BAY CAMPUS SITE

Roadway Segment[a,b]	(A) Existing	(B) Existing Plus LRDP	(B-A) Difference between Existing Plus LRDP and Existing[c]	(D) Cumulative Plus LRDP (2040)	(D-A) Difference between Cumulative Plus LRDP and Existing
3rd Street between Mission Bay Boulevard and 16th Street	68.9	69.3	0.4	71.3	2.4
3rd Street between Mariposa Street and 20th Street	68.4	68.9	0.5	70.8	2.4
3rd Street between Channel Street and Mission Bay Boulevard	69.2	69.6	0.4	71.1	1.9
Mission Bay Boulevard South between 3rd Street and 6th Street	50.3	51.1	0.8	55.5	5.2

[a] Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model.

[b] The analysis considered the vehicle mix based on – cars 95%, medium trucks 3%, and heavy trucks 2% on 3rd Street. Traffic speeds for all vehicle classes were set at 35 mph for 3rd Street. Mission Bay Boulevard had a more standard non-arterial assumption of 97% cars, 2% medium trucks, and 1% heavy trucks on 3rd Street and a traffic speeds for all vehicle classes of 25 mph

SOURCE: ESA, 2014.

As shown in Table 7.10-5, the increase in traffic noise from the Existing Plus LRDP scenario compared to the Existing scenario would increase peak hour noise levels by less than 3 dBA at all roadway segments. Overall, operational and traffic noise impacts associated with development under the 2014 LRDP at all analyzed roadway segments in the vicinity of the Mission Bay campus site would be less than significant.

Mitigation: None required.

Impact NOI-MB-5: Operations under the 2014 LRDP at the Mission Bay campus site would result in exposure of persons (new residents) to noise levels in excess of standards established in the general plan. (Less than Significant)

The proposed Block 15 housing project would result in a new residential use and child care facility that would be considered a sensitive receptor. Long-term noise monitoring conducted at Block 15 indicates an existing exterior noise level of 64 DNL. As shown in Table 7.10-5, future roadway traffic on South Mission Bay Boulevard on the northern boundary of Block 15 would contribute 55 dBA to this existing measures value, resulting in a future (2040) condition of 64.5 dBA. This noise level is within the "conditionally acceptable" noise exposure category as defined by the City of San Francisco General Plan Noise Element (greater than 60 DNL).

The Phase 1 Medical Center will operate a helipad that will have occasional helicopter operations. Noise modeling for helicopter operations at the UCSF Medical Center at Mission Bay was conducted as part of the *Final SEIR, UCSF Medical Center at Mission Bay—Residential Sound Reduction Program for Helicopter Operations*. This modeling indicates that "busy day" helicopter operations at the hospital would contribute a CNEL of 54 dBA at Block 20. Block 15 is further away from the helipad and would be expected to experience a lesser noise contribution. Adding this contribution to the existing ambient noise levels at Block 15 as well as future traffic noise contributions results in a cumulative future noise level of 64.9 dBA[17].

A conditionally acceptable noise exposure is defined as one in which new construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction combined with closed windows and fresh air supply systems or air conditioning will normally suffice. The proposed housing units on Block 15 would have air handling systems. Additionally, Section 1207 of the California Building Code (Title 24 of the California Code of Regulations) establishes material requirements in terms of sound transmission class (STC) [18] of 50 for all common interior walls and floor/ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public area. This requirement would be sufficient to achieve the additional 4.9 dBA of sound reduction necessary to achieve the noise exposure goals of the San Francisco General Plan.

[17] CNEL is roughly equivalent to DNL, usually within 1 dBA

[18] The STC is used as a measure of a materials ability to reduce sound. The STC is equal to the number of decibels a sound is reduced as it passes through a material.

Mitigation: None required.

LRDP Variant Conditions

Under the LRDP Variant, the Mission Bay campus site would generate slightly more vehicle trips than under the 2014 LRDP. Approximately 2,950 new vehicle trips would be generated during the AM peak hour and approximately 2,450 additional vehicles at the campus site during the PM peak hour. These represent increases of approximately 2% in the total number of vehicles compared to the 2014 LRDP during both the AM and PM peak hours. This additional traffic would increase roadway noise by less than 0.1 dBA for all roadways analyzed in Table 7.10-5 and would have the same less than significant impact as identified for the 2014 LRDP.

7.10.4 References

California Department of Transportation (Caltrans), 2013. *Transportation- and Construction-Vibration Guidance Manual*, September 2013.

Caltrans, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

City and County of San Francisco (CCSF), *San Francisco General Plan*, adopted on June 27, 1996, http://www.sf-planning.org/ftp/General_Plan/index.htm, accessed February 20, 2014.

Federal Highway Administration (FHWA) Roadway Noise Construction Model, 2006.

Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

United States Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, http://www.fican.org/pdf/EPA_Noise_Levels_Safety_1974.pdf, accessed February 20, 2014.

UCSF, *UCSF Medical Center at Mission Bay—Residential Sound Reduction Program for Helicopter Operations, Final Supplemental Environmental Impact Report*, 2009.

7.11 Population and Housing

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Population and Housing are contained in Section 4.11 of this EIR. The CEQA Significance Standards presented in Section 4.11.3 are used to evaluate the potential population and housing impacts of all proposed 2014 LRDP activities.

The 2014 LRDP would result in population growth in San Francisco or the wider Bay Area through increased employment and student enrollment. The 2014 LRDP would accommodate an increase in employment and students at all campus sites from the current approximately 30,840 to approximately 42,270 by 2035. This anticipated population increase could result in an increased demand for housing in the Bay Area. This overall increase and its potential effect on housing were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures.*

The 2014 LRDP development proposals would result in changes in daily population at this campus site. The projected increase in population at the Mission Bay campus site would be approximately 17,000 people by 2035 with implementation of the 2014 LRDP (including the Phase 2 Medical Center at Mission Bay). A new housing complex with approximately 774 beds in 523 units is proposed on Block 15 by the 2014 LRDP. The direct and indirect physical environmental effects that result from these changes are fully considered in each of the appropriate topical sections of this Chapter.

7.12 Public Services

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Public Services are contained in Section 4.12 of this EIR. The CEQA Significance Standards presented in Section 4.12.3 are used to evaluate the potential public services impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all campus sites, including patients and visitors, was approximately 39,420. At LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Mission Bay campus site would be approximately 17,000 people by 2035.

This anticipated population increase could result in an increased demand for public services in San Francisco, including fire protection, law enforcement, and public education. This overall increase and its potential effect on public services were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. The anticipated increase in population at this campus site under the LRDP would not cause substantial increased demand for public services specific to this campus site, and all impacts are found to be less than significant.

7.13 Recreation

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Recreation are contained in Section 4.13 of this EIR. The CEQA Significance Standards presented in Section 4.13.3 are used to evaluate the potential recreation impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all campus sites, including patients and visitors, was approximately 39,420. At LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Mission Bay campus site would be approximately 17,000 people by 2035.

This anticipated population increase could result in an increased use of recreational facilities on and near UCSF campus sites. This overall increase and its potential effect on recreational facilities, as well as effects resulting from 2014 LRDP proposals, were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. The anticipated increase in population at this campus site under the LRDP would not cause substantial increased demand for recreation facilities specific to this campus site, and all impacts are found to be less than significant.

7.14 Transportation and Traffic

This section considers the setting and the potential transportation and traffic impacts of implementation of the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Transportation and Traffic are contained in Section 4.14 of this EIR. The CEQA Significance Standards presented in Section 4.14.3 are used to evaluate the potential transportation and traffic impacts of all proposed 2014 LRDP activities.

7.14.1 Transportation and Traffic Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Bay campus site, the Initial Study concluded that:

- **Air traffic patterns.** No activities would result in a change in air traffic patterns. Therefore, no additional analysis of this issue is required.

7.14.2 Transportation and Traffic – Mission Bay Setting

A more-detailed description of current transportation and traffic characteristics in the Mission Bay campus site area is provided in Appendix G, the Transportation Impact Study (TIS) for the UCSF LRDP.

7.14.2.1 Roadway Facilities

The network of regional roadways that serve the Mission Bay campus site is described in Section 4.18.

The campus site sits within the Mission Bay Redevelopment Area and is bordered by the South of Market (SoMa) neighborhood to the north, Potrero Hill to the south and west, and Dogpatch to the south. The primary north-south corridors are Third Street, Fourth Street, and Seventh Street and the primary east-west corridors are Sixteenth Street and Mariposa Street. Local access to the Mission Bay campus site is provided by an urban street grid network. Key local roadways through the campus site are discussed below.

The local road network serving the Mission Bay campus site includes several two-lane roadways with on-street parking provided on both sides of the streets in most areas, as follows:

- **Berry Street** runs from Third Street to Owens Street, operating as an eastbound one-way street between Third and Fourth streets.

- **Mission Rock Street** runs from Terry A. François Boulevard to Fourth Street.

- **Fourth Street** is a Primary Transit Important roadway that runs from Market Street to Sixteenth Street. It is designated as a Class III bicycle route as it crosses Mission Creek,

after which it transitions into Class II bicycle lanes between Channel Street and Sixteenth Street. The T Third Street light rail line operates on Fourth Street between King Street and Channel Street.

- **Owens Street** runs from Sixteenth Street to the Mission Bay Circle. On-street parking is prohibited on both sides of the street.

- **Seventh Street** is a Secondary Arterial roadway that runs from Market Street to Sixteenth Street. Seventh Street has Class II bicycle lanes between Brannan and Sixteenth streets.

Other roadways providing access to the Mission Bay campus site are as follows:

- **Mission Bay Boulevard North** is a one to two-lane Local Street that extends from Terry A. François Boulevard to Fourth Street. Mission Bay Boulevard North is the westbound component of the Mission Bay Boulevard one-way couplet.

- **Mission Bay Boulevard South** is a one to two-lane Local Street that extends from Fourth Street to Terry A. François Boulevard. Mission Bay Boulevard South is the eastbound component of the Mission Bay Boulevard one-way couplet.

- **Channel Street** is a four-lane east-west Local Street that extends from west of Fourth Street to Third Street. The T Third Street rail line operates on Channel Street between Third and Fourth streets within a physically separated median in the roadway.

- **Sixteenth Street** is a four-lane east-west Secondary Arterial roadway with left-turn pockets that extends from Third Street to Castro Street. Sixteenth Street has Class II bicycle lanes in both directions between Third Street and Kansas Street.

- **Mariposa Street** is a four-lane east-west Local Street that extends from Illinois Street to Harrison Street that is located at the southern edge of the UCSF campus site. The I-280 on- and off-ramps (southbound and northbound, respectively) are located immediately east of the intersection of Pennsylvania and Mariposa streets. Mariposa Street is a designated Class III bicycle route with shared-lane markings (“sharrows”) between Illinois Street and Mississippi Street.

- **Third Street** is a four-lane north-south Primary Transit Important roadway that extends from Market Street to Bayshore Boulevard. Third Street is designated as a Class III bicycle route with “sharrows” between King Street and Terry A. François Boulevard in the northbound direction only. The T Third Street light rail line operates along Third Street between Channel Street and Bayshore Boulevard along a physically separated median in the roadway.

- **King Street** is a five to six-lane east-west Primary Transit Important roadway that extends from Second Street to Fifth Street and the I-280 freeway. The N Judah and T Third Street light rail lines operate along the entirety of King Street within a physically separated median in the roadway.

- **Mission Bay Drive** is a four-lane Local Street that extends from the Mission Bay Circle to Seventh Street under the I-280 freeway and across the Caltrain railroad tracks; the eastbound and westbound travel lanes are separated by a landscaped median, and Class II bicycle lanes are provided on both sides of the street.

- **Mississippi Street** is a north-south roadway that runs discontinuously between Sixteenth/ Seventh and César Chávez streets. In the vicinity of the Mission Bay campus site, Mississippi Street has one traffic lane each way, and Class II bicycle lanes are provided on both sides of the street between Sixteenth and Mariposa streets.

Proposed Local Roadway Changes

The 1998 *Mission Bay South Area Plan* proposed substantial changes to the roadway infrastructure in the vicinity of the Mission Bay campus site that are to be constructed as the area develops. Of all of these, the following infrastructure improvements are to be implemented as part of the opening of Phase 1 of the Medical Center at Mission Bay in February 2015:

- Owens Street will be extended from Sixteenth Street to Mariposa Street, to connect with the I-280 on- and off-ramps and to create a new intersection at Mariposa Street. The existing signal at the intersection of Mariposa Street and the I-280 northbound off-ramp will be upgraded to accommodate the new Owens Street approach.

- Mariposa Street will be widened on the north side from Owens Street to Illinois Street by approximately 15 feet, and left turn lanes will be provided at major intersections. The Mariposa Street Bridge over the Caltrain tracks will be restriped to provide two exclusive left turn lanes in the westbound direction for a total of three lanes, and create a new signalized intersection with Owens Street.

- The northbound I-280 off-ramp will be widened to the east to provide an additional lane and better align with Owens Street. Mariposa Street between the I-280 southbound on-ramp and Pennsylvania Avenue will be re-striped to accommodate the lane configurations described above.

- The existing STOP-sign controlled intersection of Mariposa Street and the I-280 southbound on-ramp will be signalized; the new signal will be interconnected with the existing signal at the off-ramp.

7.14.2.2 Intersection Operating Conditions

Intersection operating conditions at 21 intersections were evaluated during the weekday peak hours of the AM (7:00-9:00AM) and PM (4:00-6:00PM) peak periods. Intersections usually form the critical capacity constraints on roadways. Therefore, most transportation analyses examine intersection operations as a measure of overall roadway conditions.

The operating characteristics of intersections are evaluated using the concept of Level of Service ("LOS"). LOS is a qualitative description of driver comfort and convenience. Intersection levels of service range from LOS A, which indicates free flow or excellent vehicle flow conditions with short delays, to LOS F, which indicates congested or overloaded vehicle flow conditions with extremely long delays. In San Francisco, LOS A through D is considered acceptable, and LOS E and LOS F are considered unsatisfactory service levels. The intersections were evaluated using the 2000 Highway Capacity Manual (HCM) methodology. Tables summarizing the relationship between average delay per vehicle and LOS for signalized and unsignalized intersections according to the 2000 HCM method can be found in the appendices of the Transportation Impact Study (TIS) for the UCSF Long Range Development Plan (Appendix G).

For signalized intersections, this methodology determines the capacity for each lane group approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average delay and LOS is presented for the intersection. For unsignalized intersections, operations are defined by the average control delay per vehicle (in seconds per vehicle) for each stop-controlled movement or movement that must yield the right-of-way, and the LOS is determined by the worst (highest average delay) approach. Generally, the delay ranges for each LOS are lower than for signalized intersections because drivers expect less delay at unsignalized intersections.

As shown in **Table 7.14-1**, 19 of the 21 study intersections operate at an acceptable level of service, which is LOS D or better, during the AM peak hour, and 19 study intersections operate at an acceptable LOS during the PM peak hour. The following intersections operate unacceptably during the AM or PM peak hours:

- King Street and Third Street (Intersection #24) operates at LOS E during the PM peak hour due to the high conflicting traffic volumes on the westbound through and eastbound left turning movements on King Street.
- Mariposa Street and the I-280 Northbound Off-ramp (Intersection #43) operates at LOS F during the AM peak hour due to the volume of traffic exiting I-280 via the off-ramp.
- Mariposa Street and the I-280 Southbound On-ramp (Intersection #44) operates at LOS E and LOS F during the AM and PM peak hours, respectively, due to the high conflicting volumes on east- and westbound Mariposa Street attempting to access I-280 via the Southbound On-ramp.

7.14.2.3 Transit Network

The Mission Bay campus site is well-served by public transit, both local and regional. Local service is provided by the Muni bus and light rail lines. Regional service is provided by BART, AC Transit, Golden Gate Transit, SamTrans, and Caltrain. In addition, there are two shuttle systems that provide service to the Mission Bay campus site: the UCSF shuttle system, and two shuttle lines operated by the Mission Bay Transportation Management Association (MBTMA). These shuttles supplement Muni transit service and provide direct connections to UCSF-operated facilities throughout San Francisco and the Powell Street BART station. According to the most recent transportation commute survey, approximately 20% of those traveling to and from the campus site use public transit, while another approximately 30% rely on UCSF shuttles to get to and from the campus site.

Local Transit

San Francisco Muni. San Francisco Municipal Railway (Muni) provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car and electric streetcar lines. Muni operates three bus and rail lines in the Mission Bay campus site (see the Transportation Impact Study (TIS) in Appendix G for details about these transit lines).

TABLE 7.14-1
EXISTING PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – MISSION BAY

Intersection	Traffic Control[a]	Peak Hour	Delay (seconds)[b]	LOS[c]
24. King Street / Third Street	Signal	AM PM	46 **70**	D **E**
25. King Street / Fourth Street	Signal	AM PM	43 53	D D
26. Brannan Street / Seventh Street	Signal	AM PM	14 25	B C
27. Channel Street / Third Street	Signal	AM PM	40 30	D C
28. Channel Street / Fourth Street	Signal	AM PM	15 16	B B
29. Mission Rock Street / Third Street	Signal	AM PM	37 29	D C
30. Mission Bay Boulevard North / Third Street	Signal	AM PM	17 16	B B
31. Mission Bay Boulevard South / Third Street	Signal	AM PM	23 20	C B
32. Mission Bay Drive / Owens Street	Roundabout	AM PM	<10 <10	A A
33. Mission Bay Drive / Seventh Street	Signal	AM PM	20 22	C B
34. 16th Street / Third Street	Signal	AM PM	36 31	D C
35. 16th Street / Fourth Street	Signal	AM PM	26 27	C C
36. 16th Street / Owens Street	Signal	AM PM	32 30	C C
37. 16th Street / Seventh Street	Signal	AM PM	43 44	D D
38. 16th Street / Rhode Island Street	Signal	AM PM	15 13	B B
39. 16th Street / Vermont Street	Signal	AM PM	19 15	B B
40. 16th Street / Potrero Avenue	Signal	AM PM	27 35	C C
41. Mariposa Street / Third Street	Signal	AM PM	**52** 28	**D** C
42. Mariposa Street / Fourth Street	Signal	AM PM	<10 11	A B
43. Mariposa Street / I-280 Northbound Ramps	Signal	AM PM	**73** 31	**E** C
44. Mariposa Street / I-280 Southbound Ramps	SSS	AM PM	**>50** **>50**	**F** **F**

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersections, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach (indicated in parentheses).
[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersections, LOS is based on the worst approach, which for AWS is indicated in parentheses.
[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

The Transit Effectiveness Project (TEP) serves as both a thorough review of and repositioning of San Francisco's public transit system, initiated by SFMTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. TEP recommendations include new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The TEP recommendations were unanimously endorsed by the SFMTA Board of Directors in October 2008, for environmental impact review. The initial TEP recommendations were revised based on public feedback on the draft TEP environmental impact report (TEP EIR). The TEP EIR was certified on March 27, 2014, and the SFMTA Board of Directors approved most of the Service Improvements and portions of the Transit Travel Time Reduction Proposals on March 28, 2014.[19] The TEP project will be implemented based on funding and resource availability. The TEP Implementation Strategy anticipates that many of the improvements will be implemented sometime between Fiscal Year 2014 and Fiscal Year 2019, subject to funding sources and resource availability. [20] The changes proposed by the TEP for routes near the Mission Bay campus site are described in the TIS (Appendix G).

The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction of the underground segment from Bryant to Clay Street is currently underway, and the Central Subway will extend the T Third line northward from its current terminus at Fourth and King streets to a surface station south of Bryant Street and go underground at a portal under I-80. From there it will continue north to stations at Moscone Center, Union Square where it will provide passenger connections to the Powell Street Station and BART—and in Chinatown, where the line will terminate at Stockton and Clay streets. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019. This project would improve transit service between the Mission Bay campus site and Downtown.

UCSF Shuttle System

Shuttles to and from the Mission Bay campus site (Gold, Blue, Grey, Red, and Green) stop at loading zones along Fourth Street in front of the Koret Quad and in front of the parking lot located near Campus Way. These stops are designated by UCSF Transportation Services and reviewed/approved by SFMTA. A more-detailed description of the UCSF shuttle system serving the Mission Bay campus site area is provided in the TIS (Appendix G).

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19 San Francisco Planning Department. 2014. TEP Final EIR, March 27, 2014, Available online at http://tepeir.sfplanning.org. Accessed April 3, 2014. Case No. 2011.0558E. The document and supporting information may also be viewed at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA in case file 2011.0558E.

20 San Francisco Municipal Transportation Agency. 2014. TEP Implementation Workbook, March 5, 2014, Available online at: http://www.sfmta.com/sites/default/files/projects/TEP%20Implementation%20Plan%20-%20Section%201%20%282%29_1.pdf. Accessed June 27, 2014.

Mission Bay Shuttle System

The Mission Bay Transportation Management Association (MBTMA), formed several years ago in conformance with mitigation measures identified in the *Mission Bay Subsequent EIR*, provides two shuttle bus route services (east and west) between Mission Bay and the Powell BART Station and the Fourth/King Caltrain Station; they are free of charge and open to all employees, residents, and visitors to the Mission Bay Redevelopment Area and the China Basin building (at 185 Berry Street). The west route serves Seventh and Owens streets, while the east route serves Third Street and Mission Bay Boulevard North and South; both operate at 15-minute intervals from 7:00 to 10:00 am and 3:45 to 8:15 pm.

7.14.2.4 Pedestrian Circulation

Based on the 2013 UCSF Transportation Commute Survey, approximately 6% of those traveling to and from the campus site walk and about 37% of all trips made by UCSF Mission Bay campus site employees and students to off-campus locations throughout the day are made by foot. Due to the developing nature of the Mission Bay neighborhood, pedestrian volumes are currently relatively low surrounding the campus site. Pedestrian activity is generally higher towards the center of the campus site along Fourth Street and the many pedestrian alleyways and plazas such as Gene Friend Way and Campus Way. Pedestrian activity is also higher around transit hubs such as the UCSF shuttle stop on Fourth Street south of Gene Friend Way and the T Third light rail stops on Third Street at Gene Friend Way.

Pedestrian facilities include sidewalks, crosswalks, curb ramps, and pedestrian signals. Within the campus site area, sidewalks generally exist on both sides of the street in most locations, and are generally 12 to 15 feet wide. There are sidewalks gaps along roadway frontages of the campus site that are currently under construction including the south side of Sixteenth Street between Seventh and Third Streets and the west side of Third Street between Sixteenth and Mariposa Streets. These sidewalk gaps will be closed upon completion of construction of the adjacent buildings. All intersections surrounding the campus site include standard painted crosswalks and directional curb ramps. Pedestrian median refuges are provided along Fourth Street to slow traffic and reduce the pedestrian exposure time while crossing the street. Pedestrian signals with count down timers are provided at all signalized intersections. In addition to the on-street pedestrian facilities, there are numerous public pedestrian alleyways and plazas that reduce the size of the city blocks for pedestrians. This provides a fine-grained pedestrian oriented network and reduces pedestrian walking distances throughout the campus site.

Field observations at the campus site indicate that pedestrians cross where Campus Way meets Owens Street into the Gladstone Institute building. This crossing is currently unmarked but is a popular route as this is the most direct path for pedestrians between the center of the campus site to the Starbucks adjacent to the Gladstone Institute building and destinations to the west along Sixteenth Street.

7.14.2.5 Bicycle Circulation

The topography within and around the Mission Bay campus site is flat, which facilitates easy bicycle travel. Based on the 2013 UCSF Transportation Commute Survey, approximately 7% of those traveling to and from the campus site bike. In addition, approximately 9% of trips made by UCSF Mission Bay employees and students to off-campus, non-UCSF locations throughout the day are made by bike. This is approximately three times greater than the bicycling mode share throughout San Francisco.

The following bicycle facilities are located within or near the Mission Bay campus site:

- **King Street** is part of San Francisco Bike Route 5 and is a short east-west bike route that travels in front of AT&T Park between Second and Third streets with Class II bicycle lanes. The bicycle lane ends mid-way between Second and Third streets, and turns into a Class III facility with shared-lane ("sharrow") markings. The route ends at Third Street.

- **Sixteenth Street** is part of San Francisco Bike Route 40 and is an east-west bike route that extends from Terry A. François Boulevard to Kansas Street. Between Third Street and Kansas Street, 16th Street has Class II bicycle lanes in both directions. Between Terry A. Francois Boulevard and Third Street, Sixteenth Street is currently designated as a Class III bicycle facility, and will be upgraded to a Class II facility as a part of the Mission Bay South Infrastructure Plan.

- **Mariposa Street** is part of San Francisco Bike Routes 7 and 23 and is an east-west bike route that extends from Illinois Street to Mississippi Street as a Class III bicycle facility with "sharrow" markings. At its eastern terminus, Mariposa Street connects to the Class II bicycle lanes on Terry A. François Boulevard, while on its western terminus it connects to the Class II bicycle lanes that continue north on Mississippi Street.

- **Third Street** is San Francisco Bike Route 5 and is a short north-south bike route that extends from King Street to Terry A. François Boulevard and is designated as a Class III bicycle facility with "sharrows". At its southern terminus, Third Street connects to the Class II bicycle lanes on Terry A. François Boulevard.

- **Fourth Street** is a north-south bike route that extends from Berry Street to Sixteenth Street. Fourth Street is designated as a Class III bicycle facility as it crosses Mission Creek until Channel Street, south of which it has Class II bicycle lanes. The Fourth Street bicycle lanes provide the primary bicycle access through the Mission Bay campus site.

- **Seventh Street** is part of San Francisco Bike Route 23 and is a north-south bicycle route that extends from Brannan Street to Sixteenth Street with Class II bicycle lanes.

- **Mississippi Street** is part of San Francisco Bike Route 23 and is a north-south bike route that extends from Sixteenth Street to Mariposa Street with Class II bicycle lanes.

- **Mission Bay Drive** is an east-west bike route that extends from the Mission Bay Circle to Seventh Street. It is designated as a Class II bicycle facility that provides bicycle access across the Caltrain tracks into the Mission Bay campus site.

The San Francisco Bike Plan (June 2009) ("Bike Plan") includes a planned bikeway near/along Mission Creek between Fourth Street and Harrison Street, which is listed as a long-term project in the Bike Plan.

Bicycle counts indicate the most popular bicycling route through the campus site is Fourth Street, where between 40 and 50 bicyclists were observed during the AM and PM peak hours. Campus Way is also a popular connection into the campus site from Sixteenth Street, with 10-20 bicyclists observed crossing Owens Street at Campus Way during the AM and PM peak hours.

Bicycle racks are provided throughout the Mission Bay campus site in front of campus buildings, on-street, and within the Owens Street garage. Popular bicycle parking locations, such as the gym, were observed to be nearly fully occupied during a site visit in February 2014. In an effort to increase bike parking here at the Mission Bay campus site to meet the growing demand, while also taking into account the feedback received from bicyclists, UCSF has since redesigned and expanded the bike parking throughout the campus site. This included new racks that double the amount of bike parking available in each area of installation, while providing equal access to all bicycle frame shapes and sizes.

7.14.2.6 Loading Conditions

The Mission Bay campus site has both service vehicle and passenger loading. There are eight off-street service vehicle loading facilities serving the existing uses on the campus site. Passenger and service vehicles may also load on-street at marked zones on Fourth Street and Nelson Rising Lane.

Based on 2010 monthly data, the Helen Diller Cancer Research building receives approximately 100 deliveries each month, resulting in approximately three to four deliveries per day. The four loading spaces are sufficient for existing operations. The Rutter Center rarely expects deliveries for special events. On occasion, an event may require delivery of conference materials. Daily deliveries are typical for the Café and laundry services, resulting in a minimum of three deliveries per day. The two loading spaces are sufficient for existing operations.

The loading area at Genentech Hall, monitored by security guards, receives approximately 20 deliveries each day for Genentech Hall and the adjacent Byers Hall. The six loading spaces are comprised of four dock spaces and two small delivery van spaces. Based on the existing delivery operations, the six spaces are sufficient for current operations.

In general, existing loading areas provide a sufficient amount of space for passenger and vehicle loading based on feedback from UCSF Facilities Services. No delivery vehicles were observed double parking or using other facilities. Some passenger loading vehicles used empty metered parking spots for pick-up and/or drop-off because of their proximity.

Future loading areas may be provided at the Research CUP/EH&S Building. The Third Street Garage may include some loading spaces that are currently used for permit parking and UCPD emergency supplies. Mission Hall is not anticipated to include an off-street loading area. UCSF

Facility Services assume Campus Way, an adjacent private street, would be marked with loading areas similar to the on-street loading zones on Nelson Rising Lane.

7.14.2.7 Parking Conditions

On-Street Parking

Most on-street parking provided in the vicinity of the Mission Bay campus site is regulated with a combination of two-hour, four-hour and unlimited time meters; exceptions include portions of Terry François Boulevard, Mission Bay Boulevard North and South, Sixteenth Street, and Mariposa Street. Parking limits are generally in effect between 9:00 AM and 6:00 PM, with longer hours (until 10:00 PM). Parking is prohibited on Sixteenth Street, west of Third Street; in addition, portions of Mariposa and Illinois streets have baseball game-day-only tow-away parking prohibitions.

Mission Bay experiences a high parking utilization on most streets, including those with lower time limits. The streets that are surrounded by finished construction and occupied buildings have low parking availability, especially on weekday days. On other streets where parking demand is managed by two-hour time limits, very few of the parking spaces are used, which is an inefficient use of the existing parking supply. SFMTA, through its SFPark program, is implementing changes to the parking rates and time limits in the Mission Bay and Dogpatch neighborhoods to better manage and operate the existing on-street parking supply.

Overall on-street parking occupancy is 48% during the mid-morning period (10:00 AM – 12 Noon) and 89% during the midday period (12 Noon – 2:00 PM), while the late evening period (6:00 PM – 8:00 PM) occupancy is 61% during a baseball game, and 24% on a no-event day. Although, as expected, the street parking occupancy in the late evening is higher when a game takes place at AT&T Park, it is not as high as during the midday, which represents the peak parking demand period.

Off-Street Parking

The Mission Bay campus site currently has almost 1,600 parking spaces located in the 1630 Third Street Garage, 1675 Owens Street Community Center Garage, and in three surface parking lots. They all offer a combination of public, patient and UCSF-only permitted parking spaces. Non-UCSF-owned off-street public parking also is available at the 1670 Owens Street Garage (approximately 800 spaces) and at the 450 South Street Garage (about 1,400 spaces).

Overall off-street parking occupancy is 19% during the morning period and 69% during the midday period, while the overall occupancy in the evening is 41%. The overall parking occupancy at the UCSF parking facilities is substantially higher than at the other garages, reaching 85% at midday, the peak parking demand period. An occupancy above 90 percent, such as at the Third Street garage, typically represents that the facility has reached its effective capacity. Similar to the on-street parking occupancy conditions described above, the off-street parking occupancy in the late evening when a game takes place at AT&T Park is not as high as during the midday period.

7.14.3 Transportation and Traffic – Mission Bay Campus Site Impacts and Mitigation Measures

7.14.3.1 Impact Methodology

Analysis Approach

The transportation analysis in this EIR considers operations-related issues related to vehicular traffic, transit facilities, pedestrians, bicyclists, and parking, as well as construction-related impacts, associated with the 2014 LRDP at the Mission Bay campus site. To determine potential impacts on the transportation system, it was first necessary to establish the background transportation conditions for the horizon years. Future year background conditions for this project are based on the countywide travel demand model developed and maintained by the San Francisco County Transportation Authority (SFCTA).

Vehicle, pedestrian, bicycle, and transit travel demand associated with the 2014 LRDP was estimated based on factors developed from extensive surveys conducted at existing UCSF facilities over the past few years, and through the use of a four-step process: trip generation, mode split, trip distribution, and trip assignment. In the first step, the number of person trips generated by the 2014 LRDP was estimated on a daily, AM and PM peak hour basis. Next, the person trips were assigned to different modes of travel (automobile, transit, UCSF shuttle, bicycles, etc.). Then, the geographic distribution of the trip origins and destinations was predicted, and finally, project trips for each mode were assigned to specific streets, UCSF shuttle routes and transit lines along the transportation network.

Travel Demand Estimates

The 2014 LRDP proposes various levels of growth at each campus site through the plan horizon year of 2035. Some known projects, such as Phase 2 of the Medical Center in Mission Bay, are currently projected to occur between 2035 and 2040, after the 2014 LRDP horizon year, but have been incorporated into the travel demand estimates presented in this document, As such, the transportation analysis represents a conservative approach as it includes development five years past the 2015 LRDP horizon, to the year 2040. Each campus site is expected to increase in population through the 2014 LRDP horizon year, with the highest growth expected at the Mission Bay site.

The Mission Bay campus site is estimated to generate a total of approximately 38,688 new daily person trips by 2040. That number of trips reflects the total number of additional person trips that would be generated by the increased campus site population, but it does not reflect trips associated with the internal trips expected to occur within the campus site. An internal trip is a trip with its origin and destination within the same campus site (e.g., a researcher at the Parnassus Heights campus site traveling from her office to the Millberry Union to eat lunch and returning back to her office afterwards). Taking those internal trips into account, the Mission Bay campus site is estimated to generate approximately 33,749 new external daily person trips by 2040. An interim trip generation assessment was also conducted at the Mission Bay campus site only for

the year 2015, when Phase 1 of the Medical Center project is expected to open. With the opening of Phase 1 of the Medical Center, there would be an increase of about 9,420 external daily person trips.

"Mode choice" is the designation of trips to the various means that people use to travel, such as automobile, transit, walking, bicycling, taxi, or other mode of transportation. The determination of the mode of transportation used in trips to and from the Mission Bay campus site would depend on many characteristics of the trip (e.g., the population group that is, faculty, staff, vendor, patient, visitor), the type of trip (work, visit), and the specific site. Travel mode split and average vehicle occupancy assumptions were based on information collected by UCSF and its consultants, with the estimates of the future modal share based on the current modal splits for each campus site by population type, which take into account the transit accessibility, UCSF shuttle service, parking availability, and TDM measures being provided at each campus site; this approach is consistent with the travel demand methodologies established by the SF Planning Department. The majority of Mission Bay campus site trips arrive/depart the campus site by driving and public transit. The above-cited external daily person trips generated by the Mission Bay campus site (by 2015 and 2040) are expected to use the following travel modes:

	2015	2040
Auto Drive Alone	3,757	12,872
Drop-Off/Taxi	282	988
Carpool/Vanpool	819	2,649
Public Transit	2,097	7,472
UCSF Shuttle	934	5,256
Bicycle/Motorcycle	557	1,856
Walk	974	2,656

The auto drive alone, drop-off/taxi, carpool/vanpool, and UCSF shuttle person trips would generate about 4,051 and 14,974 daily vehicle trips in 2015 and 2040, respectively.[21]

By 2015, approximately 680 new vehicle trips would occur during the AM peak hour, and about 490 new vehicle trips would occur during the PM peak hour. By 2040, approximately 2,880 new vehicle trips would occur during the AM peak hour, and about 2,410 new vehicle trips would occur during the PM peak hour.

Regarding increased transit ridership, with a majority of transit users using Muni, BART and the UCSF shuttle bus service, by 2015, there would be approximately 690 new transit riders in the AM peak hour and 560 new transit riders in the PM peak hour. By 2040, there would be approximately 3,180 new transit riders in the AM peak hour and 2,920 new transit riders in the PM peak hour.

The new trips associated with the Mission Bay campus site were assigned to San Francisco and regional origins/destinations, including the four San Francisco Superdistricts (northeast,

[21] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

northwest, southeast, and southwest quadrants of the City), the East Bay, the North Bay, and the South Bay, as well as areas outside the Bay Area region. Information collected by UCSF as part of its yearly commute surveys of employees, patients, visitors and residents was used in this analysis.

7.14.3.2 Construction Period Impacts

Impact TRAF-MB-1: Implementation of the 2014 LRDP on the Mission Bay campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during construction activities. (Potentially Significant)

Impacts associated with demolition and construction activities that would occur as the 2014 LRDP is implemented are addressed in Chapter 5 (Impact TRAF-LRDP-1). That 2014 LRDP Plan-Level analysis determined that although construction activities would be temporary, construction impacts would be considered potentially significant given the magnitude of LRDP development over the course of many years and need for on-going coordination and monitoring. The potentially significant determination would apply to the LRDP elements of the Mission Bay campus site. The implementation of LRDP **Mitigation Measure TRAF-LRDP-1: Construction Coordination and Monitoring Measures** would reduce construction-period impacts to less-than-significant levels.

Mitigation Measure: Implement **Mitigation Measure TRAF-LRDP-1**

Significance after Mitigation: Less than Significant

7.14.3.3 Operational Impacts

Impact TRAF-MB-2: Implementation of the 2014 LRDP on the Mission Bay campus site would increase traffic at intersections on the adjacent roadway network. (Less than Significant)

Table 7.14-2 presents a summary comparison of Existing and Existing plus Plan intersection LOS for the weekday AM and PM peak hours. The Existing Plus LRDP conditions reflects modifications to the lane geometries and signal timing plans proposed by both the LRDP and foreseeable (funded) infrastructure improvements for several study intersections surrounding and within the Mission Bay Campus Site. In general, the addition of 2014 LRDP-generated traffic would result in small changes in the average delay per vehicle at most study intersections, with the exception of those that serve as major access points on Sixteenth Street. Most study intersections would continue to operate at the same service levels as under Existing conditions. The great majority of the study intersections operate at acceptable levels of service (LOS D or better) under both AM and PM peak hour conditions under Existing conditions, and would continue to operate acceptably under Existing Plus 2014 LRDP conditions.

TABLE 7.14-2
EXISTING AND EXISTING PLUS 2014 LRDP
PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – MISSION BAY

Intersection	Traffic Control[a]	Peak Hour	Existing		Existing plus 2014 LRDP	
			Delay (sec.)[b]	LOS[c]	Delay (sec.)[b]	LOS[c]
24. King Street / Third Street	Signal	AM	46	D	53	D
		PM	**70**	**E**	**73**	**E**
25. King Street / Fourth Street	Signal	AM	43	D	44	D
		PM	53	D	53	D
26. Brannan Street / Seventh Street	Signal	AM	14	B	26	C
		PM	25	C	53	D
27. Channel Street / Third Street	Signal	AM	40	D	44	D
		PM	30	C	48	D
28. Channel Street / Fourth Street	Signal	AM	23	C	26	C
		PM	16	B	17	B
29. Mission Rock Street / Third Street	Signal	AM	37	D	39	D
		PM	29	C	41	D
30. Mission Bay Boulevard North / Third Street	Signal	AM	17	B	19	B
		PM	16	B	17	B
31. Mission Bay Boulevard South / Third Street	Signal	AM	23	C	23	C
		PM	20	B	22	C
32. Mission Bay Drive / Owens Street	Round-about	AM	<10	A	<10	A
		PM	<10	A	<10	A
33. Mission Bay Drive / Seventh Street	Signal	AM	20	C	34	C
		PM	22	B	37	D
34. 16th Street / Third Street	Signal	AM	36	D	49	D
		PM	31	C	35	D
35. 16th Street / Fourth Street	Signal	AM	26	C	42	D
		PM	27	C	30	C
36. 16th Street / Owens Street	Signal	AM	32	C	23	C
		PM	30	C	32	C
37. 16th Street / Seventh Street	Signal	AM	43	D	53	D
		PM	44	D	46	D
38. 16th Street / Rhode Island Street	Signal	AM	15	B	33	C
		PM	13	B	13	B
39. 16th Street / Vermont Street	Signal	AM	19	B	42	D
		PM	15	B	16	B
40. 16th Street / Potrero Avenue	Signal	AM	27	C	43	D
		PM	35	C	53	D
41. Mariposa Street / Third Street	Signal	AM	52	D	51	D
		PM	28	C	40	D
42. Mariposa Street / Fourth Street	Signal	AM	<10	A	20	B
		PM	11	B	19	B
43. Mariposa Street / I-280 Northbound Ramps	Signal	AM	**73**	**E**	34	C
		PM	31	C	33	C
44. Mariposa Street / I-280 Southbound Ramps	SSS	AM	**>50**	**F**	<10	A
		PM	**>50**	**F**	14	B

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersections, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach (indicated in parentheses).
[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersections, LOS is based on the worst approach, which for AWS is indicated in parentheses.
[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

The following study intersections (listed by intersection number in Table 7.14-2) currently operate at unacceptable levels of service (LOS E or F):

24. King Street / Third Street (PM peak hour)
43. Mariposa Street / I-280 Northbound Ramp (AM peak hour)
44. Mariposa Street / I-280 Southbound Ramp (AM and PM peak hours)

The 2014 LRDP would add 36 vehicle trips to the critical eastbound left turn movement (LOS F) during the PM peak hour at the King Street/Third Street (Intersection #24) signalized intersection, which represents a four percent increase from Existing conditions. The 2014 LRDP would add two vehicle trips to the westbound through movement (LOS E), which is an increase of less than one percent. Those percent increases would be less than the threshold of significance, and the 2014 LRDP's contribution (and impact) would be considered less-than-significant.

The reconfiguration of Mariposa Street/I-280 Northbound Ramp (Intersection #43), and signalization and reconfiguration of Mariposa Street/I-280 Southbound Ramp (Intersection #44) would result in improved service levels at these intersections from unacceptable existing levels of service (LOS E or F) to acceptable levels of service (LOS D or better) under Existing Plus LRDP conditions. Therefore, the LRDP would have a less-than-significant impact at these three intersections.

Mitigation: None required.

Impact TRAF-MB-3: Implementation of the 2014 LRDP on the Mission Bay campus site would increase transit ridership demand. (Less than Significant)

As described in 7.14.3.1 above, by 2015,about 690 and 560 new transit trips are expected during the AM and PM peak hour, respectively, with a majority of transit users using Muni, BART and the UCSF shuttle bus service. By 2040, there would be approximately 3,180 new transit riders in the AM peak hour and 2,920 new transit riders in the PM peak hour.

San Francisco Muni

Existing Muni transit stops are located within a half-mile to the campus site and are accessible by walking. Major stop relocations adjacent to the campus site are not anticipated at this time. The TEP proposes to reduce headways for the T Third, and 10 Townsend (the latter to be renamed 10 Sansome). In addition, the TEP proposes to re-route the 22 Fillmore by continuing its route on Sixteenth Street between Kansas and Rhode Island streets to the Mission Bay campus site and reduce headways. Prior to this extension of the 22 Fillmore, the SFMTA proposes to implement a temporary motor coach service (preliminarily named the "55") between the campus site and the Sixteenth Street BART Station to coincide with the opening of Phase 1 of the Medical Center at Mission Bay. The route would follow Sixteenth Street between Mission Street to Third Street, and Third Street from Sixteenth Street to Mission Bay Boulevard North.

Once the estimated number of 2014 LRDP-generated Muni trips are added to the T Third and 10 Townsend, those Muni routes would continue to operate satisfactorily according to Muni

crowding standards.[22] The 22 Fillmore would operate at greater than 85% capacity utilization with the addition of 2014 LRDP-generated trips, but with the addition of the interim 55 Route, the combination of the 22 Fillmore and the 55 Route would operate at less than 85% capacity utilization during both the AM and PM peak hours.

The estimated number of 2014 LRDP-generated Muni trips traveling to and from the Mission Bay campus site would not require the expansion of transit service or facilities. Long-term funding for the 55 Route is uncertain, but if Muni were to discontinue the service, UCSF would replace the transit capacity with shuttle service adequate to fill the gap in transit service. Thus, this analysis includes the 55 Route as a de facto permanent service. Additionally, none of the specific proposals of the 2014 LRDP would reconfigure, or reduce access to, transit stops in a way that would degrade transit service to the campus site. Therefore, the 2014 LRDP's transit impact on Muni service would be considered less than significant.

Regional Transit

In addition to Muni operations for travel within San Francisco, regional transit services such as BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit were considered for the analysis. Existing stations are located over a mile away and can access the Mission Bay campus site by Muni or UCSF and MBTMA shuttles. Major service changes are not anticipated in the near term.

The number of new 2014 LRDP-generated regional transit trips would not require the expansion of regional transit service or facilities. Therefore, the 2014 LRDP's transit impact on regional transit service would be considered less than significant.

UCSF and Mission Bay Transportation Management Association Shuttle

The 2014 LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as 2014 LRDP projects are constructed and occupied. With the opening of the Phase 1 of the Medical Center at Mission Bay, additional shuttle stops will be provided fronting the new hospital, but headways and service route changes are not anticipated at this time.

An additional estimated 540 AM peak-hour shuttle person trips and 520 PM peak-hour shuttle person trips, an approximately 90% and 185% increase in shuttle person trips during the AM and PM peak hours, respectively, are anticipated through the 2014 LRDP horizon year, and that increase would be accommodated by periodically expanded UCSF shuttle service as implemented by UCSF Transportation Services as part of the 2014 LRDP. Therefore, the 2014 LRDP's transit impact on UCSF Shuttle service would be considered less than significant.

Mitigation: None required.

[22] Note that the 10 Inbound Townsend during the PM peak hour would operate at greater than 85% capacity utilization, both with and without the 2014 LRDP-generated trips, but the 2014 LRDP would not contribute to crowding on the line in a significant way.

Impact TRAF-MB-4: Implementation of the 2014 LRDP on the Mission Bay campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The 2014 LRDP proposes the extension of several streets through the campus site including Nelson Rising Lane east of Fourth, Fifth, and Sixth streets south of Mission Bay Boulevard South, and Owens Street south of Sixteenth Street. These streets would be designed with sidewalks, curb cuts, and crosswalks that minimize conflicts between vehicles and pedestrians and meet San Francisco's *Better Streets Plan* standards. In addition to these street extensions, UCSF is upgrading existing sidewalks along Sixteenth Street and constructing a new public pedestrian plaza on Fourth Street between Sixteenth and Mariposa streets in coordination with on-going construction. Beyond the campus site, no improvements to the pedestrian facilities in the area are proposed.

The 2014 LRDP would add approximately 2,840 and 2,440 pedestrian trips (mostly transit-access trips) to the surrounding streets during the AM and PM peak hours, respectively. The new pedestrian trips would be distributed along the many roadways and pedestrian alleyways crossing through the campus site. Pedestrian trips leaving the campus site to residential and commercial destinations would primarily occur along Sixteenth and Mariposa streets to the west, along Third and Minnesota streets to the south, and along Third, Fourth, and Seventh streets to the north. Muni transit riders would walk along Third Street to the T Third light rail line stops on Third Street and Gene Friend Way or Mariposa Street, and along Sixteenth and Connecticut streets to the 22 Fillmore stop at Eighteenth and Connecticut streets. Caltrain riders would walk north along Fourth Street to the station at Fourth and King streets. UCSF and Mission Bay TMA shuttle riders would stay within the campus site and use shuttle stops located on Fourth or Owens streets.

The above-described TEP improvements would, among other things, shorten the walking distance for transit riders and reduce travel time to the transit stops for each of these routes. Although pedestrian volumes are currently relatively low due to the developing nature of the Mission Bay neighborhood, existing pedestrian facilities are designed to accommodate higher pedestrian volumes than the 2014 LRDP would generate in the future, including the 12- to 15-foot-wide sidewalks and crosswalks.

The immediate area surrounding the Mission Bay campus site includes existing or proposed pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops. The 2014 LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the 2014 LRDP's impact to pedestrian circulation and facilities at the Mission Bay campus site would be less than significant.

Mitigation: None required.

Impact TRAF-MB-5: Implementation of the 2014 LRDP on the Mission Bay campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The area around the Mission Bay campus site has a number of streets with bicycle lanes, and streets designated as bicycle routes, including King Street, Sixteenth Street, Mariposa Street,

Fourth Street, and Seventh Street. The Mission Bay campus site is within convenient bicycling distance of residential and commercial areas in surrounding neighborhoods. The 2014 LRDP does not propose changes to the bicycle circulation network surrounding the Mission Bay campus site. The San Francisco Bike Plan includes (as a long-term project) a planned bikeway near/along Mission Creek between Fourth and Harrison streets. In addition, an expansion of the Bay Area Bike Share program currently is being evaluated and could include a new station at Fourth Street near Rock Hall on the Mission Bay campus site. The proposed implementation of this expansion is the fall of 2014.

The 2014 LRDP is expected to increase bicycle demand in the area by approximately 276 and 214 new trips during both the AM and PM peak hours, respectively. These trips would primarily occur on designated bicycle facilities, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated through the existing on-campus site parking supply in additional to new bicycle parking locations in future buildings and the potential Bay Area Bike Share station. In the near-term, UCSF plans to add one additional bicycle cage and 10 bicycle racks at the Mission Bay campus site, which would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The expected increase in bicycle traffic would not represent a level that would adversely affect bicycle facilities on the campus site, nor would the 2014 LRDP create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Therefore, the 2014 LRDP's impact to bicycle circulation and facilities at the Mission Bay campus site would be less than significant.

Mitigation: None required.

Impact TRAF-MB-6: Implementation of the 2014 LRDP on the Mission Bay campus site would increase loading demand. (Less than Significant)

The San Francisco Planning Code requires that land uses, such as medical offices and hospitals, provide off-street loading spaces according to a prescribed schedule. The required loading supply was estimated based on that Code schedule, and the existing and proposed loading supply exceeds the Code requirement at the Mission Bay campus site.

The demand for loading spaces through the 2014 LRDP horizon year was calculated based on surveys from the Parnassus Heights campus site and methods described in the City's *Transportation Impact Analysis Guidelines for Environmental Review*. The existing peak hourly demand is estimated to be about 34 spaces on the Mission Bay campus site, and the 2014 LRDP horizon year peak hourly demand is estimated to be about 77 spaces.

It is expected that the estimated 2014 LRDP loading supply should be adequate for the estimated demand, but as mentioned above, the campus sites are unique and should be monitored over time. This is considered a less-than-significant impact if UCSF continues to monitor loading operations and provide appropriate supply with guidance from the San Francisco Planning Code and existing operations.

In addition to freight loading, there is a demand for passenger loading spaces, and in order to estimate passenger loading demand, the drop-off/taxi service mode split and a portion of the carpool mode split percentages presented in 7.14.3.1 above was applied to the peak AM and PM peak-hour person trips. The peak-hour passenger loading demand is estimated to increase by approximately 270% at the Mission Bay campus site. The major contributor of the increase in anticipated passenger loading demand is the opening of Phase 1 and 2 of the UCSF Medical Center at Mission Bay.

The existing passenger loading supply is sufficient for the estimated 2014 LRDP loading needs during the PM peak hour and in need of an additional five feet to be sufficient for the AM peak hour. As part of the LRDP, additional passenger loading supply will be implemented in the form of driveway loops in front of the Women's, Cancer, and Children's Hospital on the south side of campus. Visitors and patrons would access the new northern passenger loading loop from Sixteenth Street, and the new southern passenger loading loop from Mariposa Street.

The combination of the new passenger loading loops at the Women's, Cancer, and Children's Hospital and adequate existing supply will be sufficient to accommodate the estimated 2014 LRDP demand; therefore, the 2014 LRDP's impact to passenger loading is considered less than significant.

Mitigation: None required.

Impact TRAF-MB-7: Implementation of the 2014 LRDP on the Mission Bay campus site would increase parking demand. (Less than Significant)

Under the 2014 LRDP, additional parking would be provided on the Mission Bay campus site, as warranted by the proposed development (i.e., the number of any new parking spaces would be determined as projects are proposed). It is estimated that the number of parking spaces owned by UCSF at the Mission Bay campus site would increase by approximately 1,050 spaces by 2015, and by an additional 2,750 spaces (total of 3,800 spaces) by 2040. The following list describes the currently proposed changes in parking supply:

- The 621-space garage structure at Owens Street, south of Sixteenth Street, would open for service to the public in February 2015, as the Phase 1 Medical Center becomes operational.
- A new 429-space surface parking lot adjacent to the above-cited new Owens Street garage would be built, which also would open in conjunction with the Phase 1 Medical Center Project.
- Approximately 160 existing surface parking spaces, located in the North Campus, would be eliminated as the existing parking lots are replaced by new buildings.
- A new parking garage would be built on Block 18B in the North Campus containing approximately 1,540 parking spaces. The ground floor of the garage would be sized to accommodate about 60 UCSF shuttle buses.
- About 500 new spaces would be provided within Blocks 33 and 34, east of Third Street.

- An expansion of the Owens Street garage would be constructed as part of the second phase of the Medical Center, sometime after 2035, to replace the 429-space Phase 1 surface lot that would be replaced by new hospital buildings, and to accommodate the additional expected demand. The new structure would be built to the south of the Phase 1 garage and could have a capacity of up to 1,300 spaces.

As described previously, the available on-street parking is well-occupied at the Mission Bay campus site, and has therefore not been considered as a resource for the future parking utilization analysis, which has focused instead on the availability of off-street parking.

By 2015, with the opening of the Phase 1 Medical Center and the completion of the Mission Hall Building, parking utilization at the UCSF parking facilities would be below, but close to, its maximum capacity, with a potential campus site surplus of about 230 spaces.

Assessment of the growth of peak parking demand under the 2014 LRDP shows that by 2040 the future parking utilization at the Mission Bay campus site would be approximately 430 spaces above the future planned supply. However, as part of the implementation of the 2014 LRDP, UCSF would monitor parking demand at each phase of development and adjust parking supply as demand warrants. Should the demand for parking exceed on-site supply, priority for on-site parking would be given to patients and visitors, and if necessary, UCSF would look to secure off-site parking to satisfy staff demand. That additional parking supply could be on the site, if available, or elsewhere in the vicinity. As the sites develop, UCSF (through its Campus Transportation Services Offices) will make efforts to educate faculty, staff and students about transit options in order to reduce auto usage and parking demand. Thus, the parking impacts under the 2014 LRDP would be less than significant.

Mitigation: None required.

LRDP Variant Conditions

As described in Section 3.8.2.3 of Chapter 3, *Project Description*, UCSF is considering the development of clinical uses for a portion of the Blocks 33 and 34 site. The amount of clinical space that may be developed has not yet been determined, but up to half of the site (about 250,000 gsf of clinical space) could be developed, with the remainder as research/office use.

Travel Demand. Under the LRDP Variant, the Mission Bay campus site would generate approximately 2% more vehicle trips during both the AM and PM peak hours when compared to the 2014 LRDP. The travel demand for other travel modes (walking, bicycling, and transit) for the Mission Bay campus site also would be about 2% higher compared to the 2014 LRDP. The estimated increase in loading demand (service and passenger) and parking demand at the Mission Bay campus site under the LRDP Variant would be similar, if not slightly more due to the introduction of clinical space, to that generated by the 2014 LRDP.

Existing Plus LRDP Variant Impacts. All the study intersections for the Mission Bay campus site would continue to operate at the same levels of service as under Existing Plus 2014 LRDP

conditions, and like for the 2014 LRDP, the LRDP Variant would have a less-than-significant traffic impact.

Transit service conditions (for Muni, regional transit, and UCSF and MBTMA shuttle buses) associated with the LRDP Variant would be similar to those for the 2014 LRDP, albeit with slightly (about 2%) higher ridership levels than under the 2014 LRDP. Like for the 2014 LRDP, the LRDP Variant would have a less-than-significant transit impact. The T Third would operate at greater than 85% capacity utilization with the addition of LRDP Variant-generated trips under the AM peak hour in the outbound direction (towards UCSF). While this is not considered a significant impact per UCSF transit standards, this would exceed Muni's crowding standards. Therefore, the following Improvement Measure has been identified:

> Development of clinical uses on Blocks 33/34 is considered a "secondary use" under the *Mission Bay South Redevelopment Plan*, which requires findings by the Office of Community Investment and Infrastructure that the use is consistent with the *Mission Bay South Redevelopment Plan*. UCSF would continue to study the amount of clinical space proposed under the LRDP Variant, and would refine the proposal before bringing it forth to the City for approval. In refining the LRDP Variant, UCSF would consider reducing the size of the clinical facilities at Blocks 33/34 to a level that will reduce the transit ridership on the T Third to less than the Muni's capacity utilization of 85 percent.

Likewise, pedestrian, bicycle, loading (commercial and passenger), and parking impacts associated with the LRDP Variant, as for the 2014 LRDP, would be less than significant. Finally, similar to the 2014 LRDP, impacts associated with demolition and construction activities that would occur as the LRPD Variant is implemented at the Mission Bay campus site would be considered potentially significant. The implementation of LRDP **Mitigation Measure TRAF-LRDP-1: Construction Coordination and Monitoring Measures** would reduce construction-period impacts to less-than-significant levels.

7.15 Utilities and Service Systems

This section considers the setting and utilities and service system impacts of implementation of the 2014 LRDP at the Mission Bay campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Utilities and Service Systems are contained in Section 4.15 of this EIR. The CEQA Significance Standards presented in Section 4.15.3 are used to evaluate the potential utilities and service systems impacts of all proposed 2014 LRDP activities.

The overall effects on water supply, wastewater treatment, storm drainage facilities, solid waste disposal and energy demand resulting from implementation of the 2014 LRDP were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. As discussed in Chapter 5, these overall effects would be less than significant. Impacts that are specific to the Mission Bay campus site are discussed below.

7.15.1 Utilities and Service Systems – Mission Bay Impacts and Mitigation Measures

Impact UTIL-MB-1: There would be sufficient water supply infrastructure to serve 2014 LRDP development at the Mission Bay campus site. (Less than Significant)

Engineering studies have determined that it is not necessary to replace and/or upsize City low pressure piping already constructed, as there is sufficient capacity in the pipe system to supply increased water demand in order to serve the proposed 2014 LRDP development at the Mission Bay campus site, including development on Blocks 33 and 34. However, in order to obtain required pressures within proposed buildings, water pumps may need to be installed. This would be determined at the time buildings are designed (Freyer & Laureta, Inc, 2013 and 2014). The impact would be less than significant.

There also is sufficient capacity in the Fire Protection Water Supply System to meet fire flow requirements for each proposed building, including development on Blocks 33 and 34 (Freyer & Laureta, 2013 and 2014). Additional campus fire protection water supply piping would need to be installed by UCSF per Exhibit 4, Low Pressure Water Exhibit, as described in the *UCSF Mission Bay Civil Master Plan*, adjacent to development blocks to serve future buildings (Freyer & Laureta, Inc, 2013). The impact would be less than significant.

Mitigation: None required.

Impact UTIL-MB-2: There may be impacts related to wastewater infrastructure as a result of 2014 LRDP development at the Mission Bay campus site. (Potentially Significant)

UCSF independent engineering studies based on pre-hospital sanitary sewer flows (original projects) have determined that it is not necessary to replace and/or upsize City and University sanitary sewer conveyance piping already constructed in order to serve the proposed growth at the

Mission Bay campus site, including development on Blocks 33 and 34. The City has not validated these studies and will still need to evaluate collection system capacities to ensure adequate capacity remains during detailed project design phase(s). However, sanitary sewer piping would need to be constructed to serve future development parcels. This does not deviate from the *UCSF Mission Bay Civil Master Plan* (Freyer & Laureta, Inc, 2013 and 2014).

The estimated peak flow increase to the pump station on Mission Bay Redevelopment Area Block P15 due to the University's proposed growth is 159 gallons per minute (0.23 million gallons per day), resulting in the need for pump station capacity of 6.63 million gallons per day. This is below the pumping capacity of the pump station. Based on engineering studies and original projections of demand at the UCSF campus to provide extra capacity for UCSF LRDP, the pump station can be modified without structural or piping modifications by replacing existing 25 horsepower (hp) pumps with 30 hp pumps. These more powerful pumps are physically the same size as the existing pumps and can be connected to the existing discharge piping. Replacement of existing pumps with 30 hp pumps would increase the pump station capacity to 5,100 gpm (7.34 million gallons per day) (Freyer & Laureta, Inc, 2013). However, these engineering studies' assumptions will need to be confirmed with the San Francisco Public Utilities Commission (SFPUC). The SFPUC has recently indicated that additional upgrades and modifications to the P15 pump station may include (1) replacement of existing pumps with larger pumps than those assumed above; (2) additional pumps and enlargement of the pump station wet well with associated controls; (3) modification of the force main; (4) odor control; (5) other modifications may be necessary for proper operations. (Michael Tran, SFPUC, August 7, 2014). However the University will only address pump capacity and not any pre-existing pump station deficiencies observed by the SFPUC.

The replacement of the P15 pumps proposed by UCSF would be subject to review and approval by the SFPUC. Because it is unknown at this time whether the SFPUC would approve this upgrade or require additional modifications to the P15 pump station, UCSF has conservatively concluded that potential improvements to the P15 pump station may be required that may also result in physical environmental effects.

The planned storm drain pump station on Block P23 (to be installed by FOCIL-MB, LLC/Mission Bay Development Group) would remove stormwater that is currently directed to the Mariposa Pump Station. Mariposa Pump Station is a combined sewer pump station, but it will be used to convey sanitary flows for the areas within Mission Bay, including the Phase 1 Medical Center at Mission Bay, when the storm drain pump station on Block P23 is complete. The new storm drain pump station on Block P23 would drastically reduce the volume of Mission Bay wet weather flow from entering the Mariposa Pump Station. Although Mission Bay wet weather flow would not be directed to the Mariposa Pump Station in the future (when the storm drain pump station on Block P23 is complete), the station must be operated with a clear distinction between wet and dry weather under strict State and Federal regulations, and thus not increase the actual dry weather capacity of the pump station.

However, the SFPUC has recently indicated to UCSF that average dry weather flows to the Mariposa Pump Station are exceeding previous projections and existing capacity for dry weather

flows, which in turn requires occasional use of the wet weather pumps to handle the increased dry weather flows. This flow increase is not a result of UCSF Mission Bay development since developed blocks in Mission Bay do not yet discharge the projected flow rate from blocks tributary to the Mariposa Pump Station, as defined in the *Mission Bay Sanitary Sewer Master Plan.* The SFPUC has further indicated to UCSF that the dry weather pump station may need to be upsized to handle increased demand in dry weather flows to the Mariposa Pump Station. The SFPUC is currently evaluating the adequacy of temporary measures such as pipe reconfiguration to handle existing and planned flows during the interim period between the opening of the Phase 1 Medical Center on February 1, 2015 and a permanent long term solution for Mariposa Pump Station and the associated growth in the pump station service area. (Michael Tran, SFPUC, August 1, 2014). It is not known at this time whether any pipe improvements downstream of the pump station has affected pump performance at this time.

Because it is unknown at this time whether the capacity of the Mariposa Pump Station and associated sanitary collection system are adequate to handle flows resulting from 2014 LRDP development at the Mission Bay campus site, UCSF has conservatively concluded that potential improvements to the pump station may be required that may also result in physical environmental effects.

> **Mitigation Measure UTIL-MB-1:** UCSF will monitor sanitary sewer flows to the P15 pump station in congruence with on-going monitoring conducted by the SFPUC. If the SFPUC determines that improvements are required to increase the capacity of the P15 pump station as a result of development within the pump station basin, including 2014 UCSF LRDP development at the Mission Bay campus site, UCSF will contribute its fair share to SFPUC for the potential required pump capacity improvements.
>
> UCSF will monitor sanitary sewer flows to the Mariposa Pump Station in congruence with on-going monitoring conducted by the SFPUC. If the SFPUC determines that improvements are required to increase the capacity of the Mariposa Pump Station as a result of development within the pump station basin, including 2014 UCSF LRDP development at the Mission Bay campus site, UCSF will contribute its fair share to SFPUC for the potential required improvements.
>
> **Significance after Mitigation: Significant and Unavoidable**. Because potential improvements are outside UCSF jurisdiction to implement, the impact is considered significant and unavoidable even with the incorporation of the above-noted mitigation measures.

Impact UTIL-MB-3: There would be sufficient storm drainage infrastructure to serve 2014 LRDP development at the Mission Bay campus site. (Less than Significant)

The storm drain piping in the public streets surrounding and traversing the Mission Bay campus site is of sufficient size to collect planned 5-year storm runoff from the campus site. The increase in growth proposed by the 2014 LRDP does not increase planned drainage volumes from development blocks. Based upon understanding of the *Mission Bay Storm Drainage Master Plan* and Campus Storm Drain Piping, engineering studies have determined there is no need to replace and/or upsize City and University storm drainage conveyance piping already constructed

(Freyer & Laureta, Inc, 2013). The planned storm drain pump on Block P23 should be constructed in order to serve development of Blocks 33 and 34 (Freyer & Laureta, 2014). The impact would be less than significant.

Mitigation: None required.

7.15.2 References

Freyer & Laureta, Inc., *UCSF Long Range Development Plan Entitlement Increase Analyses*, May 17, 2013.

Freyer & Laureta, Inc., *Blocks 33/34 Infrastructure Analyses*, February 2014.

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CHAPTER 8
Mount Zion Campus Site – Setting, Impacts and Mitigation Measures

8.0 Introduction

This chapter considers the existing conditions and describes the potential impacts of 2014 LRDP activities proposed at the Mount Zion campus site. Functional zones, space program, population at LRDP horizon and proposed LRDP development activities that would occur at the Mount Zion campus site were described in detail in Section 3.8.3 of Chapter 3, *Project Description*, and are summarized briefly below. The remaining 15 major sections of this chapter present the site settings and impacts for each of the 15 environmental topics.

8.0.1 Functional Zones

Currently, there is no functional zone diagram for the Mount Zion campus site. **Figure 3-13**, in Chapter 3, *Project Description*, illustrates the proposed campus boundary and functional zones. The proposed boundary encompasses only those buildings owned by UCSF. A majority of the site is proposed as Clinical, consistent with the predominance of inpatient and outpatient uses. The cancer research building is designated as Research. Support areas include structured parking controlled by UCSF.

8.0.2 Space Program

The LRDP proposes an additional 2.39 million gsf in owned and leased buildings across all of UCSF's campus sites through 2035. The 172,600 gsf allocation of this growth at the Mount Zion campus site at LRDP horizon in 2035 is shown in **Table 8.0-1**, below.

8.0.3 Population

The total projected UCSF population across all campus sites (including population associated with the Phase 2 Medical Center at Mission Bay) would increase by approximately 17,000 at LRDP horizon. As shown in **Table 8.0-2**, below, the projected increase in population at the Mount Zion campus site would be approximately 1,600 in 2035.

TABLE 8.0-1
MOUNT ZION EXISTING AND LRDP HORIZON GSF

Type of Space	Existing 2013 Total gsf	LRDP Horizon 2035 Total gsf
Instruction	63,300	63,300
Research	97,400	139,300
Clinical	450,100	518,200
Support		
Academic Support	20,900	45,800
Academic/Campus Admin	72,900	111,900
Campus Community	17,300	17,300
Logistics	45,100	44,000
Support Subtotal	156,200	219,000
Housing	--	--
Vacant/Alteration	9,200	9,000
Total	**776,200**	**948,800**

TABLE 8.0-2
MOUNT ZION EXISTING AND PROJECTED POPULATION

	Existing (2013)	Projected Population at LRDP Horizon (2035)	Change
Students	215	277	62
Faculty and Staff	1,835	2,484	649
Patients	1,406	1,962	556
Visitors	1,199	1,547	348
Total	**4,655**	**6,270**	**1,615**

8.0.4 Mount Zion – 2014 LRDP Proposals

As described in Chapter 5, the 2014 LRDP proposals at the four campus sites consist of four general activities: 1) demolition, 2) renovation, 3) construction of new facilities, and 4) circulation, open space, and utilities/infrastructure proposals. The 2014 LRDP proposals at the Mount Zion campus site are listed below:

Demolition Proposals

- Hellman
- Harold Brunn Institute
- Dialysis Center
- 2255 Post[1]

Renovation Proposals

- Main Hospital

[1] This building may alternatively be seismically retrofitted.

Construction Proposals[2]

- Office/Research building

Mount Zion – 2014 LRDP Proposal Construction Time Frames

Activities at the Mount Zion campus site to implement the 2014 LRDP proposals would occur between the year 2015 and 2025. These are presented in **Table 8.0-3**, below.

TABLE 8.0-3
PROPOSAL CONSTRUCTION TIME FRAMES AT MOUNT ZION

Proposal Category	Proposal Title	Square Feet / Number of Dwelling Residential Units
2015 - 2019		
Demolition	Hellman, Brunn, and Dialysis Center	85,000 gsf
Renovation	Main Hospital	--
Construction	Office/Research building	257,300 gsf
2020 -2024		
Demolition (or Renovation)	2255 Post Street	7,450 gsf
2025-2030		
None Proposed		
2031 -2035		
None Proposed		

[2] An additional 78,000 gsf of parking may be developed either underground or off-site.

8.1 Aesthetics

This section considers the setting and aesthetics impacts at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential Aesthetics effects are contained in Section 4.1 of this EIR. The CEQA Significance Standards presented in Section 4.1.3 are used to evaluate the potential aesthetics impacts of all proposed 2014 LRDP activities.

8.1.1 Aesthetics Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Scenic vista.** No activities would result in an adverse impact to scenic vistas. Therefore, no additional analysis of this issue is required.

- **Scenic resources.** No activities would result in an adverse impact to scenic resources within a state scenic highway. Therefore, no additional analysis of this issue is required.

- **Effects on visual character or quality.** The proposed construction of the Office/Research Building would be the only activity to have potential effects on visual character or quality. No analysis of this issue is required for the other activities.

- **Wind or shadow.** The proposed construction of the Office/Research Building would be the only activity to have potential effects regarding wind or shadow. Accordingly, no analysis of this issue is required for any other activity.

Finally, the Initial Study also concluded that the proposed renovation of the Main Hospital would result in no impact or less-than-significant impacts on aesthetics. Therefore, no additional analysis is required for this renovation activity.

8.1.2 Aesthetics – Mount Zion Setting

The Mount Zion campus site occupies approximately 7.6 acres on six contiguous blocks in San Francisco's Western Addition, an urban neighborhood that consists of commercial, medical, residential and neighborhood commercial uses. The campus site is generally bounded by Bush Street to the north, Scott Street to the east, Post Street to the south and Broderick Street to the west. Unlike the Parnassus Heights campus site, the Mount Zion campus site is visually intertwined with adjacent, non-University uses and the campus buildings are not perceived as a single visual entity.

The Medical Center at Mount Zion is located on the central, or main block, and consists of an eight-story medical center housed in two buildings (Buildings A and B). Building A is on the north side of Post Street, with a 275-foot frontage that creates an unbroken visual plane for about three-quarters of the block. The hospital's long, horizontal bands of inset windows lend to its

visual prominence on the block. Building B is perpendicular to Building A and has a narrow frontage located mid-block on Sutter Street, adjacent to the hospital's loading area.

Other medically-related uses line the perimeter of the main block in dense buildings up to five stories tall. These include the five-story Hellman building on the southeast corner of Post and Scott Streets; the four-story Harold Brunn Institute located mid-block on Scott Street; the single-story Dialysis Center on the corner of Sutter and Scott Streets; and the five-story outpatient Helen Diller Comprehensive Cancer Center on the corner of Divisadero and Sutter Streets. The Cancer Research building and Women's Health Center are located in an eight-story contemporary building across Sutter Street from Building B. To the northeast and southwest of the main block are two UCSF outpatient medical office buildings of four stories each, completed in 1997. UCSF also owns and operates three parking garages and one surface parking lot at the Mount Zion campus site.

Most buildings along Divisadero Street consist of residential and office uses above ground floor retail. Kaiser Medical Center is located on Geary Boulevard, one block to the southwest. Residential uses are widespread north and west and directly across Scott Street to the east of the main block. The area along Post Street south of the main block is predominantly low-rise medical offices, portions of which are leased by UCSF, and surface parking lots. The Hamilton Recreation Center is located southeast of the Hellman building, at the intersection of Post and Scott Streets.

8.1.3 Aesthetics – Mount Zion Impacts and Mitigation Measures

Impact AES-MZ-1: The proposed office/research building at the Mount Zion campus site would not substantially degrade the existing visual character or quality of the campus site and its surroundings. (Less than Significant)

The proposed office/research building would be would be built on the east side of the main block where the Hellman, Harold Brunn Institute and Dialysis Center buildings are currently located. The proposed building could potentially be one or more buildings, or a phased building. The total program target for the building(s) would be approximately 257,300 gsf. Although this building has not yet been designed, a capacity analysis conducted by UCSF indicated that a building along Scott Street could be built up to 65 feet tall with a 20-foot step back at the 40-foot height level to lower the building scale at the street level. It could be set back from Post Street to align with the existing hospital building. Building space on Sutter Street could be up to 105 feet in height with a 20-foot setback along Sutter and Scott Streets. The proposed building would comply with the City's height limit, but not the bulk limit. Up to 185 parking spaces could be constructed in two levels underground, if not developed off-site. Streetscape improvements would be made along the affected street frontages. Visual simulations showing basic height and bulk of the proposed building from the intersection of Scott Street and Post Street and from the intersection of Scott Street and Sutter Street (viewpoints shown in **Figure 8.1-1**) are depicted in **Figures 8.1-2** and **8.1-3**, respectively.

SOURCE: Environmental Vision

UCSF Long Range Development Plan Environmental Impact Report

Figure 8.1-1

Viewpoint Location-Mount Zion

Existing view from Scott Street at Post Street looking northwest (VP 1)

Visual Simulation of Proposed Project

Note: Visual simulation depicts potential building envelope, not proposed design.

SOURCE: Environmental Vision

Figure 8.1-2

Visual Simulation-Mount Zion

Existing view from Scott Street at Sutter Street looking southwest (VP 2)

Visual Simulation of Proposed Project

Note: Visual simulation depicts potential building envelope, not proposed design.

SOURCE: Environmental Vision

Figure 8.1-3

Visual Simulation-Mount Zion

As shown in Figure 8.1-2, this portion of the proposed building would be shorter than the existing Hellman building. The building would extend north down Scott Street at this same height in areas currently occupied by the shorter Harold Brunn Institute and Dialysis Center buildings. The 105-foot-tall portion of the proposed building along Sutter Street is visible in the background and also can be seen in Figure 8.1-3.

The new building would be built in accordance with UCSF's *Physical Design Framework* and *Facilities Design* Guidelines and would be consistent with the 2014 LRDP's Community Planning Principles regarding Building and Public Realm Design. It would be sited appropriately in the campus site's Clinical functional zone (newly designated by the 2014 LRDP). The design guidelines would ensure that the final design of the building responds to the form of adjacent buildings (e.g., in terms of massing and height) and the overall urban context of the Mount Zion campus site and surrounding neighborhood. Because the new building would be visually similar to existing uses on and adjacent to the site, the proposed building would not substantially degrade the visual character of the site and its surroundings. Therefore, effects to visual quality and character are less than significant.

Mitigation: None required.

Impact AES-MZ-2: The proposed office/research building at the Mount Zion campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area. (Potentially Significant)

The proposed building could increase ambient light levels due to light dispersion resulting from a larger building at this location. Increases in night lighting could affect nighttime views in this area from the surrounding neighborhood. New light sources could include street lights, illuminated signage, exterior safety lighting and light emitted from building windows. Glare could be generated from reflective building materials. Because specific architectural features and building materials of the new building have yet to be determined, the proposed improvements have the potential to include reflective surfaces, such as metal and glass. The resultant glare could affect nearby residents, pedestrians and passing motorists. **Mitigation Measure AES-LRDP-1** would be implemented to reduce the impact to a less than significant level. By employing appropriate design standards and minimizing the quantity of reflective material used in new construction, light and glare impacts and impacts to views related to lighting would be reduced to less-than-significant levels.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-1

Significance after Mitigation: Less than Significant

Impact AES-MZ-3: Construction of the proposed office/research building at the Mount Zion campus site could result in flood lighting sites during nighttime construction activities. (Potentially Significant)

Although construction operations are generally expected to take place during the day, some activities could be conducted at night to reduce noise, vibration or other effects on daytime office or research uses. To enable construction at night, flood lighting would be required. The use of

night lighting would have the potential to disturb residents in neighborhoods near the construction site, and potentially also affect nighttime views. Night lighting of the construction site would be temporary and would cease upon completion of construction. **Mitigation Measure AES-LRDP-2** would be implemented to reduce the impact of nighttime work lighting to a less than significant level.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-2

Significance after Mitigation: Less than Significant

Impact AES-MZ-4: The proposed office/research building at the Mount Zion campus site would cast shadow on the Hamilton Recreation Center. (Potentially Significant)

Development of an office/research building on the main block at the Mount Zion campus site could cast shadows on City property that is under the control of the Recreation and Park Department. That 3.97-acre property,[3] the site of the Hamilton Recreation Center, occupies the block bounded by Post Street, Steiner Street, Geary Boulevard and Scott Street.

Because the Hamilton Recreation Center property is protected by the City of San Francisco's Sunlight Ordinance, the proposed office/research building potentially could conflict with this established standard of significance for the City of San Francisco.

Shadow from the proposed building could reach into the western portion of the Hamilton Recreation Center property for up to approximately 30 minutes before the last hour before sunset on the summer solstice, when afternoon shadow from the building would reach farthest south and east during the entire year. Shadow from the building would reach the property in the afternoon two months before the solstice, would increase to a maximum on the solstice, and then decrease and disappear two months after the solstice.

Hamilton Recreation Center

The Hamilton Recreation Center includes a recently rebuilt Recreation Center building that contains an auditorium, gym, kitchen and a heated swimming pool with two indoor water slides. The Recreation Center also has a children's playground, two tennis courts, outdoor basketball court and green field space. The Recreation Center buildings are on the east end of the block, fronting Steiner Street, while the Western Addition Branch Library occupies the west end of the block. The library building, which fronts on Scott Street, is at the corner of Geary Boulevard and Scott Street, while the library's parking is to the north, at the corner of Scott and Post Streets.

San Francisco Planning Code Section 295

Section 295 of the Planning Code, the Sunlight Ordinance, was adopted through voter approval of Proposition K in 1984 to protect certain public open spaces from shadowing by new structures. Section 295 prohibits the issuance of building permits for structures or additions to structures greater than 40 feet in height that would shade property under the jurisdiction of or designated to be acquired by the Recreation and Park Commission, during the period from one hour after

[3] Designated as Lot 2 of Assessor's Block 0703.

sunrise to one hour before sunset, unless the Planning Commission, following review and comment by the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission, determines that such shade would have an insignificant impact on the use of such property.

In 1989, the two Commissions adopted shadow criteria for 14 downtown parks, including an Absolute Cumulative Limit[4] for new shadow for each open space and set forth qualitative criteria for assessing new shadow. For projects that would affect parks for which a quantitative limit was established, shadow impacts have typically been judged less than significant if the project would not exceed the Absolute Cumulative Limit.

In establishing the Absolute Cumulative Limits for the downtown parks, the Commissions generally relied upon the following guidelines: for smaller parks (of less than two acres) on which more than 20% of the potential "Proposition K" sunlight was in shadow under then-existing conditions, no additional shadow was to be permitted. (This standard was applied to nine downtown parks.) For larger parks (of two acres or more) with between 20% and 40% existing shadow, the Absolute Cumulative Limit was to be set at 0.1%; that is, an additional 0.1% more shadow square foot-hours would be permitted beyond existing conditions. For larger parks shadowed less than 20% of the time, an additional 1.0% new shadow was to be permitted. No guideline was provided for parks of less than two acres that have less than 20% existing shadow. These downtown parks guidelines also may be applied to other parks.

Applying these guidelines to Hamilton Recreation Center, as a "larger park" of more than two acres in size, the park would have an Absolute Cumulative Limit of either 0.1% or 1.0%, depending upon the amount of shadow that now falls on the park throughout the year. Either way, the new shadow from any new building could not exceed 1.0% of the theoretical available sunlight hours.

Because the potential shadow of the new building would be slightly less than the existing shadow cast by the Hellman building, the net effect on shadow would be to slightly reduce the shadow that falls on Hamilton Recreation Center property in late afternoons in the two months before and two months after the summer solstice. As a consequence, and with implementation of **Mitigation Measure AES-LRDP-4**, this impact would be considered less than significant.

Demolition of any or all of the Hellman, Brunn, or Dialysis Center buildings could increase sunlight on Hamilton Recreation Center property in late afternoons close to the summer solstice. This would occur until the office/research building is built.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-4

Significance after Mitigation: Less than Significant

[4] The Absolute Cumulative Limit is a quantitative measure of how much new shadow may be added to a park. The limit can be stated either as a shadow coverage quantity (in square foot-hours or as a percentage of the theoretical available sunlight hours on a park). Although it can be calculated knowing only the area of the park, establishing an appropriate criterion value of the Absolute Cumulative Limit for any park has been based on knowing the park's existing shadow coverage.

Impact AES-MZ-5: The demolition of the three existing buildings and construction of the office/research building at the Mount Zion campus site would create street-level winds that could be hazardous to pedestrians in the area. (Potentially Significant)

Winds experienced at the Mount Zion campus site have the same directional origins as winds at the Parnassus Heights campus site (see the detailed discussion in Section 5.1, *Aesthetics*). For the purposes of determining comfort or safety issues that might arise, it is only necessary to consider the stronger winds that occur. Based on data from the Bay Area Air Quality Management District's Fort Funston meteorological station, 33% of all winds measured there are SW, WSW or W winds with speeds of 7 mph or faster, while nearly 9% of all winds with speeds of 15 mph or faster come from the following directions – S, SSW, SW, WSW, W, WNW, and NW – each with roughly equal frequencies of occurrence. Strong storm winds can come from any direction, but of the 52 recorded hourly winds greater than 30 mph, only one came from the northeast, while the other 51 were from the SSW through the NNW.

In leaving the coastline and approaching Mount Zion, winds lose speed and become more turbulent. Pedestrian-level winds at Mount Zion, regardless of initial directions, will be shaped by the topography and the buildings that line the street grid. The stronger winds that approach Mount Zion from the SW through the NW directions would be perceived by observers at Mount Zion as being generally winds from the west.

Given the building configurations and street alignment at Mount Zion, these generally westerly winds encounter the existing hospital building first, strike the Divisadero Street façade nearly head-on and then flow around the building and along Sutter and Post Streets. The existing buildings along Sutter and Post Streets channel these flows, but do not strongly interact with them to affect wind conditions at street level. The present gap in the street wall mid-block on Sutter Street likely introduces turbulence into the pedestrian-level winds there.

The proposed office/research building would be up to 105 feet in height on Sutter Street with a 20-foot setback along Sutter and Scott Streets. The Scott Street frontage would be up to 65 feet tall with a 20-foot step back at the 40-foot height level. The building façade would set back from Post Street to align with the existing hospital building. As a result, the building would replace the building mass removed when the three existing buildings are demolished. The proposed office/research building would add new building mass and height mid-block along Sutter Street. Because the proposed office/research building design incorporates set-backs, any adverse wind effects at pedestrian level due to the added height of the new building would be relatively minor, compared to existing wind conditions.

Regardless of the design, the office/research building would be an in-fill building – replacing the Hellman, Harold Brunn Institute, and Dialysis Center buildings, and also filling in an existing gap in the street wall along Sutter Street – a factor that, it itself, typically improves pedestrian wind conditions immediately around the building.

The changes in wind conditions due to demolition of the Hellman, Harold Brunn Institute, and Dialysis Center buildings and the subsequent construction of the proposed office/research building would not result in a new Pedestrian-level wind hazard or increase an existing wind

hazard on adjacent sidewalks. The wind impact would be less than significant and no further mitigation would be required. Although there could be an indefinite amount of time between the demolition of one or more of these buildings and the construction of the office/research building, the wind effects would be a less-than-significant impact.

Should the design shape of the office/research building change, the new design should be evaluated with respect to wind hazard.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-3

Significance after Mitigation: Less than Significant

8.2 Air Quality

This section considers the setting and air quality impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Air Quality are contained in Section 4.2 of this EIR, while the plan-level Air Quality impacts of the 2014 LRDP are described in Section 5.1.2. The CEQA Significance Standards presented in Section 4.2.3 are used to evaluate the potential Air Quality impacts of all proposed 2014 LRDP activities.

8.2.1 Air Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Objectionable odors.** No activities would result in objectionable odors affecting a substantial number of people. Therefore, no additional analysis of this issue is required.

8.2.2 Air Quality – Mount Zion Setting

8.2.2.1 Sensitive Receptors

The closest sensitive receptors to the Mount Zion campus site consist of residential land uses approximately 100 feet east of the campus site on Scott Street, residential land uses approximately 100 feet north of the campus site on Bush Street and residential land uses south of Geary Boulevard about 400 feet south of the campus site. Additionally, there are recreational receptors (parks) located north west and northeast of the campus site.

8.2.2.2 Existing Stationary Sources of Air Pollution

The BAAQMD's inventory of permitted stationary sources of emissions identifies seven permitted stationary emission sources present within or near the 1,000-foot zone of influence of the campus site. These permitted facilities are inventoried in **Table 8.2-1** and are primarily made up of stationary diesel engines for back-up power generators and dry cleaners.

The Mount Zion campus site also operates fume hoods which emit TACs. These fume hood emissions do not require a permit from BAAQMD based on the operating throughput and therefore have not been assigned an existing risk value in BAAQMD databases like permitted sources. UCSF maintains an inventory of chemical throughput for each campus site and has implemented a series of correctional measures to reduce exposure to fume hood emissions which are expected to minimize health risks from fume hood emissions. The primary measure was to reduce the volume of chemical use within hoods which are now inventoried. At present there are approximately 48 active fume hoods in operation at the Mount Zion campus site.

TABLE 8.2-1
STATIONARY SOURCES WITHIN THE MOUNT ZION CAMPUS SITE AREA

Source #	Facility Type	Address
9701	Town Cleaners	2480 California Street
5755	UCSF	1600 Divisadero Street
8462	Sunshine Express Cleaners	1818 Divisadero Street
3829	Lofrano & Sons	1745 Divisadero Street
13887	Kaiser Permanente MOB	2238 Geary Boulevard
13888	Kaiser Permanente Garage	2130 O'Farrell Street
13889	Kaiser Permanente Garage	2190 O'Farrell Street

SOURCE: BAAQMD, 2012c and ESA.

8.2.2.3 Major Roadways Contributing to Air Pollution

Geary Boulevard and Divisadero Street are arterial streets in the existing local roadway system within the 1,000-foot zone of influence that have at least 10,000 vehicles in annual average daily traffic based on the City's SF CHAMP roadway model[5]. This traffic contributes to elevated concentrations of $PM_{2.5}$, DPM, and other contaminants emitted from motor vehicles near street level.

8.2.3 Air Quality – Mount Zion Impacts and Mitigation Measures

8.2.3.1 Construct Office/Research Building

Impact AIR-MZ-1: Implementation of the 2014 LRDP at the Mount Zion campus site would result in increased emissions of criteria air pollutants during demolition and construction activities. (Potentially Significant)

Construction activities would result in emissions of criteria pollutants from the use of heavy-duty construction equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the campus site. In addition, fugitive dust or PM_{10} emissions would result from excavation, trenching, and other construction activities.

2014 LRDP proposals for the Mount Zion campus site include: demolish the Hellman, Harold Brunn Institute (Brunn), and Dialysis buildings, construct an office/research building; and, renovate the Main Hospital. Construction-related emissions from these proposals were calculated using the California Emissions Estimator Model (CalEEMod), assuming completion by 2020 and

5 San Francisco Metropolitan Transportation Agency, Chained Activity Modeling Process version 4.3.0, Average Daily Traffic Volumes, provided to ESA August 2, 2012.

phasing lengths based on CalEEMod default estimates which are based on square footage for office and research buildings. All model inputs and outputs are provided in Appendix E.

Table 8.2-2 presents the average annual daily construction emissions generated by 2014 LRDP proposals at the Mount Zion campus site. As can be seen in Table 8.2-2, estimated average daily construction-related exhaust emissions would not exceed the thresholds for NOx, or particulate matter, but would marginally exceed the ROG threshold.

TABLE 8.2-2
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS WITHOUT MITIGATION - MOUNT ZION

	Estimated Emissions (lbs/day)			
Years	**ROG**	**NO_x**	**Exhaust PM_{10}[a]**	**Exhaust $PM_{2.5}$[a]**
2015	**55.53**	21.80	1.14	1.05
BAAQMD Considered Construction Threshold	54	54	82	54
Potential Significant Impact?	Yes	No	No	No

SOURCE: ESA (Appendix E)

The BAAQMD approach to analysis of construction-related particulate impacts (other than exhaust PM) emphasizes implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions. As indicated under Impact AIR-LRDP-4 in Section 5.2 of this EIR, the BAAQMD considers construction-related fugitive dust impacts of projects to be less than significant if a suite of recommended dust-control measures are implemented. Therefore, BAAQMD-identified Best Management Practices for control of fugitive dust are adopted Campus-wide in Section 5.2 as **Mitigation Measure AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions**. With this measure in place the construction-related fugitive dust impacts would be less than significant.

Mitigation Measure: Implement Mitigation Measures AIR-LRDP-1

Impact AIR-LRDP-4 identifies a significant and unavoidable LRDP construction-related air quality impact resulting from emissions of criteria air pollutants when the combined construction at all campus sites is considered. In response, **Mitigation Measure AIR-LRDP-2: Architectural Coatings** and **Mitigation Measure AIR-LRDP-3: Off-Road Equipment Control Measures** were adopted Campus-wide and therefore would also apply to construction projects at the Mount Zion campus site.

Mitigation Measures: Implement Mitigation Measure AIR-LRDP-2 and AIR-LRDP-3

Significance after Mitigation: Less than Significant

Impact AIR-MZ-2: Demolition and construction activities at the Mount Zion campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents. (Less than Significant)

2014 LRDP construction activities would produce DPM and $PM_{2.5}$ emissions due to combustion equipment such as loaders, backhoes, and cranes, as well as haul truck trips. These emissions result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Consequently, a health risk assessment was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The health risk assessment was based on recommended methodology of the state Office of Environmental Health Hazard Assessment and adopted by BAAQMD. The cancer risk to residential receptors assumes exposure occurs 24-hours per day for 350 days per year. Cancer risk to residential receptors is based on the exposure duration of the construction period.

Additionally, cancer risk estimates also incorporate age sensitivity factors (ASFs). This approach provides updated calculation procedures that factor in the increased susceptibility of infants and children to carcinogens as compared to adults. For estimating cancer risks for residential receptors over a 70 year lifetime, the incorporation of the ASFs results in a cancer risk adjustment factor of 1.7.

A summary of the health impacts related to 2014 LRDP construction activities at the Mount Zion campus site is presented in **Table 8.2-3**.

TABLE 8.2-3
CONSTRUCTION-RELATED HEALTH IMPACTS - MOUNT ZION

Receptor Type	Cancer Risk (per million) persons	Chronic Index	Acute Index	PM2.5 Concentration ($\mu g/m^3$)
School Children	0.01	0.01	0.01	0.01
Existing Residence (adult / child)	0.05 / 0.54	0.01	0.01	0.01
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

As shown in Table 8.2-3, the maximum cancer risk for an existing residence-adult and residence-child (located to the south of Sutter Street and west of Divisadero Street) would be 0.05 per million and 0.5 per million, respectively. The maximum cancer risk for a school-child receptor (Ben Franklin Middle School and Gateway High School) would be 0.01 per million persons. Thus, the cancer risk due to construction activities alone is below the BAAQMD threshold of 10 per million and would be less than significant.

The chronic HI would be 0.01 at all receptors. The chronic HI would be below the BAAQMD threshold of 1 and the impact of the 2014 LRDP construction activities at the Mount Zion campus site would be less than significant. The acute HI would be 0.01 at all receptors including Hamilton

Recreational Center. The acute HI would be below the BAAQMD threshold of 1 and the impact of the 2014 LRDP construction activities at the Mount Zion campus site would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.01 $\mu g/m^3$ for the schoolchild and the existing residences. The construction-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Impact AIR-MZ-3: Operations at the Mount Zion campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (Potentially Significant)

Development under the 2014 LRDP at the Mount Zion campus site would result in an increase in criteria air pollutant and precursor emissions, including ROG, NO_X, PM_{10} and $PM_{2.5}$ from a variety of emissions sources, including onsite area sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.) and mobile on-road sources. Operational emissions of criteria pollutants were estimated using the CalEEMod version 2013.2.2 emissions inventory model. All model inputs and outputs are provided in Appendix E.

One of the sources of operational emissions would be increased vehicle emissions from additional staff, patients, and visitors. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the 2014 LRDP (Adavant, 2014). Development at the campus site would generate an estimated 1,292 additional daily vehicle trips. In addition to exhaust emissions, vehicles would also generate PM_{10} and $PM_{2.5}$ from entrained road dust and tire and brake wear.

Emissions would also be generated by on-site natural gas combustion, operation of landscape maintenance equipment, and maintenance application of paint and other architectural coatings.

Demolition of the Hellman, Brunn and Dialysis buildings would not result in operational emissions, but instead could potentially reduce emissions from natural gas demand. It is assumed that program space and clinics now in the three buildings proposed for demolition would be accommodated by the renovated hospital and that current vehicle trips generated by uses to be demolished would remain. Renovation and decommissioning of the hospital would also likely result in a reduction in operational emissions from natural gas demand for which hospital land uses have a much higher demand than the proposed out-patient medical office uses. Consequently, there would be no increase in operational emissions from demolition proposals at the Mount Zion campus site.

Table 8.2-4 presents estimated operational emissions from development under the 2014 LRDP at the Mount Zion campus site. As shown in the table, without mitigation, operational emissions of NO_X and ROG, PM_{10} and $PM_{2.5}$ would be below threshold levels.

TABLE 8.2-4
UNMITIGATED OPERATIONAL CRITERIA POLLUTANT EMISSIONS- MOUNT ZION

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Mobile Sources[a]	3.42	6.23	5.55	1.56
Area Sources[a]	6.24	<0.001	<0.001	<0.001
Natural gas combustion	0.15	1.40	0.11	0.11
Total	**9.82**	**7.64**	**5.66**	**1.67**
Regional Significance Threshold	54	54	82	54
Significant Impact?	No	No	No	No

[a] Mobile sources are motor vehicles and trucks. Area sources include landscape maintenance (equipment used for these activities such as gasoline-powered lawnmowers and blowers), maintenance application of paints and other interior and exterior surface coatings, and increased use of consumer products that result in emissions of ROG. Natural gas combustion is for space and water heating.

SOURCE: ESA, 2014 (see Appendix E).

Although estimated emissions at the Mount Zion campus site would be less than the daily thresholds, **Impact AIR-LRDP-5** in Section 5.2 identifies a significant and unavoidable operational air quality impact resulting from emissions of criteria air pollutants when LRDP operations at all campus sites are considered. In response, **Mitigation Measure AIR-LRDP-4: BAAQMD-Suggested Operational Measures** was adopted Campus-wide and therefore would also apply to operation of projects at the Mount Zion campus site.

Mitigation Measure: Implement Mitigation Measure AIR-LRDP-4

Significance after Mitigation: Less than Significant

Impact AIR-MZ-4: Operations at the Mount Zion campus site under the 2014 LRDP would increase emissions of TACs and increase health risks for nearby residents. (Less than Significant)

Operations under the 2014 LRDP would not generate substantial DPM emissions. Development at the campus site would generate an estimated 1,292 additional daily vehicle trips from staff, students and visitors that would be almost entirely gasoline powered. The new office/research building proposed for the Mount Zion campus site under the 2014 LRDP could include new fume hoods for research or clinical purposes. However, these emissions would be partially offset by the demolition of the Brunn building, which currently has operational fume hoods. The increase in fume hood emissions from the new building would be expected to be less than that currently occurring at Genentech Hall on the Mission Bay campus site, which operates approximately 160 fume hoods. A recent health risk estimate of Genentech Hall identified the cancer risk from fume hoods to be 0.0217 in one million at the nearest off-site receptor to the northwest (UCSF, 2011). The health risk contribution from fume hoods in the new office/research building proposed for the Mount Zion campus site is expected to be less than this nominal contribution from Genentech Hall. No other new operational sources of TACs are proposed.

The proposed office research building could be as high as 105 feet. Buildings greater than 70 feet in height are required by building code to have a back-up emergency generator. Depending on the fuel source this generator may be a source of DPM. Per its Policy and Procedure Manual, the BAAQMD requires implementation of Best Available Control Technology for Toxics and would deny an *Authority to Construct* or a *Permit to Operate* for any new or modified source of TACs that exceeds a cancer risk of 10 in one million or a chronic or acute hazard index of 1.0. The permitting process under BAAQMD Regulation 2 Rule 5 requires a Health Risk Screening Analysis, the results of which are posted on the District's website. These permitting requirements would ensure that the health risks of any required generator would be less than significant.

Operations would have a less-than-significant impact with regard to health risks.

Mitigation: None required.

8.2.4 References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report, CEQA Thresholds of Significance Air Quality Guidelines, October 2009. Available at www.baaqmd.gov.

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BAAQMD, 2012. CEQA Air Quality Guidelines. Adopted June 2011, updated May 2012. Available at www.baaqmd.gov.

8.3 Biological Resources

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Biological Resources are contained in Section 4.3 of this EIR. The CEQA Significance Standards presented in Section 4.3.3 are used to evaluate the potential impacts to biological resources of all proposed 2014 LRDP activities.

After evaluation of the 2014 LRDP proposals at the Mount Zion campus site, the Initial Study concluded that all activities would result in no impact or less-than-significant impacts regarding biological resources issues. Therefore, no additional analysis is required.

8.4 Cultural Resources

This section considers the setting and cultural resources impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Cultural Resources are contained in Section 4.4 of this EIR. The CEQA Significance Standards presented in Section 4.4.3 are used to evaluate the potential impacts to cultural resources of all proposed 2014 LRDP activities.

8.4.1 Cultural Resources Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Historical resources.** The proposed renovation of the Main Hospital and the construction of the office/research building would not result in an adverse effect on historical resources. Therefore, no additional analysis of this issue is required for these activities.

- **Archaeological resources.** The proposed demolition of the Hellman, Brunn and Dialysis buildings and renovation of the Main Hospital would not result in an adverse effect on archaeological resources. Therefore, no additional analysis of this issue is required for these activities.

- **Paleontological resources.** The proposed demolition of the Hellman, Brunn and Dialysis buildings and renovation of the Main Hospital would not result in an adverse effect on paleontological resources. Therefore, no additional analysis of this issue is required for these activities.

- **Human remains.** The proposed demolition of the Hellman, Brunn and Dialysis buildings and renovation of the Main Hospital would not result in an adverse effect on human remains. Therefore, no additional analysis of this issue is required for these activities.

8.4.2 Cultural Resources – Mount Zion Setting

The Mount Zion campus site is in a dense urban neighborhood of San Francisco, distributed across six adjoining blocks, within the area bounded by Broderick Street to the west, Scott Street to the east, Bush Street to the north, and Geary Boulevard to the south. Mount Zion Hospital was founded in 1887 by the Mount Zion Association, comprised primarily of members of San Francisco's Jewish community. The first hospital began operation in January 1897 on Sutter Street in downtown San Francisco, and moved to its current location in the Western Addition neighborhood in 1912. The Hellman Building, a T-Shaped neoclassical-style building at the northwest corner of Post and Scott Streets, was built by Isaiah W. Hellman and designed by J.E. Kraftt & Sons Architects. The building was constructed as a hospital and opened in February 1914. It has undergone several alterations, and by 1941, the building was no longer used for patient care but for administrative and office facilities. The building was reinforced with steel straps in 1995.

Hospital expansion occurred regularly throughout the 20th century. Community-based fundraising campaigns enabled the hospital to modernize and expand in the post-war era and again in the 1960s. In 1990, Mount Zion and UCSF entered into an Integration Agreement creating a joint venture in the areas of patient care, education, and research.

8.4.3 Cultural Resources – Mount Zion Impacts and Mitigation Measures

Impact CUL-MZ-1: Demolition of the Hellman building at the Mount Zion campus site would result in a substantial adverse change in the significance of an historical resource. (Potentially Significant)

The 2014 LRDP proposes to demolish the Hellman, Harold Brunn Institute and Dialysis Center buildings. These three buildings are located on the east side of the main block along Scott Street between Sutter and Post Streets. The Hellman building is seismically compromised. UCSF would demolish all three buildings, but not necessarily at the same time, and the occupants and programs would be relocated into the repurposed hospital buildings or located elsewhere. Demolition of the Hellman building would likely occur in 2016-2017. In addition, the seismically-compromised building at 2255 Post Street would be retrofitted or demolished. See also Figure 3-14 in Chapter 3 of this EIR.

Of the four buildings proposed for demolition, only the Hellman building is a historic resource for CEQA purposes (ARG, 2003). The Brunn and Dialysis buildings were determined ineligible for listing in the CRHR and NRHP, and are not considered historic resources (ARG, 2003). The building at 2255 Post Street is not individually significant at the local, state or national level under any of the four California Register criteria of evaluation. A review of these buildings by ESA in 2014 found no changes to these buildings since their original evaluation. As such, their current status would remain.

The Hellman building is eligible for listing in the NRHP/CRHR under criterion A/1 because it is associated with the development of a well-known San Francisco institution founded with a mission to subsidize care for the poor of a specific ethnic and religious group (similar to other 19th century hospitals in San Francisco, such as the French Hospital, German Hospital, and St. Mary's Hospital). The Hellman building is also eligible for listing in the NRHP/CRHR under criterion C/3 because the building is typical of an early 20th century hospital building in San Francisco. Its design was influenced by Mount Sinai Hospital in New York, a contemporary medical facility considered a model of hospital design (ARG, 2003).

As the Brunn, Dialysis and 2255 Post Street buildings are not historic resources, their demolition would not result in a significant impact to historic resources. Proposed demolition of the Hellman building would have a significant impact on historic resources because it would materially affect in an adverse manner the qualities and characteristics which convey its historic significance. Certain mitigation measures such as HABS photography has already been completed for the Hellman building. Additional measures are available to reduce the impact of demolition, as described in **Mitigation Measure CUL-MZ-1**, below. However, both the previously

implemented and future measures would not reduce the impact of demolition to a less-than-significant level. As such, the removal of the Hellman building would remain a significant and unavoidable impact.

> **Mitigation Measure CUL-MZ-1:** Typical mitigation for the demolition of a historic resource includes HABS-level photodocumention, as well as public interpretation. HABS-level photodocumentation was already completed in 2006.[6] UCSF shall furnish copies of the report to local depositories of historical information to enhance public understanding and increase the availability of these materials for future research. Such depositories shall include the History Room of the San Francisco Public Library (Main Branch), San Francisco Heritage, and the Northwest Information Center at Sonoma State University.
>
> As part of the design for the proposed new office/research building to be constructed in this location, UCSF shall install interpretive materials at or near the site to enhance public awareness in the form of a historical marker, kiosk, or other display which contains historical photos and text about the Hellman building's historical significance. The contents of the display can be obtained from the HABS documentation effort. Even after implementation of these measures, the impact of the loss of the Hellman building would remain significant and unavoidable.
>
> **Significance after Mitigation:** Significant and Unavoidable

Impact CUL-MZ-2: Renovation of the Main Hospital at the Mount Zion campus site would not result in a substantial adverse change in the significance of historical resources. (Less than Significant)

The inpatient facilities at the Mount Zion campus site are provided in two interconnected buildings. Neither building will meet SB 1953 seismic requirements through 2030, so both will require decommissioning as inpatient facilities by this date. With the opening of the Medical Center at Mission Bay in 2015, the inpatient uses at the Mount Zion campus site will be relocated to the Mission Bay campus site and the inpatient buildings will subsequently be repurposed for outpatient use.

The Main Hospital at Mount Zion was completed in 1950 and designed by architect Milton Pfleuger, but it has expanded numerous times since, both upward and outward, to accommodate the growth in patient care requirements. As such, the building retains none of its original design, and was determined ineligible for listing in the NRHP/CRHR in 2003, and is not considered a historic resource for CEQA purposes (ARG, 2003). A review of this building by ESA in 2014 found no changes to this building since its original evaluation, and as such, its status would remain unchanged. As the Main Hospital at Mount Zion is not considered a historic resource for CEQA purposes, the proposed renovation project would have no impacts on historic resources.

Mitigation: None required.

6 Page & Turnbull, *Historic American Building Survey Documentation, Hellman Building*, October, 2006.

Impact CUL-MZ-3: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to historical resources. (Less than Significant)

As described in Chapter 3, *Project Description*, one or more buildings (or a phased building) would be built on the east side of the main block where the Hellman, Harold Brunn Institute and Dialysis Center buildings are currently located. (See also Figures 3-14 and 3-15). A new building along Scott Street could be built up to 65 feet with a 20-foot step back at 40 feet in height to lower the building scale at the street level. It could be set back from Post Street to align with the existing hospital building for a grander landscaped entrance. Building space on Sutter Street could be up to 105 feet in height with a 20-foot setback along Sutter and Scott Streets. Up to 185 parking spaces could be constructed in two levels underground, if not developed off-site. Streetscape improvements would be made along the affected street frontages.

This proposed new building would necessitate the demolition of the historic Hellman building, and the impacts of this effort are discussed above under Impact CUL-MZ-1. Other than demolition of the Hellman building, construction of a new building in this location would have no direct or indirect impacts to historic resources, as none is located (or will be located) at or near this area of the block once the Hellman building has been removed. There are no other historic resources identified on the subject block or immediate vicinity with the exception of the Jewish Family and Children's Services Center at 1615 Scott Street, directly across Scott Street from the Hellman building. This Renaissance Revival-style brick building, constructed in 1930, may be eligible for listing in the NRHP/CRHR upon further review. Even if determined to be a historic resource at a later date, the proposed new office/research building to be constructed across the street would be separated from this potentially historic building by the 60-foot width of Scott Street, as well as the proposed 20-foot setback along Scott Street, for a total of an 80-foot separation. This separation would be sufficient to allow the Jewish Family and Children's Services Center to retain its integrity of setting, and the building would not be indirectly affected by the proposed project. As such, the construction of a new office/research building would have no impact on historic resources.

Mitigation: None required.

Impact CUL-MZ-4: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to archaeological resources. (Potentially Significant)

Previous studies and archival research conducted for the Mount Zion campus site have not identified archaeological resources at the campus site (UCSF, 2005). Archaeological sites are generally located near watercourses or water bodies. Additionally, this campus site has been extensively modified over time, and the likelihood of discovering archaeological resources would be low. In the unlikely event that archaeological artifacts are discovered during construction (including grading, excavation and other earthmoving activities), **Mitigation Measure CUL-LRDP-3** would be implemented to reduce the impact to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-3

Significance after Mitigation: Less than Significant

Impact CUL-MZ-5: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to paleontological resources. (Potentially Significant)

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. In general, older sedimentary rocks (more than 10,000 years old) are considered most likely to yield vertebrate fossils of scientific interest. Review of geological maps and previous analysis suggests that there are no unique paleontological resources or unique geologic features at the Mount Zion campus site, which is underlain by dune sands. In the event that paleontological resources are uncovered during the course of construction, implementation of **Mitigation Measure CUL-LRDP-4** would reduce impacts to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-4

Significance after Mitigation: Less than Significant

Impact CUL-MZ-6: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to human remains. (Potentially Significant)

There are no known human remains, including those interred outside of formal cemeteries located at the Mount Zion campus site. However, in the event of an accidental discovery or recognition of human remains during project excavation and construction, **Mitigation Measure CUL-LRDP-5** would be implemented to reduce the impact to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-5

Significance after Mitigation: Less than Significant

8.4.4 References

Architectural Resources Group (ARG), *Historical Resources Evaluation UCSF Mount Zion Campus, San Francisco, California,* June, 2003

Carey & Co. *UCSF Historic Resources Survey*, February, 2011.

UCSF, *UCSF LRDP Amendment #2 Draft EIR*, 2005.

8.5 Geology, Soils and Seismicity

This section considers the setting and geology, soils and seismicity impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Geology, Soils and Seismicity are contained in Section 4.5 of this EIR. The CEQA Significance Standards presented in Section 4.5.3 are used to evaluate the potential Geology, Soils and Seismicity impacts of all proposed 2014 LRDP activities.

Those impacts that are specific to the implementation of the 2014 LRDP at the Mount Zion campus site are discussed below.

8.5.1 Geology, Soils and Seismicity Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Landslides.** No activities would result in an adverse effect from landslides. Therefore, no additional analysis of this issue is required.
- **Erosion.** The proposed renovation of the Main Hospital would not result in substantial soil erosion. Therefore, no additional analysis of this issue is required for this activity.
- **Expansive soils.** No activities would be located on expansive soils. Therefore, no additional analysis of this issue is required.
- **Soils and wastewater disposal.** No activities would result in the installation of septic tanks or alternative wastewater disposal systems. Therefore, no additional analysis of this issue is required.
- **Structural hazards.** The proposed renovation of the Main Hospital would be the only activity to have potential effects regarding exposure to structural hazards in an existing building. Accordingly, no analysis of this issue is required for any other activity.

8.5.2 Geology, Soils and Seismicity – Mount Zion Setting

The Mount Zion campus site is located at an elevation of approximately 120 feet above mean sea level and slopes gently to the southeast. Subsurface materials at the Mount Zion campus site generally consist of recent unconsolidated sand and alluvium. The campus site is not within the City of San Francisco's Special Geologic Study Area for potential ground failure hazards caused by landsliding or liquefaction.

8.5.3 Geology, Soils and Seismicity – Mount Zion Impacts and Mitigation Measures

There are three types of proposals at the Mount Zion campus site under the 2014 LRDP:

- **Demolition:** Hellman, Brunn and Dialysis Buildings (and possibly 2255 Post Street)
- **Renovation:** Main Hospital (and possibly 2255 Post Street)
- **Construction:** Construct Office/Research Building

As discussed in Section 5.5, the general Geology, Soils and Seismicity impacts that could occur as a result of implementing the 2014 LRDP, are:

> **Impact GEO-LRDP-1: Implementation of the 2014 LRDP could result in adverse effects to people and structures resulting from geologic hazards.**
>
> **Impact GEO-LRDP-2: Implementation of the 2014 LRDP could result in substantial soil erosion or loss of topsoil.**

Demolition activities could include disturbance to improvements that would expose underlying soils. If not managed appropriately, these soils could be subject to the effects of wind and water erosion. However, all construction activities including demolition activities would be required to adhere to best management practices that include erosion control measures. As a result, the potential impacts related to erosion would be reduced to less than significant.

The proposed renovations at the hospital are in response to the facility's inability to meet SB 1953 seismic code requirements for inpatient hospital care facilities. As a result, renovations are proposed to repurpose the facility for outpatient services. Any renovations involving structural changes to the building could require seismic upgrades, if applicable, however in general, renovations would likely be more cosmetic and subject to the same potential geologic and seismic hazards as presently exist.

The campus site is located in a seismically active region that could experience at least one major earthquake (Richter magnitude (M) 6.7 or higher) over the next 30 years. Strong ground shaking at the campus site could occur during a moderate to severe earthquake occurring on one of the active Bay Area faults near to the campus site. New construction of the office/research building would be required to include site preparation and design in accordance with the UC *Seismic Safety Policy* and current and most stringent of either the California Building Code or local building code requirements that would minimize the potential for geologic and seismic hazards to adversely affect the proposed structure and future occupants. Adherence to these regulatory requirements would ensure that seismic hazards are reduced to less than significant levels.

Mitigation: None required.

8.5.4 References

University of California, *Seismic Safety Policy*, available at http://ucop.edu/real-estate-services/resources/seismic-safety-policy/index.html.

8.6 Greenhouse Gas Emissions

This section considers the setting and greenhouse gas emissions impacts of implementing the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of greenhouse gas emissions are contained in Section 4.6 of this EIR. The CEQA Significance Standards presented in Section 4.6.3 are used to evaluate the potential greenhouse gas emissions impacts of all proposed 2014 LRDP activities.

8.6.1 Greenhouse Gas Emissions Issues Adequately Addressed in the Initial Study

The Initial Study concluded that proposed 2014 LRDP activities at the Mount Zion campus site and their potential effects on greenhouse gas emissions would be evaluated in the EIR.

8.6.2 Greenhouse Gas Emissions – Mount Zion Setting

Greenhouse gas (GHG) emissions are generated at the Mount Zion campus site from a variety of sources. These include motor vehicle trips generated by uses on site, electrical and natural gas usage including, water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation.

8.6.3 Greenhouse Gas Emissions – Mount Zion Impacts and Mitigation Measures

Impact GHG-MZ-1: Development at the Mount Zion campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (Potentially Significant)

Construction emissions from development under the 2014 LRDP at the Mount Zion campus site were estimated using the CalEEMod emissions model assuming demolition of 85,000 square feet of existing buildings and the construction of a 257,300 square foot office/research building. Construction-related emissions were calculated assuming completion by 2020 and phasing lengths based on CalEEMod default estimates which are based on square footage. All model inputs and outputs are provided in Appendix E. Construction-related GHG emissions for each year of the anticipated construction period are presented in **Table 8.6-1**. Estimated emissions are 183 metric tons of carbon dioxide equivalents[7] (CO_2e). As discussed earlier, BAAQMD has not established a quantitative threshold relative to construction-related emissions.

In lieu of any proposed or adopted thresholds relative to construction-related emissions, these emissions are considered significant unless best management practices are implemented to reduce GHG emissions during construction, as feasible. Consequently, **Mitigation Measure GHG-LRDP-1** is identified to ensure implementation of best management practices during construction.

[7] CO_2e in all calculations of project impact include CO_2, CH_4 and N_2O.

TABLE 8.6-1
ANNUAL CONSTRUCTION-RELATED GHG EMISSIONS
WITHOUT MITIGATION - MOUNT ZION

Construction Window Source	Emissions (metric tons CO_2e / year)			
	CO_2	CH_4	N_2O	Total CO_2e
2015-2020	182	<1	<1	183

NOTE: Project CO_2 emissions estimates were made using CalEEMod v.2013.2.

Mitigation Measure: Implement Mitigation Measure GHG-LRDP-1

Significance after Mitigation: Less than Significant. Implementation of Mitigation Measure GHG-LRDP-1 would ensure that UCSF and its contractors employ feasible, effective measures to reduce GHG emissions during construction activities. This mitigation measure would therefore reduce this potential impact to less than significant.

Impact GHG-MZ-2: Development at the Mount Zion campus site under the 2014 LRDP would result in an increase in operational GHG emissions. (Less than Significant)

Area, Energy, and Indirect Sources

Operational GHG emissions associated with development under the 2014 LRDP at the Mount Zion campus site would result from electrical and natural gas usage, water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the campus site is generated by the electrical supplier, PG&E. GHG emissions from natural gas are direct emissions resulting from on-site combustion for heating and other purposes. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste-related emissions are generated when the increased waste generated by new development is disposed in a landfill where it decomposes, producing methane gas.[8]

GHG emissions from electrical usage, natural gas combustion, mobile transportation, water and wastewater conveyance, and solid waste were estimated using the CalEEMod model, and are presented in **Table 8.6-2**. Default GHG emissions factor for PG&E was adjusted to reflect future reductions envisioned by PG&E (PG&E, 2013). Electrical and natural gas emissions also assume compliance with UCSF policy to achieve an energy use 20% lower than Title 24 requirements.

[8] CH_4 from decomposition of municipal solid waste deposited in landfills is counted as an anthropogenic (human-produced) GHG. (USEPA, 2006).

TABLE 8.6-2
ANNUAL OPERATIONAL GHG EMISSIONS
WITHOUT MITIGATION - MOUNT ZION CAMPUS

Emission Source	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
Area Sources	<1	<1	<1	<1
Energy Sources	1,190	<1	<1	1,195
Mobile Sources	719	<1	<1	720
Solid Waste	564	33.3	<1	1,264
Water and Wastewater	67.3	1.0	<1	97
Demolition Losses				
Area Sources	<1	<1	<1	<1
Energy Sources	-435	<1	<1	-437
Solid Waste	-186	-11	<1	-418
Water and Wastewater	-22	<1	<1	-32
Net Total	**1,897**	**23**	**<1**	**2,389**

NOTE: Columns may not total precisely due to rounding. Rows may not total precisely due to differences in global warming potential.

Demolition projects would result in reductions in electrical and natural gas usage, water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation from the buildings being demolished. While there could be a reduction in energy demand resulting from reuse of the Main Hospital from in-patient to out-patient use, it was conservatively assumed that this reduction would be negligible. GHG emission reductions would be realized from reduction in electrical demand, natural gas use, water and wastewater transport and solid waste generation.

Mobile Emission Sources

One of the sources of operational emissions would be increased vehicle emissions from traffic for additional staff, patients, visitors and residents. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the 2014 LRDP (Adavant, 2014). New development under the 2014 LRDP at the Mount Zion campus site would generate an estimated 179 additional daily vehicle trips. GHG emissions from motor vehicle sources were calculated using the CalEEMod. Table 8.6-2 presents the incremental mobile source GHG emissions associated with 2014 LRDP development, which represent approximately 22% of the total operational GHG emissions from new development.

As shown in Table 8.6-2, the sum of both direct and indirect GHG emissions resulting from operations under the 2014 LRDP, including operational losses from demolition of older less-efficient buildings would result in an estimated 2,389 metric tons per year of CO_2e. Applying a service population of 711 persons associated with development at the Mount Zion campus site (649 new faculty, staff and 62 students) results in emissions of approximately 3.4 metric tons CO_2e/SP/yr. This is below the service population threshold of 4.6 metric tons per year of CO_2e/SP

and operational GHG emissions associated with development under the 2014 LRDP would therefore be a less-than-significant impact.

Mitigation: None required.

8.6.4 References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report, CEQA Thresholds of Significance Air Quality Guidelines, October 2009. Available at www.baaqmd.gov.

BAAQMD, 2012. CEQA Air Quality Guidelines. Adopted June 2011, updated May 2012. Available at www.baaqmd.gov.

Pacific Gas & Electric Company (PG&E), Greenhouse Gas Emission Factors: Guidance for PG&E Customers, April, 2013.

8.7 Hazards and Hazardous Materials

This section considers the setting and hazards and hazardous materials impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Hazards and Hazardous Materials are contained in Section 4.7 of this EIR. The CEQA Significance Standards presented in Section 4.7.3 are used to evaluate the potential hazards and hazardous materials impacts of all proposed 2014 LRDP activities.

8.7.1 Hazards and Hazardous Materials Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Safety hazards from airport operations.** No activities would result in safety hazards resulting from proximity to public or private airports. Therefore, no additional analysis of this issue is required.

- **Wildland fires.** No activities would result in exposure to wildland fires. Therefore, no additional analysis of this issue is required.

8.7.2 Hazards and Hazardous Materials – Mount Zion Setting

The Mount Zion campus site uses include the hospital, clinical offices, outpatient programs, and parking lots all located within a mixed-use neighborhood commercial district, which all involve the transport, storage, handling, and disposal of hazardous materials. Proposed 2014 LRDP activities include demolition of existing buildings which could contain hazardous building materials, renovations to existing buildings which could also disturb hazardous building materials, and constructing an office/research building

8.7.3 Hazards and Hazardous Materials – Mount Zion Impacts and Mitigation Measures

Impact HAZ-MZ-1: Implementation of the 2014 LRDP could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (Potentially Significant)

The current inpatient facilities at the Mount Zion campus site cannot meet newer seismic code requirements through 2030, so both will require decommissioning as inpatient facilities. Inpatient uses at the Mount Zion campus site will be relocated to the Mission Bay campus site and the inpatient buildings will subsequently be repurposed for outpatient use. The renovation efforts to repurpose these facilities could include disturbing existing building materials which could potentially contain hazardous building materials such as lead-based paint, asbestos containing materials, polychlorinated biphenyls (PCBs), and mercury. If not addressed appropriately,

construction workers and the public could be exposed to adverse effects as a result of exposure to these hazardous building materials, if present. As described in Chapter_5, existing regulations are sufficient to reduce potential exposure health risks to less than significant levels. Once renovations are complete, there could be a potential net increase in the use, storage, and disposal of hazardous materials including biohazardous wastes, however any additional hazardous materials handling activity would be subject to federal, state, local, and existing UCSF policies and plans.

One or more buildings (or a phased building) would be built in place of the Hellman, Harold Brunn Institute and Dialysis Center buildings. Development could also include two levels of underground parking. The level of hazardous materials use, storage and disposal would likely depend on whether the building(s) end up being used as offices or for research purposes. Either way, any expanded or additional use of hazardous materials would require adherence to regulatory requirements that address the storage, use, and disposal of hazardous materials in a manner that limit health risks and upset and accident conditions. Hazardous materials use, storage and disposal also would be offset with the hazardous materials practices that existed with the operations of the Hellman, Brunn and Dialysis Buildings which are proposed for demolition.

San Francisco is among the identified counties where ultramafic bedrock materials are present and have the potential for naturally occurring asbestos fibers. Ground disturbing activities such as excavation for construction of foundations or the underground parking have the potential to encounter bedrock containing naturally occurring asbestos fibers. If not addressed appropriately, disturbance of these fibers could expose workers and the public to adverse health effects. With implementation of **Mitigation Measure HAZ-LRDP-1**, the potential impact would be reduced to less than significant levels.

Mitigation Measure: Implement Mitigation Measure HAZ-LRDP-1

Significance after Mitigation: Less than Significant

Impact HAZ-MZ-2: Implementation of the 2014 LRDP at the Mount Zion campus site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools. (Less than Significant)

There are several schools located within a quarter mile of the Mount Zion campus site including Gateway High School and Drew School which are located approximately 0.2 miles from the campus site. While there may be net changes in the amount and type of hazardous materials handled, stored, and disposed of, the 2014 LRDP proposals would overall not represent a substantive change in emissions or handling of hazardous materials and all activities would continue adherence to federal, state, local and UCSF policies and regulatory requirements.

Mitigation: None required.

8.7.4 References

State Water Resources Control Board (SWRCB), *Geotracter database*, http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=San+Francisco%2C+CA, accessed February 14, 2014.

Department of Toxic Substances Control (DTSC), Envirostor Database, http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=1600%20Divisidero,%20San%20Francisco%20CA&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true, accessed February 14, 2014.

8.8 Hydrology and Water Quality

This section considers the setting and hydrology and water quality impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential Hydrology and Water Quality effects are contained in Section 4.8 of this EIR. The CEQA Significance Standards presented in Section 4.8.3 are used to evaluate the potential impacts to hydrology and water quality of all proposed 2014 LRDP activities.

Those impacts that are specific to the implementation of the 2014 LRDP at the Mount Zion campus site are discussed below.

8.8.1 Hydrology and Water Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Groundwater supplies.** No activities would result in substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. Therefore, no additional analysis of this issue is required.

- **Housing or other structures within flood hazard areas.** No activities would place housing or other structures within a flood hazard area. Therefore, no additional analysis of this issue is required.

- **Exposure to flooding.** No activities would result in exposure to flooding. Therefore, no additional analysis of this issue is required.

- **Inundation by seiche, tsunami or mudflow.** No activities would result in inundation by seiche, tsunami or mudflow. Therefore, no additional analysis of this issue is required.

Finally, the Initial Study also concluded that the proposed renovation of the Main Hospital would result in no impact or less-than-significant impacts regarding any hydrology or water quality issue. Therefore, no additional analysis is required for this building renovation activity.

8.8.2 Hydrology and Water Quality – Mount Zion Setting

The Mount Zion campus site occupies various portions of a six-block stretch of San Francisco bounded by Bush, Geary, Broderick, and Scott streets. The main campus block is the hospital located on Post and Sutter streets. The area is almost completely covered in impervious surfaces and drains to the Southeast Treatment Plant.

8.8.3 Hydrology and Water Quality – Mount Zion Impacts and Mitigation Measures

There are three types of proposals at the Mount Zion campus site under the 2014 LRDP:

- **Demolition:** Hellman, Brunn and Dialysis Buildings (and possibly 2255 Post Street)
- **Renovation:** Main Hospital (and possibly 2255 Post Street)
- **Construction:** Construct Office/Research Building

Proposed LRDP development at the Mount Zion campus site (including on-site staging) would include demolition, excavation, grading, and construction activities that would require temporary disturbance of surface soils and removal of existing pavement and sub-surface structures (if present). These activities would expose soil to water runoff as well as entrainment of sediment in the runoff. If dewatering would be necessary during construction, the water would likely contain suspended sediments and would require settling before being discharged to the CSS. Sediment in runoff and deposits of soil and related debris from haul truck tires on local streets could increase the amount of sediment entering the storm drains, which could potentially clog drain inlets and reduce the flow capacity of the storm drains. The accumulation of this material could potentially result in increased localized ponding or flooding, particularly after large storm events.

The use of construction equipment as well as the delivery, handling, and storage of construction materials and waste could contaminate stormwater that could negatively impact water quality. Potential contaminants include, but are not limited to (CSW/Stuber-Stroeh, 2011):

- Petroleum hydrocarbons and metals from stockpiled soils excavated from the site
- Fuel from storage drums
- Diesel from refueling trucks
- Oils and grease from miscellaneous heavy equipment
- Sewage from portable sanitary facilities
- Sediment from construction generated waste–piles of concrete, rock and debris
- Sediment from rock crushing activities
- Hazardous materials storage-hydraulic oil, motor oil, and lubricating fluid
- Spills and releases of hydrocarbons and related pollutants from routine light maintenance activities such as fluid topping off, and welding and repairing belts and gears of heavy equipment

Polluted stormwater runoff could violate water quality standards and/or waste discharge requirements established in the NPDES General Permit for Construction and the NPDES discharge permits for the Southeast Treatment Plant.

In accordance with the Construction General Stormwater Permit, UCSF would be required to prepare and implement a SWPPP for each LRDP construction project to minimize water quality impacts during construction activities on the campus site. The SWPPPs will be consistent with previous SWPPPs that have been developed for past development of the Mount Zion campus site (e.g. construction of the Mount Zion Parking Garage).

The SWPPPs will identify pollutant sources within the construction area and recommend site-specific BMPs regarding control of sediments in runoff and storage and use of hazardous materials to prevent discharge of pollutants into stormwater. Likely BMPs are listed in Section 5.1.8.

In addition, each 2014 LRDP construction project will need to obtain a water quality certification from the RWQCB for the construction activities, which would also require implementation of BMPs and specific measures for the protection of water quality during construction.

Proposed development and redevelopment at the Mount Zion campus site would not significantly change the volumes of site stormwater runoff, nor how this runoff is directed or routed through the campus site to the CSS. The proportion of impermeable surfaces at the campus site will not significantly change as a result of 2014 LRDP activities. Measures to prevent and minimize erosion and its potential effects on storm drain siltation and water quality would be included in the SWPPP.

Implementation of SWPPPs and associated BMPs would reduce erosion and water quality impacts during demolition and construction activities to less than significant. These regulatory requirements, discussed in Sections 4.8 and 5.8, limit the potential adverse effects of these impacts to less than significant.

Mitigation: None required.

8.8.4 References

CSW/Stuber-Stroeh Engineering Group, Inc., *Storm Water Pollution Prevention Plan*, UCSF Medical Center at Mission Bay, San Francisco, California, August, 2011.

8.9 Land Use and Planning

This section considers the setting and land use and planning impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Land Use are contained in Section 4.9 of this EIR. The CEQA Significance Standards presented in Section 4.9.3 are used to evaluate the potential land use impacts of all proposed 2014 LRDP activities.

8.9.1 Land Use and Planning Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Physically divide an established community.** No activities would physically divide an established community. Therefore, no additional analysis of this issue is required.
- **Habitat conservation plan.** No activities would result in a conflict with any applicable habitat conservation plan. Therefore, no additional analysis of this issue is required.
- **Compatibility with local land uses or zoning.** The proposed demolition of Hellman, Brunn and Dialysis buildings would not conflict with local land uses or zoning. Therefore, no additional analysis of this issue is required for these activities.

8.9.2 Land Use and Planning – Mount Zion Setting

The Mount Zion campus site consists of approximately 7.6 acres on six contiguous city blocks in the Western Addition neighborhood of San Francisco. The campus site is generally bounded by Bush Street to the north, Scott Street to the east, Post Street to the south and Broderick Street to the west. The Mount Zion campus site has 776,200 gsf of owned space and 45,300 gsf of leased space within a quarter-mile, for a total of 821,500 gsf. The Medical Center at Mount Zion is located on the main block, with the entrance on Divisadero Street between Post and Sutter Streets. Additional Mount Zion facilities are located on and distributed across five adjoining blocks, within the area bounded by Broderick Street to the west, Scott Street to the east, Bush Street to the north and Geary Boulevard to the south. The Mount Zion campus site has not been designated with functional zones by UCSF prior to the adoption of the 2014 LRDP.

The campus site is located in a mixed-use neighborhood commercial district and is fully integrated with the city street grid. Most buildings along Divisadero Street consist of residential and office uses above ground floor retail. In the vicinity of the campus site there are several private medical office buildings that are not affiliated with UCSF. Kaiser Medical Center is located on Geary Boulevard, one block to the southwest. Residential uses are widespread north and west and directly across Scott Street to the east of the main block.

8.9.2.1 City of San Francisco Zoning

The campus site is zoned as Neighborhood Commercial (NC-3) by the City, with the exception of one parcel at 2375 Post Street that is zoned Residential Mixed Use (RM-1). NC-3 Districts are intended in most cases to offer a wide variety of comparison and specialty goods and services to a population greater than the immediate neighborhood. NC-3 Districts are linear districts located along heavily trafficked thoroughfares that also serve as major transit routes. Height and Bulk Districts within the campus site boundaries include the following: 40-X, 65-A and 105-E. The locations with an "X" designation permit all floors of structures to cover the entire building footprint. The "A" designation limits building floor plans above 40 feet to a maximum plan length of 110 feet and a maximum diagonal plan dimension of 125 feet. The "E" designation limits floor plans above 65 feet to a maximum plan length of 110 feet and a maximum diagonal plan dimension of 140 feet.

8.9.3 Land Use and Planning – Mount Zion Impacts and Mitigation Measures

Impact LU-MZ-1: Implementation of the 2014 LRDP at the Mount Zion campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

Upon adoption by the Regents, the proposed 2014 LRDP will replace the 1996 LRDP, as amended, and become the applicable campus land use plan for UCSF. Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. The University is the only agency with land use jurisdiction over activities proposed at UCSF campus sites by the 2014 LRDP. Therefore, all proposed activities that would be in general conformance with the 2014 LRDP would have no significant land use impacts.

However, UCSF considers the land use policies and zoning regulations of the City when analyzing potential land use impacts under CEQA. The 2014 LRDP is not expected to conflict with City plans and policies adopted for the purpose of avoiding or mitigating an environmental effect. Consistency with the City's height and bulk districts is discussed below under Impacts LU-MZ-2 and LU-MZ-3.

The Mount Zion campus site would be newly designated with functional zones under the 2014 LRDP (see Figure 3-13 in Chapter 3, *Project Description*). The majority of the campus site is proposed as Clinical, consistent with the predominance of inpatient and outpatient uses. The cancer research building is designated as Research. Other areas include structured parking controlled by UCSF. The functional zone classifications proposed by UCSF do not present land use conflicts with adjacent existing land uses on the campus site or in the surrounding neighborhood. The renovation of the Main Hospital and construction of the proposed office/research building would be consistent with the existing uses on the campus site. Therefore, implementation of the 2014 LRDP would have a less-than-significant impact regarding consistency with land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect.

Mitigation: None required.

Impact LU-MZ-2: Renovation of the Main Hospital at the Mount Zion campus site would be compatible with existing land uses, density, and height and bulk restrictions. (Less than Significant)

With the opening of the Medical Center at Mission Bay in 2015, the inpatient uses at the Mount Zion campus site currently located in the Main Hospital will be relocated to the Mission Bay campus site. The Main Hospital would be repurposed as an ambulatory care center with ambulatory surgery. Vacated space would be backfilled with growth of the cancer program, expansion of outpatient services and support space. The decommissioned hospital may also accommodate program space and clinics now located in the Hellman, Harold Brunn Institute and Dialysis Center buildings proposed for demolition, as well as nearby leased space if and when leases are not renewed. Proposed renovations would be limited to the interior and no conflicts would result with local zoning regulations. This would therefore be a less than significant impact.

Mitigation: None required.

Impact LU-MZ-3: The proposed office/research building at the Mount Zion campus site would be compatible with adjacent land uses. (Less than Significant)

UCSF proposes to construct one or more buildings (or a phased building) totaling approximately 257,000 gsf on the east side of the main block where the Hellman, Harold Brunn Institute and Dialysis Center buildings are currently located. UCSF conducted a capacity study to evaluate options and to determine how much space could be developed on this portion of the block, given the program space target, the need for a central open space area, parking and loading requirements and the City's height and bulk limits. The study determined that the full program could be met, but only if the City's bulk limits were exceeded and parking was located underground or off the block. A new building along Scott Street could be built up to 65 feet tall with a 20-foot step back at the 40-foot height level to lower the building scale at the street level. The building could be set back from Post Street to align with the existing hospital building. Building space on Sutter Street could be up to 105 feet in height with a 20-foot setback along Sutter and Scott Streets. The proposed building would comply with the City's height limit, but not the bulk limit.

As noted above, the University is exempt from local zoning. However, UCSF strives to adhere to City zoning codes to the extent practicable in accordance with 2014 LRDP Objective 1: Respond to the City and Community Context. The 2014 LRDP also includes an objective (Objective 3) to ensure that its facilities are seismically safe. To the extent feasible, UCSF would design the new office/research building to avoid or minimize the effects of this conflict with the City's Planning Code. While the proposed new office/research building would exceed the bulk restrictions of the Planning Code, the proposed building would be designed to align with the existing Main Hospital building and is located in a setting already built out with other UCSF facilities. Accordingly, although it would technically exceed the local bulk restrictions, it would be compatible with adjacent land uses and would not therefore create a significant land use impact.

Mitigation: None required.

8.10 Noise

This section considers the setting and noise impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Noise are contained in Section 4.10 of this EIR. The CEQA Significance Standards presented in Section 4.10.3 are used to evaluate the potential noise impacts of all proposed 2014 LRDP activities.

8.10.1 Noise Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Permanent ambient noise.** The demolition of the Hellman, Brunn and Dialysis buildings would not result in a substantial permanent increase in ambient noise levels. Therefore, no additional analysis of this issue is required for these activities.

- **Airport noise.** No activities would be located within the vicinity of a public or private airport. Therefore, no additional analysis of this issue is required.

- **Average daily noise levels.** The demolition of the Hellman, Brunn and Dialysis buildings would not contribute to increases in average daily noise levels. Therefore, no additional analysis of this issue is required for these activities.

8.10.2 Noise – Mount Zion Setting

8.10.2.1 Existing Noise Environment

Long-term environmental noise in urbanized areas is primarily dependent on vehicle traffic volumes and the mix of vehicle types. The existing ambient noise environment within the Mount Zion campus site area is dominated by vehicular traffic on Divisidero Street, Bush Street and Sutter Street.

The San Francisco Department of Public Health (DPH) has mapped transportation noise throughout the City and County of San Francisco, based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority travel demand model[9]. DPH maps indicate the areas subject to noise levels over 60 dBA (L_{dn}) and the range of L_{dn} noise levels that occur on every street in San Francisco. The portions of these maps that cover the campus site area indicate that areas along Divisidero Street, Bush Street and Sutter Street are generally between 65 and 70 dBA (L_{dn}).

Ambient Noise Measurements

Ambient short-term (10-minute) noise measurement data was collected in March of 2014 to characterize noise conditions in the campus site area. To characterize ambient noise in the

[9] San Francisco Department of Public Health (DPH), San Francisco City-wide Noise Map, August 2006, Available online at http://www.sfdph.org/dph/files/EHSdocs/ehsPublsdocs/Noise/noisemap2.pdf Accessed April 30, 2013.

campus site area, the short-term measurement data were collected at a location where residential land uses exist adjacent to where proposed demolition and construction activities could occur. These data are presented in **Table 8.10-1**.

TABLE 8.10-1
SHORT- TERM AMBIENT NOISE LEVEL DATA IN THE MOUNT ZION CAMPUS AREA

Measurement Location	Time	Noise Levels in dBA	
		Hourly L_{eq}	L_{max}
MZ-ST1: Residences on Scott Street between Sutter Street and Post Street	4:25	66.4	78.1

NOTE: L_{eq} represents the constant sound level; L_{max} is the maximum noise level.

SOURCE: Environmental Science Associates, 2014.

8.10.3 Noise – Mount Zion Impacts and Mitigation Measures

Impact NOI-MZ-1: Demolition activities proposed under the 2014 LRDP at the Mount Zion campus site would result in a temporary increase in ambient noise levels. (Potentially Significant)

As noted in the Regional Setting section, the hours that construction activity noise can occur is described in Section 2908 of the Police Code, known as the San Francisco Noise Ordinance. Although UCSF is not subject to the noise ordinance, it strives to be consistent with it. Section 2908 prohibits any person, between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day, from erecting, constructing, demolishing, excavating for, altering, or repairing any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line.

Demolition of the three buildings proposed to be removed would require the use of heavy duty off-road construction equipment as well as haul trucks to remove debris. Construction activity noise levels at and near the demolition sites would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. **Table 8.10-2** shows typical noise levels produced by various types of construction equipment. Equipment typically involved with large-scale demolition would include excavators, dozers, loaders and trucks for off-hauling demolition debris. Additionally, a hoe-ram (a back-hoe fitted with a ramming bit) may be used to break up large concrete structures.

The demolition of the three buildings would occur within 60 feet of an occupied residential building across Scott Street to the east. The estimated noise level of demolition activities, assuming simultaneous operation of an excavator, a loader and a bulldozer as calculated using the Roadway Construction Noise Model of the FHWA, would be 84.1 dBA, Leq. The nearest sensitive residential receptor currently experiences existing daytime noise levels of 66 dBA. Noise from standard construction equipment could exceed these existing noise levels by as much as 18 dBA.

TABLE 8.10-2
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 Feet)	Noise Level (dBA, Leq at 60 Feet)
Dump truck	76	74
Portable air compressor	78	76
Concrete mixer (truck)	79	77
Crane	81	79
Excavator	81	79
Dozer	82	80
Paver	77	75
Generator	81	79
Backhoe	78	76
Pile driver	101	99
Auger Drill Rig	84	92

SOURCE: FHWA, 2006.

Trucks off-hauling demolition debris would also generate noise. The number of daily truck trips would depend on the pace of demolition. The CalEEMod air quality model estimates that based on the square feet of demolition involved at for the removal of the three buildings up to 39 daily truck trips could occur per day (20 truck loads per day). Different truck routes would be use for these two proposals each of which would add about two additional truck trips per hour to local roadways. The Traffic Noise Prediction Model of the FHWA indicates that addition of two trucks per hour along Scott Street would increase the existing hourly noise level by 1.5 dBA which would not be a significant contribution to existing roadside noise levels.

Noise levels from proposed demolition would exceed 10 dBA over existing levels (a perceived doubling of loudness) during peak demolition activities. Receptors near these buildings would also experience noise levels approaching or exceeding a speech-interference threshold of 70 dBA and result in a temporary but significant construction noise impact from demolition activities.

Implementation of **Mitigation Measure NOI-LRDP-1** will reduce noise levels associated with demolition activities by 5 to 10 dBA. However, it is likely that intermittent hoe-ram operations to break up concrete structures could result in noise levels at sensitive receptors in excess of 70 dBA, even after mitigation. Consequently, this impact, although temporary, would be significant and unavoidable.

Mitigation Measure: Implement Mitigation Measure NOI-LRDP-1

Significance after Mitigation: Significant and Unavoidable

Impact NOI-MZ-2: Construction activities proposed under the 2014 LRDP at the Mount Zion campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (Potentially Significant)

Construction of the new office/research building would require the use of heavy duty off-road construction equipment. Construction activity noise levels at and near the office/research building site would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment, which could involve excavation, grading, and earth movement and, potentially, pile driving.

The nearest sensitive residential receptors to the office/research building site currently experience existing daytime noise levels of 66 dBA. Noise from standard construction equipment could exceed these existing noise levels by as much as 14 dBA. An impact pile driver, if required could result in an increase of up to 33 dBA over existing noise levels, resulting in a significant noise increase over existing conditions. Consequently mitigation measures to reduce construction noise are identified.

Renovation of the Main Hospital is expected to be largely conducted within the existing shell of the building and not require the use of heavy-duty construction equipment and therefore, not result in significant construction noise impact.

Mitigation Measure: Implement Mitigation Measures NOI-LRDP-1 and NOI-LRDP-2

Significance after Mitigation: Significant and Unavoidable. Mitigation Measures NOI-LRDP-1 and 2 would reduce the severity of noise generated by construction and pile-driving activities and reduce to the extent feasible the potential annoyance to nearby residents and others who could be disturbed by pile-driving. If piles can be installed though drilling and cast in place measures then these mitigation measures would result in a less than significant impact.

However, if geotechnical conditions exist such that impact or vibratory pile-driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration (up to about six weeks in total), even after mitigation the noise level would likely exceed 20 dBA during pile-driving activities, resulting in a significant and unavoidable impact.

Impact NOI-MZ-3: Demolition and construction activities proposed under the 2014 LRDP at the Mount Zion campus site could generate ground-borne vibration. (Less than Significant)

The types of construction activities associated with propagation of ground-borne vibration include pile driving, use of hoe-rams for demolishing large concrete structures and caisson drilling. It is possible that pile driving and drilling could occur during building construction. Pile driving, if required could take one or more months, and would occur during daytime hours, consistent with the City's Police Code.

Of the construction equipment likely to be used for construction of the office/research building, pile driving has the potential to result in the highest levels of ground-borne vibration. Pile driving

can result in peak particle velocities (PPV) of up to 1.5 inches per second (in/sec) at a distance of 25 feet (FTA, 2006), but typically results in an average of about 0.644 PPV at that distance. The Caltrans measure of the threshold of architectural damage for conventional sensitive structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings.

The nearest existing off-campus structure is approximately 60 feet away from the site of the proposed building, where pile driving may occur. At this distance, vibration from pile driving would be expected to be reduced to 0.17 inches per second. Therefore, vibration from pile driving would not exceed the criterion published by Caltrans of 0.25 in/sec for the protection of fragile older buildings. Vibration levels could be strongly perceptible at the nearest residential receptors but would be below the thresholds considered severe, 0.4 in/sec PPV. Consequently, if restricted to daytime hours, as required by ordinance, the proposals would have a less-than-significant impact with regard to ground-borne vibration. If piles can be installed though drilling and cast in place measures then vibrations levels would not be perceptible at the nearest residences.

Mitigation: None required.

Impact NOI-MZ-4: Operational noise generated by development under the 2014 LRDP at the Mount Zion campus site could cause a long-term increase in ambient noise levels in the campus vicinity. (Less than Significant)

Long-term noise sources associated with operation of the new office/research building and repurposed Main Hospital would primarily consist of marginal increases in roadway traffic resulting from new and repurposed land use. There will likely be some new mechanical equipment (e.g. heating ventilation and air conditioning) associated with operation of the new building. The potential location of such equipment in not known, but such equipment would be operated is such a manner as to conform to the requirements of the City of San Francisco Noise Ordinance. Additionally new mechanical equipment would effectively replace older and potentially noisier HVAC equipment currently existing at the Dialysis Center building that would be demolished.

Increased traffic would primarily be on the local roadway network, including Divisadero Street, Bush Street, Sutter Street and Scott Street. A project would be considered to generate a significant impact if it resulted in a permanent increase in ambient noise levels greater than 3 dBA in the project vicinity above levels existing without the project for areas already impacted by noise.

Noise levels were determined for this analysis using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model and the turning movements in the traffic section for Existing (2014), Existing Plus LRDP, and Cumulative Plus LRDP conditions. Peak hour intersection turning data from the traffic study were analyzed to evaluate increases and resulting traffic-generated noise increases on roadway links most affected by LRDP -related traffic. The roadway segments analyzed and the results of the noise increases resulting from modeling are shown in **Table 8.10-3**, below.

TABLE 8.10-3
PEAK-HOUR TRAFFIC NOISE LEVELS IN THE VICINITY OF THE MOUNT ZION CAMPUS

Roadway Segment[a,b]	(A) Existing	(B) Existing Plus Project	(B-A) Difference between Existing Plus Project and Existing[c]	(D) Cumulative Plus Project (2040)	(D-A) Difference between Cumulative Plus Project and Existing
Divisidero Street between Post Street and Sutter Street	66.6	66.9	0.3	67.2	0.6
Divisidero Street between Sutter Street and Bush Street	66.3	66.7	0.4	67.0	0.7
Scott Street between Post Street and Sutter Street	60.2	60.4	0.2	61.4	1.2
Scott Street between Sutter Street and Bush Street	59.9	60.0	0.1	61.3	1.4
Bush Street between Divisidero Street and Scott Street	69.0	69.1	0.1	69.9	0.9
Sutter Street between Divisidero Street and Scott Street	59.3	59.5	0.2	59.8	0.5

[a] Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model.
[b] The analysis considered the vehicle mix based on – cars 91 percent, medium trucks eight percent, and heavy trucks one percent on all streets based on observed city and para-transit bus activity. Traffic speeds for all vehicle classes were set at 25 mph for all vehicle classes, except on Divisidero Street and Bush Street where speeds were assumed to be 30 mph.

SOURCE: ESA, 2014.

As shown in Table 8.10-3, the increase in traffic noise from the Existing Plus LRDP scenario compared to the Existing scenario would increase peak hour noise levels by less than 3 dBA at all roadway segments. Overall, traffic noise impacts associated with implementation of the 2014 LRDP at all analyzed roadway segments in the vicinity of the Mount Zion campus site would be less than significant.

Mitigation: None required.

8.10.4 References

California Department of Transportation (Caltrans), 2013. *Transportation- and Construction-Vibration Guidance Manual*, September 2013.

Caltrans, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

City and County of San Francisco (CCSF), *San Francisco General Plan*, adopted on June 27, 1996, http://www.sf-planning.org/ftp/General_Plan/index.htm, accessed February 20, 2014.

Federal Highway Administration (FHWA) Roadway Noise Construction Model, 2006.

Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

United States Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, http://www.fican.org/pdf/EPA_Noise_Levels_Safety_1974.pdf, accessed February 20, 2014.

8.11 Population and Housing

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Population and Housing are contained in Section 4.11 of this EIR. The CEQA Significance Standards presented in Section 4.11.3 are used to evaluate the potential population and housing impacts of all proposed 2014 LRDP activities.

The 2014 LRDP would result in population growth in San Francisco or the wider Bay Area through increased employment and student enrollment. The 2014 LRDP would accommodate an increase in employment and students at all campus sites from the current approximately 30,840 to approximately 42,270 by 2035. This anticipated population increase could result in an increased demand for housing in the Bay Area. This overall increase and its potential effect on housing were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures.*

The 2014 LRDP development proposals would result in changes in daily population at this campus site. The direct and indirect physical environmental effects that result from those changes are fully considered in each of the appropriate topical sections of this chapter.

8.12 Public Services

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Public Services are contained in Section 4.12 of this EIR. The CEQA Significance Standards presented in Section 4.12.3 are used to evaluate the potential public services impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all sites, including patients and visitors, was approximately 39,420. At 2014 LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Mount Zion campus site would be approximately 1,600 in 2035.

This anticipated population increase could result in an increased demand for public services in San Francisco, including fire protection, law enforcement, and public education. This overall increase and its potential effect on public services were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. The anticipated small increase in population at this campus site under the LRDP would not cause substantial increased demand for public services specific to this campus site, and all impacts are found to be less than significant.

8.13 Recreation

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Recreation are contained in Section 4.13 of this EIR. The CEQA Significance Standards presented in Section 4.13.3 are used to evaluate the potential recreation impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all sites, including patients and visitors, was approximately 39,420. At 2014 LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Mount Zion campus site would be approximately 1,600 in 2035.

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that the anticipated small increase in population at this campus site under the LRDP would not cause substantial increased demand for recreation facilities specific to this campus site. All activities would result in no impact or less than significant impacts regarding recreation; therefore, no additional analysis is required.

8.14 Transportation and Traffic

This section considers the setting and transportation and traffic impacts of implementation of the 2014 LRDP at the Mount Zion campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Transportation and Traffic are contained in Section 4.14 of this EIR. The CEQA Significance Standards presented in Section 4.14.3 are used to evaluate the potential transportation and traffic impacts of all proposed 2014 LRDP activities.

8.14.1 Transportation and Traffic Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mount Zion campus site, the Initial Study concluded that:

- **Air traffic patterns.** No activities would result in a change in air traffic patterns. Therefore, no additional analysis of this issue is required.

8.14.2 Transportation and Traffic – Mount Zion Setting

A more-detailed description of current transportation and traffic characteristics in the Mount Zion campus site area is provided in Appendix G, Transportation Impact Study (TIS) for the UCSF LRDP.

8.14.2.1 Roadway Facilities

The network of regional roadways that serve the Mount Zion campus site is described in Section 4.14.

The Mount Zion campus site is located at the crossroads of San Francisco between the more modestly-scaled neighborhoods of the Richmond District to the west and more downtown-scaled areas to the east. As such, the roadways serving the campus site are primarily east-west corridors – Geary Boulevard, Pine Street, and Bush Street. Primary north-south access to the campus site is provided via Divisadero Street. The primary vehicular entrances to parking and loading areas for the campus site are located along Sutter Street and Post Street between Broderick Street and Divisadero Street, along Geary Boulevard between Divisadero Street and Scott Street, and along Scott Street between Geary Boulevard and Post Street. Local access to the Mount Zion campus site is provided by an urban street grid network. Key local roadways through the campus site are discussed below.

The local road network serving the Mount Zion campus site consists of several two-lane roadways with on-street parking provided on both sides of the streets in most areas, as follows:

- **Sutter Street** runs from Market Street to Presidio Avenue and is classified by the City as a Transit Conflict street. The 2 Clement bus line travels westbound, except within the campus site where it operates in both directions.

- **Post Street** runs from Market Street to Presidio Avenue and has Class II bicycle lanes in both directions between Presidio Avenue and Steiner Street, west of which turns into a Class III bicycle route.

- **Pierce Street** runs from Clay Street to Post Street.

- **Scott Street** runs from Marina Boulevard to Duboce Avenue and is designated as a Class III bicycle route within the study area from Post Street to Geary Boulevard.

- **Broderick Street** runs between Marina Boulevard and Waller Street and is designated a Class III bicycle route between Clay and Post streets.

Other roadways in the local network are as follows:

- **Geary Boulevard** is a six-lane east-west arterial that extends from Gough Street to 48th Avenue. The City classifies this arterial as a Primary Transit Important roadway. From Steiner Street to Baker Street (within the campus site area) the roadway has a center median with foliage. On-street parking is provided on both sides of the street within the vicinity of the campus site. The 38 Geary, 38L Geary Limited, and Golden Gate Transit bus lines operate in both directions along Geary Boulevard, while the NX Judah Express operates only in the westbound direction during weekday peak hours.

- **Pine Street** is a three-lane, one-way westbound roadway that extends from Market Street to Presidio Avenue. The City classifies this roadway as a Major Arterial. Pine Street is the westbound component of the Pine/Bush Street one-way couplet. On-street parking is provided on both sides of the street. The 1AX California A Express, 31AX Balboa A Express, 31BX Balboa B Express, 38AX Geary A Express, and 38BX Geary B Express bus lines utilize Pine Street to travel from Market Street to northwestern San Francisco neighborhoods.

- **Bush Street** is a three-lane, one-way eastbound roadway that extends from Market Street to Presidio Avenue. The City classifies this roadway as a Major Arterial. Bush Street is the eastbound component of the Pine/Bush Street one-way couplet. On-street parking is provided on both sides of the street. The 1AX California A Express, 31AX Balboa A Express, 31BX Balboa B Express, 38AX Geary A Express, 38BX Geary B Express, and NX Judah Express bus lines utilize Bush Street to travel from northwestern San Francisco neighborhoods to Market Street.

- **Divisadero Street** is a four-lane north-south roadway that extends from Marina Boulevard to 14th Street. The City classifies this roadway as a Secondary Transit arterial. On-street parking is provided on both sides of the street. The 24 Divisadero bus line operates in both directions along Divisadero Street between Jackson and Waller streets, providing transit service between Pacific Heights and Bayview neighborhoods.

8.14.2.2 Intersection Operating Conditions

Intersection operating conditions at 16 intersections were evaluated during the weekday peak hours of the AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak periods. Intersections usually form the critical capacity constraints on roadways. Therefore, most transportation analyses examine intersection operations as a measure of overall roadway conditions.

The operating characteristics of intersections are evaluated using the concept of Level of Service ("LOS"). LOS is a qualitative description of driver comfort and convenience. Intersection levels of service range from LOS A, which indicates free flow or excellent vehicle flow conditions with short delays, to LOS F, which indicates congested or overloaded vehicle flow conditions with extremely long delays. In San Francisco, LOS A through D is considered acceptable, and LOS E and LOS F are considered unsatisfactory service levels. The intersections were evaluated using the 2000 Highway Capacity Manual (HCM) methodology. Tables summarizing the relationship between average delay per vehicle and LOS for signalized and unsignalized intersections according to the 2000 HCM method can be found in the appendices of the TIS for the UCSF Long Range Development Plan (Appendix G).

For signalized intersections, this methodology determines the capacity for each lane group approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average delay and LOS is presented for the intersection. For unsignalized intersections, operations are defined by the average control delay per vehicle (in seconds per vehicle) for each stop-controlled movement or movement that must yield the right-of-way, and the LOS is determined by the worst (highest average delay) approach. Generally, the delay ranges for each LOS are lower than for signalized intersections because drivers expect less delay at unsignalized intersections.

As shown in **Table 8.14-1**, all 16 of the study intersections operate at an acceptable level of service, which is LOS D or better, during the AM and PM peak hour.

8.14.2.3 Transit Network

The Mount Zion campus site is well-served by public transit, both local and regional. Local service is provided by the Muni bus lines. Regional service is provided by BART, AC Transit, Golden Gate Transit, SamTrans, and Caltrain. UCSF supplements Muni transit service with its own shuttle system that provides direct connections to UCSF-operated facilities throughout San Francisco. In many cases, these shuttles provide a direct transit alternative between two campus sites that would otherwise require a transfer between two or more Muni routes. Based on the 2013 UCSF Transportation Commute Survey, approximately 25% of those traveling to and from the campus site use public transit, while another 8% rely on UCSF shuttles to get to and from the campus site.

Local Transit

San Francisco Muni. San Francisco Municipal Railway (Muni) provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car and electric streetcar lines. Muni operates five bus lines in the vicinity of the Mount Zion campus site (see the TIS in Appendix G for details about these transit lines).

The Transit Effectiveness Project (TEP) serves as both a thorough review of and repositioning of San Francisco's public transit system, initiated by SFMTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing

TABLE 8.14-1
EXISTING PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – MOUNT ZION

Intersection	Traffic Control[a]	Peak Hour	Delay (seconds)[b]	LOS[c]
45. Pine Street / Divisadero Street	Signal	AM PM	14 32	B C
46. Bush Street / Broderick Street	Signal	AM PM	17 11	B B
47. Bush Street / Divisadero Street	Signal	AM PM	48 18	D B
48. Bush Street / Scott Street	Signal	AM PM	30 17	C B
49. Bush Street / Pierce Street	Signal	AM PM	30 15	C B
50. Sutter Street / Broderick Street	AWS	AM PM	<10 (<10) <10 (<10)	A (A) A (A)
51. Sutter Street / Divisadero Street	Signal	AM PM	12 12	B B
52. Sutter Street / Scott Street	AWS	AM PM	10 (11) 11 (12)	B (B) B (B)
53. Sutter Street / Pierce Street	AWS	AM PM	<10 (<10) <10 (<10)	A (A) A (A)
54. Post Street / Broderick Street	Signal	AM PM	14 12	B B
55. Post Street / Divisadero Street	Signal	AM PM	17 14	B B
56. Post Street / Scott Street	Signal	AM PM	17 15	B B
57. Post Street / Pierce Street	SSS	AM PM	12 11	B B
58. Geary Boulevard / Broderick Street	SSS	AM PM	15 17	B C
59. Geary Boulevard / Divisadero Street	Signal	AM PM	34 30	C C
60. Geary Boulevard / Scott Street	Signal	AM PM	21 20	C B

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersections, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach (indicated in parentheses).
[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersections, LOS is based on the worst approach, which for AWS is indicated in parentheses.
[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. TEP recommendations include new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The TEP recommendations were unanimously endorsed by the SFMTA Board of Directors in October 2008, for environmental impact review. The initial TEP recommendations were revised based on public feedback on the draft TEP environmental impact report (TEP EIR). The TEP EIR was certified on March 27, 2014, and the SFMTA Board of Directors approved most of the

Service Improvements and portions of the Transit Travel Time Reduction Proposals on March 28, 2014.[10] The TEP project will be implemented based on funding and resource availability. The TEP Implementation Strategy anticipates that many of the improvements will be implemented sometime between Fiscal Year 2014 and Fiscal Year 2019, subject to funding sources and resource availability.[11] The changes proposed by the TEP for routes near the Mount Zion campus site, plus the non-TEP changes proposed to the 38 Geary/38L Geary Limited, are described in the TIS (Appendix G).

UCSF Shuttle System

UCSF Shuttles to and from the Mount Zion campus site (Gold, Blue, Black, Tan, and Purple) stop at a designated shuttle loading zone located midblock on Sutter Street between Divisadero Street and Scott Street. A more-detailed description of the UCSF shuttle system serving the Mount Zion campus site area is provided in Appendix G (TIS for the UCSF LRDP).

8.14.2.4 Pedestrian Circulation

Based on the 2013 UCSF Transportation Commute Survey, approximately 6% of those traveling to and from the campus site walk. About 54% of all trips made by UCSF Mount Zion campus site employees and students to off-campus locations throughout the day are made by foot.

Pedestrian activity is high around the Mount Zion campus site, particularly along Divisadero Street between Geary Boulevard and Bush Street. Beyond the campus site itself, many ground level shops, restaurants, and services in the area attract foot traffic.

Pedestrian facilities include sidewalks, crosswalks, curb ramps, and pedestrian signals. Within the campus site area, sidewalks generally exist on both sides of the street in most locations, and are generally 11 to 15 feet wide. Continental crosswalks are provided at the intersections of Divisadero / Bush and Divisadero / Sutter, while standard crosswalks are provided at other intersections surrounding the campus site. Curb ramps are generally provided at all intersections in the vicinity of the campus site. Pedestrian signals are present at signalized intersections surrounding the campus site with the exception of the signalized intersection of Divisadero Street / Sutter Street.

8.14.2.5 Bicycle Circulation

Based on the 2013 UCSF Transportation Commute Survey, approximately 3% of those traveling to and from the Mount Zion campus site use a bicycle. This is consistent with the bicycling mode share throughout San Francisco. Bicycle counts indicate the most popular bicycling route through

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10 San Francisco Planning Department. 2014. TEP Final EIR, March 27, 2014, Available online at http://tepeir.sfplanning.org. Accessed April 3, 2014. Case No. 2011.0558E. The document and supporting information may also be viewed at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA in case file 2011.0558E.

11 San Francisco Municipal Transportation Agency. 2014. TEP Implementation Workbook, March 5, 2014, Available online at: http://www.sfmta.com/sites/default/files/projects/TEP%20Implementation%20Plan%20-%20Section%201%20%282%29_1.pdf. Accessed June 27, 2014.

the campus site is Post Street, where between 40 and 70 bicyclists were counted during the AM and PM peak hours. Fewer than 10 bicyclists were counted during the AM and PM peak hours on most other streets in the study area.

The following bicycle facilities are located within or near the Mount Zion campus site:

- **Post Street** is part of San Francisco Bike Route 16, an east-west bike route extending from Van Ness Avenue to Presidio Avenue. Between Van Ness Avenue and Steiner Street, Post Street is designated as a Class III bicycle route with sharrows. From Steiner Street to Presidio Avenue, Post Street has Class II bicycle lanes in both directions.

- **Clay Street** is part of San Francisco Bike Route 10, an east-west bike route that extends from the Embarcadero to Cherry Street via Broadway Street, Pacific Avenue, Webster Street, and Clay Street. Between the Embarcadero and Columbus Avenue, Bike Route 10 is a Class III bicycle route with sharrows, while the rest of the route is Class III, but with no sharrows.

The SF Bike Plan does not include any short- or long-term improvements in the Mount Zion campus site area.

Bicycle counts indicate the most popular bicycling route through the campus site is Post Street, where between 40 and 70 bicyclists were counted during the AM and PM peak hours. Fewer than 10 bicyclists were counted on most other streets during the AM and PM peak hours in the study area.

Short-term bicycle parking is provided in "u-racks" in front of UCSF buildings on Sutter, Divisadero, and Post streets, and within the 2230 Post Street garage. Secure bicycle parking is provided in a bicycle cage in the 2325 Post Street and 2420 Sutter Street garages. Bicycle parking was observed to be less than half full at most short-term and secure bicycle parking locations.

8.14.2.6 Loading Conditions

The Mount Zion campus site has both service vehicle and passenger loading. There are three off-street service vehicle loading facilities serving the existing uses on the campus site. Passenger and service vehicles may also load on-street in marked zones on Sutter Street, Post Street, and Scott Street.

The off-street loading dock at the building on Sutter Street between Divisadero and Scott streets receives approximately 20 deliveries a day, not including additional deliveries made by catering, food services, waste management and other contractors. Passenger loading fronting the Scott Street facility appears to currently be at capacity, as multiple passenger vehicles were seen occupying metered parking spots. Existing vehicle and most passenger loading areas provide sufficient amount of space for existing demand.

8.14.2.7 Parking Conditions

On-Street Parking

The majority of the streets in the vicinity of Mount Zion campus site are subject to Residential Parking Permit (Zone "G") restrictions (two-hour parking, except for residents, Mondays through Friday from 8:00 AM to 6:00 PM). Metered parking with 30-minute and one-hour time limits is provided along Divisadero Street and on portions of Post and Sutter streets on one to two blocks to the east and west of Divisadero Street.

Parking occupancies throughout the mid-morning, midday, and evening periods are very similar, close to 90% (i.e., very close to their effectively capacity). Most of the available parking during the peak parking demand periods is at non-metered spaces subject to residential permit parking restrictions, or at spaces subject to daytime passenger loading/unloading regulations. Overall, on-street metered parking is typically at capacity.

Off-Street Parking

There are three UCSF-managed and six public parking facilities in the vicinity of the Mount Zion campus site that provide a combined total of about 1,160 parking spaces. In addition, there are several private customer-only parking facilities that serve other medical office building in the area. The public parking facilities typically close in the late evening (e.g., at about 9:00 PM) and are not generally available for residential parking. The UCSF-managed parking facilities include:

- 1701 Divisadero Street garage, located at the northwest corner of Divisadero and Sutter streets, provides 156 marked spaces for parking by UCSF permit holders only.
- 2420 Sutter Street garage, located between Divisadero and Broderick streets, provides 172 public parking spaces and 56 UCSF permit-holders only spaces, and also connects underground to the 1701 Divisadero Street garage. If needed, attendant parking can increase the capacity of the garage by approximately 20 vehicles.
- 2325 Post Street garage, located between Divisadero and Broderick streets, provides 20 parking spaces (ground level), accessed off Post Street, and 29 spaces (upper level), accessed off Garden Street.
- Bush Street surface lot, located at the southwest corner of Bush and Scott streets, provides 20 UCSF permit holders only spaces.

The general public parking facilities include:

- 1635 Divisadero Street garage, located between Divisadero and Broderick streets, has approximately 430 marked spaces; attendant parking on the upper levels can increase the total capacity of the garage by approximately 50 vehicles.
- 2355 Post Street surface lot, located on the south side of the street between Divisadero and Broderick streets, has about 30 marked spaces, and can provide 37 additional spaces with attendant parking.

- 2186 Geary Boulevard surface lot, located on the north side of Geary Boulevard between Divisadero and Scott streets, It has 70 marked spaces and can provide 25 additional spaces with attendant parking.

- 2120 Geary Boulevard surface lot, located on the north side of Geary Boulevard between Divisadero and Scott streets, provides 30 marked spaces and can provide 16 additional spaces with attendant parking.

- 1515 Scott Street surface lot, located at the northwest corner of Geary Boulevard and Scott Street, provides 35 marked spaces and can provide 10 additional spaces with attendant parking.

- 2300 Sutter Street garage, located on the west side of the street, between Bush and Sutter streets, provides 23 public parking spaces.

Overall off-street parking occupancy is 88% during the mid-morning period (10:00 AM – 12 Noon) and 83% during the midday period (12 Noon – 2:00 PM), while the overall occupancy in the evening (6:00 PM – 8:00 PM) is 23%. The overall parking occupancy at the UCSF-managed parking facilities is generally lower than at the other facilities. During mid-morning, the peak parking demand period, the UCSF parking facilities near the Mount Zion site operate at about 84% of their capacity, while the other facilities operate at 91%. An occupancy above 90% typically represents that the facility has reached its effective capacity.

8.14.3 Transportation and Traffic – Mount Zion Campus Site Impacts and Mitigation Measures

8.14.3.1 Impact Methodology

Analysis Approach

The transportation analysis in this EIR considers operations-related issues related to vehicular traffic, transit facilities, pedestrians, bicyclists, and parking, as well as construction-related impacts, associated with the 2014 LRDP at the Mount Zion campus site. To determine potential impacts on the transportation system, it was first necessary to establish the background transportation conditions for the horizon years. Future year background conditions for this project are based on the countywide travel demand model developed and maintained by the San Francisco County Transportation Authority (SFCTA).

Vehicle, pedestrian, bicycle, and transit travel demand associated with the 2014 LRDP was estimated based on factors developed from extensive surveys conducted at existing UCSF facilities over the past few years, and through the use of a four-step process: trip generation, mode split, trip distribution, and trip assignment. In the first step, the number of person trips generated by the 2014 LRDP was estimated on a daily, AM and PM peak hour basis. Next, the person trips were assigned to different modes of travel (automobile, transit, UCSF shuttle, bicycles, etc.). Then, the geographic distribution of the trip origins and destinations was predicted, and finally, project trips for each mode were assigned to specific streets, UCSF shuttle routes and transit lines along the transportation network.

Travel Demand Estimates

The 2014 LRDP proposes various levels of growth at each campus site through the plan horizon year of 2035. Some known projects, such as Phase 2 of the Medical Center in Mission Bay, are currently projected to occur between 2035 and 2040, after the 2014 LRDP horizon year, but have been incorporated into the travel demand estimates presented in this document, As such, the transportation analysis represents a conservative approach as it includes development five years past the 2015 LRDP horizon, to the year 2040. Each campus site is expected to increase in population through the 2014 LRDP horizon year, with the highest growth expected at the Mission Bay site.

The Mount Zion campus site is estimated to generate a total of approximately 3,223 new daily person trips by 2040. That number of trips reflects the total number of additional person trips that would be generated by the increased campus site population. As described in Sections 6.14 and 7.14, some trips generated by campus site activity are internal trips that occur within the campus site. However, given its relatively small size, and to provide a conservative estimate of travel demand, no internal person trips were assumed to occur within the Mount Zion campus site.

"Mode choice" is the designation of trips to the various means that people use to travel, such as automobile, transit, walking, bicycling, taxi, or other mode of transportation. The determination of the mode of transportation used in trips to and from the Mount Zion campus site would depend on many characteristics of the trip (e.g., the population group that is, faculty, staff, vendor, patient, visitor), the type of trip (work, visit), and the specific site. Travel mode split and average vehicle occupancy assumptions were based on information collected by UCSF and its consultants, with the estimates of the future modal share based on the current modal splits for each campus site by population type, which take into account the transit accessibility, UCSF shuttle service, parking availability, and TDM measures being provided at each campus site; this approach is consistent with the travel demand methodologies established by the SF Planning Department. The majority of Mount Zion campus site trips arrive/depart the campus site by driving alone, followed by travel by public transit. The above-cited external daily person trips generated by the Mount Zion campus site are expected to use the following travel modes:

1,246	Auto Drive Alone
182	Drop-Off/Taxi
516	Carpool/Vanpool
810	Public Transit
165	UCSF Shuttle
100	Bicycle/Motorcycle
203	Walk

The auto drive alone, drop-off/taxi, carpool/vanpool, and UCSF shuttle person trips would generate about 1,292 daily vehicle trips.[12]

[12] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

Approximately 290 new vehicle trips would occur during the AM peak hour, and about 150 new vehicles would occur during the PM peak hour. There would be approximately 260 and 160 new transit riders in the AM and PM peak hour, respectively. A majority of transit users are expected to arrive/depart by SF Muni.

The new trips associated with the Mount Zion campus site were assigned to San Francisco and regional origins/destinations, including the four San Francisco Superdistricts (northeast, northwest, southeast, and southwest quadrants of the City), the East Bay, the North Bay, and the South Bay, as well as areas outside the Bay Area region. Information collected by UCSF as part of their ongoing surveys of employees, patients, visitors and residents was used in this analysis.

8.14.3.2 Construction Period Impacts

Impact TRAF-MZ-1: Implementation of the 2014 LRDP on the Mount Zion campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities. (Potentially Significant)

Impacts associated with demolition and construction activities that would occur as the 2014 LRDP is implemented are addressed in Chapter 5 (**Impact TRAF-LRDP-1**). That 2014 LRDP Plan-Level analysis determined that although construction activities would be temporary, construction impacts would be considered potentially significant given the magnitude of LRDP development over the course of many years and need for on-going coordination and monitoring. The potentially significant determination would apply to the LRDP elements of the Mount Zion campus site. The implementation of LRDP **Mitigation Measure TRAF-LRDP-1: Construction Coordination and Monitoring Measures** would reduce construction-period impacts to less-than-significant levels.

Mitigation Measure: Implement **Mitigation Measure TRAF-LRDP-1**

Significance after Mitigation: Less than Significant

8.14.3.3 Operational Impacts

Impact TRAF-MZ-2: Implementation of the 2014 LRDP on the Mount Zion campus site would increase traffic at intersections on the adjacent roadway network. (Less than Significant)

Table 8.14-2 presents a summary comparison of Existing and Existing plus Plan intersection LOS for the weekday AM and PM peak hours. The addition of 2014 LRDP-generated traffic would result in small changes in the average delay per vehicle at the study intersections, and all study intersections would continue to operate at the same acceptable service levels (LOS D or better) as under Existing conditions. Therefore, the 2014 LRDP's traffic impact would be considered less than significant.

Mitigation: None required.

TABLE 8.14-2
EXISTING AND EXISTING PLUS 2014 LRDP
PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – MOUNT ZION

Intersection	Traffic Control[a]	Peak Hour	Existing		Existing plus 2014 LRDP	
			Delay (sec.)[b]	LOS[c]	Delay (sec.)[b]	LOS[c]
45. Pine Street / Divisadero Street	Signal	AM PM	14 32	B C	14 32	B C
46. Bush Street / Broderick Street	Signal	AM PM	17 11	B B	17 11	B B
47. Bush Street / Divisadero Street	Signal	AM PM	48 18	D B	48 20	D B
48. Bush Street / Scott Street	Signal	AM PM	30 17	C B	32 17	C B
49. Bush Street / Pierce Street	Signal	AM PM	30 15	C B	32 15	C B
50. Sutter Street / Broderick Street	AWS	AM PM	<10 (<10) <10 (<10)	A (A) A (A)	<10 (<10) <10 (<10)	A (A) A (A)
51. Sutter Street / Divisadero Street	Signal	AM PM	12 12	B B	13 13	B B
52. Sutter Street / Scott Street	AWS	AM PM	10 (11) 11 (12)	B (B) B (B)	10 (11) 11 (12)	B (B) B (B)
53. Sutter Street / Pierce Street	AWS	AM PM	<10 (<10) <10 (<10)	A (A) A (A)	<10 (<10) <10 (<10)	A (A) A (A)
54. Post Street / Broderick Street	Signal	AM PM	14 12	B B	14 12	B B
55. Post Street / Divisadero Street	Signal	AM PM	17 14	B B	19 16	B B
56. Post Street / Scott Street	Signal	AM PM	17 15	B B	18 15	B B
57. Post Street / Pierce Street	SSS	AM PM	12 11	B B	12 11	B B
58. Geary Boulevard / Broderick Street	SSS	AM PM	15 17	B C	15 18	B C
59. Geary Boulevard / Divisadero Street	Signal	AM PM	34 30	C C	36 31	D C
60. Geary Boulevard / Scott Street	Signal	AM PM	21 20	C B	21 20	C B

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersections, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach (indicated in parentheses).
[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersections, LOS is based on the worst approach, which for AWS is indicated in parentheses.
[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

Impact TRAF-MZ-3: Implementation of the 2014 LRDP on the Mount Zion campus site would increase transit ridership demand. (Less than Significant)

As described in 8.14.3.1 above, approximately 260 and 160 new transit trips are expected during the AM and PM peak hour, respectively. About 60% of transit users would use SF Muni and 20% would use BART to commute to and from the campus site, while the remaining 20% of transit users would use the UCSF shuttle, Caltrain, SamTrans or Golden Gate Transit.

San Francisco Muni

Existing Muni transit stops are located within a half-mile of the campus site, and are accessible by walking, and no stop relocations are anticipated at this time. The TEP proposes several changes on routes traversing adjacent to and within the Mount Zion campus site. The 1 California, 2 Clement, and 24 Divisadero will reduce peak period headways, and a supplemental trolley coach service will be added to the 2 Clement. In addition, Muni proposes to convert the 38 Geary/38L Geary Limited to Bus Rapid Transit (BRT), with high service frequencies (proposed to begin service by 2020).

The estimated number of 2014 LRDP-generated Muni trips is about a 35% increase in ridership traveling to and from the Mount Zion campus site, which would not require the expansion of transit service or facilities. The 2014 LRDP-generated transit trips for the 38 Geary corridor were assumed to split evenly between the 38 Geary and the 38L Geary Limited Outbound during the PM peak hour, resulting in the 38 Geary Limited outbound operating above Muni's crowding standard (85% capacity utilization). It should be noted that transit riders could choose to travel on either bus line, thus if one bus line (e.g., 38L Geary Limited) were crowded, then riders have the option of traveling on the less-crowded 38 Geary, which serves the same stops and destinations. The 2014 LRDP's transit impact on SF Muni transit service would be considered less than significant.

Regional Transit

UCSF staff, patrons and students are anticipated to continue to use BART, Caltrain, SamTrans, and Golden Gate Transit for regional transit service through the 2014 LRDP horizon year. Regional service stations are likely to remain at existing locations, accessed by SF Muni and UCSF shuttles, and Golden Gate Transit riders can walk to the nearest stop, located on Geary Boulevard and Divisadero Street. Fewer than 70 new regional transit trips are expected during each AM and PM peak hours, and that increase would not require the expansion of regional transit service or facilities. Therefore, the 2014 LRDP's transit impact on regional transit service would be considered less than significant.

UCSF Shuttle

The 2014 LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as 2014 LRDP projects are constructed and occupied at the campus site.

An additional estimated 30 AM and PM peak hour shuttle person trips, an approximately 40% increase during both peak hours are anticipated through the 2014 LRDP horizon year, and that increase would not require the expansion of UCSF shuttle service or facilities. Therefore, the 2014 LRDP's transit impact on UCSF Shuttle service would be considered less than significant.

Mitigation: None required.

Impact TRAF-MZ-4: Implementation of the 2014 LRDP on the Mount Zion campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The 2014 LRDP does not propose changes to pedestrian amenities or introduce new conflicts to the pedestrian network surrounding the Mount Zion campus site. Overall, the 2014 LRDP would not change pedestrian accessibility to the Mount Zion campus site and on the campus site frontage. Further, the LRDP would not conflict with proposed changes to Geary Boulevard to accommodate BRT service.

The 2014 LRDP would add approximately 250 and 140 pedestrian trips (mostly transit-access trips) to the surrounding streets during the AM and PM peak hours, respectively. Pedestrian trips would primarily use Divisadero Street to access nearby commercial uses and would disperse across the surrounding street grid to access the residential neighborhoods in Pacific Heights and the Western Addition. The 2014 LRDP-generated transit trips begin and end as pedestrian trips, and those pedestrian trips would be along Divisadero Street to transit stops on Divisadero Street, Sutter Street, Geary Boulevard, or California Street. UCSF shuttle riders will walk to the stop located within the center of the campus site on Sutter Street between Divisadero and Scott streets. Existing pedestrian facilities adequately accommodate existing pedestrian volumes and overcrowding is not expected to occur due to the 2014 LRDP.

The immediate area surrounding the Mount Zion campus site includes robust pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops, and that would accommodate the new pedestrian trips generated by the 2014 LRDP. The 2014 LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the 2014 LRDP's impact to pedestrian circulation and facilities at the Mount Zion campus site would be less than significant.

Mitigation: None required.

Impact TRAF-MZ-5: Implementation of the 2014 LRDP on the Mount Zion campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The area around the Mount Zion campus site has a number of streets with bicycle lanes, and streets designated as bicycle routes, including Post Street and Clay Street. The Mount Zion campus site is within convenient bicycling distance of residential and commercial areas in surrounding neighborhoods. The LRDP does not propose changes to the bicycle circulation network surrounding the Mount Zion campus site. The SF Bike Plan does not include any short- or long-term improvements in the study area.

The 2014 LRDP is expected to increase bicycle demand in the area by approximately 20 and 10 new trips during both the AM and PM peak hours, respectively. These trips would primarily occur on designated bicycle facilities, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated at the

campus site through additional bicycle parking provided as a part of UCSF's TDM program. In the near-term, UCSF plans to add eight additional bicycle racks at the Mount Zion campus site, which would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The expected increase in bicycle traffic would not represent a level that would adversely affect bicycle facilities on the campus site, nor would the 2014 LRDP create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Therefore, the 2014 LRDP's impact to bicycle circulation and facilities at the Mount Zion campus site would be less than significant.

Mitigation: None required.

Impact TRAF-MZ-6: Implementation of the 2014 LRDP on the Mount Zion campus site would increase loading demand. (Less than Significant)

The San Francisco Planning Code requires that land uses, such as medical offices and hospitals, provide off-street loading spaces according to a prescribed schedule. The required loading supply was estimated based on that Code schedule, and the existing and proposed loading supply exceeds the Code requirement at the Mount Zion campus site.

The demand for loading spaces through the 2014 LRDP horizon year was calculated based on surveys from the Parnassus Heights campus site and methods described in the City's *Transportation Impact Analysis Guidelines for Environmental Review*. The existing peak hourly demand is estimated to be about 13 spaces on the Mount Zion campus site, and the 2014 LRDP horizon year peak hourly demand is estimated to be about 16 spaces.

It is expected that the estimated 2014 LRDP loading supply should be adequate for the estimated demand, but as mentioned above, the campus sites are unique and should be monitored over time. This is considered a less-than-significant impact if UCSF continues to monitor loading operations and provide appropriate supply with guidance from the SF Planning Code and existing operations. As noted in Section 8.14.2.6, the loading area fronting the Scott Street facility appears to currently be at capacity, as multiple passenger vehicles were seen occupying metered parking spots. While this is not considered a significant impact, an Improvement Measure to add a curbside passenger loading zone on Scott Street has been identified. UCSF could work with the SFMTA to add a curbside passenger loading zone on Scott Street. An additional 50-foot-long zone would require the removal of approximately two metered parking spaces on Scott Street. This loading zone will reduce overflow for passenger loading on Scott Street.

In addition to freight loading, there is a demand for passenger loading spaces, and in order to estimate passenger loading demand, the drop-off/taxi service mode split and a portion of the carpool mode split percentages presented in 8.14.3.1 above was applied to the peak AM and PM peak-hour person trips. The peak-hour passenger loading demand is estimated to increase by approximately 35% at the Mount Zion campus site.

The existing passenger loading supply is sufficient for the estimated 2014 LRDP loading needs during both the AM and PM peak hour. Therefore, the 2014 LRDP's impact to passenger loading is considered less than significant.

Mitigation: None required.

Impact TRAF-MZ-7: Implementation of the 2014 LRDP on the Mount Zion campus site would increase parking demand. (Less than Significant)

Under the 2014 LRDP, additional parking would be provided on the Mount Zion campus site, as warranted by the proposed development (i.e., the number of any new parking spaces would be determined as projects are proposed). It is estimated that the number of parking spaces owned by UCSF at the Mount Zion campus site would increase by approximately 185 spaces by year 2040. The following list describes the currently proposed changes in parking supply:

- A 185-space garage would be constructed as part of a new clinical and/or office/research building to be located on Scott Street, on the east side of the main block. The parking could be provided in the building, underground, or off-site.

As described previously, the available on-street parking is well-occupied at the Mount Zion campus site, and has therefore not been considered as a resource for the future parking utilization analysis, which has focused instead on the availability of off-street parking. Assessment of the growth of peak parking demand under the 2014 LRDP shows that the future parking utilization at the Mount Zion campus site would be at its effective capacity. Because there would not be a shortfall in parking supply, the 2014 LRDP's impact to parking is considered less than significant.

Mitigation: None required.

8.15 Utilities and Service Systems

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Utilities and Service Systems are contained in Section 4.15 of this EIR. The CEQA Significance Standards presented in Section 4.15.3 are used to evaluate the potential utilities and service systems impacts of all proposed 2014 LRDP activities.

The overall effects on water supply, wastewater treatment, storm drainage facilities, solid waste disposal and energy demand resulting from implementation of the 2014 LRDP were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. No expansion of water, wastewater or storm drainage facilities beyond the standard service connections of future buildings to the City's existing infrastructure is anticipated at the Mount Zion campus site.

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CHAPTER 9
Mission Center Campus Site – Setting, Impacts and Mitigation Measures

9.0 Introduction

This chapter considers the existing conditions and describes the potential impacts of 2014 LRDP activities proposed at the Mission Center campus site. Space program, population at LRDP horizon and proposed LRDP development activities that would occur at the Mission Center campus site were described in detail in Section 3.8.4 of Chapter 3, *Project Description*, and are summarized briefly below. The remaining 15 major sections of this chapter present the site settings and impacts for each of the 15 environmental topics.

9.0.1 Functional Zones

The Mission Center campus site has not been designated with functional zones by UCSF.

9.0.2 Space Program

The LRDP proposes an additional 2.39 million gsf in owned and leased buildings across all of UCSF's sites through 2035. The 100,000 gsf allocation of this growth at the Mission Center campus site at LRDP horizon in 2035 is shown below in **Table 9.0-1**.

TABLE 9.0-1
MISSION CENTER EXISTING AND LRDP HORIZON GSF

Type of Space	Existing 2013 Total gsf	LRDP Horizon 2035 Total gsf
Instruction	2,200	2,200
Research	27,800	27,800
Clinical	29,400	29,400
Support		
Academic Support	12,300	27,300
Academic/Campus Admin	192,400	247,400
Campus Community	8,100	23,100
Logistics	18,500	33,500
Support Subtotal	231,300	331,300
Housing	--	--
Vacant/Alteration	--	--
Total	**290,700**	**390,700**

9.0.3 Population

The total projected UCSF population across all campus sites (including population associated with the Phase 2 Medical Center at Mission Bay) would increase by approximately 17,000 at LRDP horizon. As shown in **Table 9.0-2**, below, the projected increase in population at the Mission Center campus site would be approximately 530 in 2035.

TABLE 9.0-2
MISSION CENTER EXISTING AND PROJECTED POPULATION

	Existing (2013)	Projected Population at LRDP Horizon (2035)	Change
Students	16	26	10
Faculty and Staff	784	1,274	490
Patients	--	--	--
Visitors	55	89	34
Total	**855**	**1,389**	**534**

9.0.4 Mission Center – 2014 LRDP Proposals

As described in Chapter 5, the 2014 LRDP proposals at the four campus sites consist of four general activities: 1) demolition, 2) renovation, 3) construction of new facilities, and 4) circulation, open space, and utilities/infrastructure proposals. The 2014 LRDP proposal at the Mission Center campus site only includes construction of new facilities, as listed below.

Construction Proposals

- Office building and parking facility

9.1 Aesthetics

This section considers the setting and Aesthetics impacts at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential Aesthetics effects are contained in Section 4.1 of this EIR. The CEQA Significance Standards presented in Section 4.1.3 are used to evaluate the potential aesthetics impacts of all proposed 2014 LRDP activities.

9.1.1 Aesthetics Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Scenic vista.** The construction of the proposed office building and parking structure would not result in a potential adverse effect on a scenic vista. Therefore, no additional analysis of this issue is required.

- **Scenic resources.** The construction of the proposed office building and parking structure would not result in an adverse impact to scenic resources within a state scenic highway. Therefore, no additional analysis of this issue is required.

9.1.2 Aesthetics – Mission Center Setting

The three-acre Mission Center campus site is in the northeast portion of San Francisco's mixed use Mission District, located on the southern half of the block bounded by Fourteenth, Harrison, Fifteenth and Folsom streets. It has only one building that is six stories tall (approximately 72 feet). The building fronts on Folsom Street, but the main entrance is adjacent to the 220-space parking lot, which can be accessed from Harrison and Fifteenth streets. A San Francisco MUNI Bus Depot occupies the entire block south of the campus site across Fifteenth Street. Other uses in the vicinity include low-rise light industrial and automotive services, a grocery and some residential properties westward down Fifteenth Street.

9.1.3 Aesthetics – Mission Center Impacts and Mitigation Measures

Impact AES-MC-1: The proposed office/research building and parking structure at the Mission Center campus site would not substantially degrade the existing visual character or quality of the campus site and its surroundings. (Less than Significant)

The proposed office/research building has not yet been designed, but for planning purposes the LRDP assumes that it would not exceed the City's height limit of 55 feet, which would allow for a four-story building of up to 100,000 gsf. To help integrate the site into the surrounding fabric of the City, a small amount of retail space or another active use at the ground floor would be considered when this building is programmed. A five-story, approximately 95,000 gsf garage

with up to 294 parking spaces would be built between the existing and new buildings. The proposed garage would be shorter than both the existing and proposed buildings on the campus site. Vehicular access into the garage would be limited to Harrison Street. As discussed further in Section 8.4, *Cultural Resources*, both the proposed building and garage would be constructed toward the secondary façade of the existing Mission Center building, which would not affect views of the primary façade on Folsom Street. Additional open space with a southern exposure would be developed between the existing and proposed office buildings.

Although changes in appearance at the Mission Center campus site would be noticeable, particularly along Fifteenth Street, the new buildings would be built in accordance with UCSF's *Physical Design Framework* and *Facilities Design Guidelines* and would be consistent with the 2014 LRDP's Community Planning Principles regarding Building and Public Realm Design. The design guidelines would ensure that the final design of the buildings responds to the form of adjacent buildings (e.g., in terms of massing and height) and the overall urban context of the Mission Center campus site and surrounding neighborhood. Because the new buildings would be visually similar to existing uses on and adjacent to the campus site, the proposed buildings would not substantially degrade the visual character of the campus site and its surroundings. Therefore, effects to visual quality and character are less than significant.

Mitigation: None required.

Impact AES-MC-2: The proposed office building and parking structure at the Mission Center campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area. (Potentially Significant)

The proposed office/research building and parking structure could increase ambient light levels due to light dispersion resulting from new buildings at this location. Increases in night lighting could affect nighttime views in this area from the surrounding neighborhood. New light sources could include street lights, illuminated signage, exterior safety lighting and light emitted from building windows. Glare could be generated from reflective building materials. Because specific architectural features and building materials of the new buildings have yet to be determined, the proposed improvements have the potential to include reflective surfaces, such as metal and glass. The resultant glare could affect nearby residents, pedestrians and passing motorists. **Mitigation Measure AES-LRDP-1** would be implemented to reduce the impact to a less than significant level. By employing appropriate design standards and minimizing the quantity of reflective material used in new construction, light and glare impacts and impacts to views related to lighting could be reduced to less-than-significant levels.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-1

Significance after Mitigation: Less than Significant

Impact AES-MC-3: Construction of the proposed office building and parking structure at the Mission Center campus site could result in flood lighting sites during nighttime construction activities. (Potentially Significant)

Although construction operations are generally expected to take place during the day, some activities could be conducted at night to reduce noise, vibration or other effects on daytime office or research uses. To enable construction at night, flood lighting would be required. The use of night lighting would have the potential to disturb residents in neighborhoods near the construction site, and potentially also affect nighttime views. Night lighting of the construction site would be temporary and would cease upon completion of construction. **Mitigation Measure AES-LRDP-2** would be implemented to reduce the impact of nighttime work lighting to a less than significant level.

Mitigation Measure: Implement Mitigation Measure AES-LRDP-2

Significance after Mitigation: Less than Significant

Impact AES-MC-4: The proposed office building and parking structure at the Mission Center campus site could cast shadow on City park property protected by City Planning Code Section 295 or create street-level winds that could be hazardous to pedestrians in the area. (Less than Significant)

The proposed office/research building on the Mission Center campus site would have a height of approximately 55 feet above ground and the proposed parking structure would be shorter than both the existing and proposed building on the campus site. The office/research building could cast shadow that would be, at most, approximately 350 feet long during the daylight hours between one hour after sunrise and one hour before sunset, throughout the year, the times covered by Planning Code Section 295. Since there are no City properties under the control of the Recreation and Park Department within that critical distance from the building site, shadow from the office/research building or parking structure would not affect City park property protected by City Planning Code Section 295. (See also Section 7.1 for more information on Section 295.)

In early morning, shadow from the office/research building would reach across the planned USCF central open space fronting Fifteenth Street, moving off it by mid-day, when both the building and parking structure shadows would reach north into mid-block interior open areas now used for parking and for rear access to other buildings. Afternoon shadow from the office/research building would reach Harrison Street sidewalks north of Fifteenth Street all year, reaching as far north as Alameda Street in fall and winter. Shadow from the office/research building would not reach any open space, except the planned central open space on the Mission Center campus site,

The planned central open space would be mostly shadowed by the office/research building in early-morning, would be mostly in sunlight from mid-morning to mid-afternoon, and then, by late-afternoon, would again be shadowed, but by the existing Mission Center building. The impact with regard to shadows would be less than significant.

As previously discussed under Impact AES-PH-5 in Section 6.1, a building that is 50 feet tall, or less, has very little to no effect on the wind, unless the building is very wide, or it is the only structure standing on an open site. Given that this building and parking structure will be located to the east of the existing Mission Center building and therefore shielded from the predominant west winds, there would be little or no change in pedestrian-level winds in the vicinity of the new building sites due to construction of the new building or garage.

The changes in wind conditions due to construction of the Mission Center building and garage would not result in a new pedestrian-level wind hazard or increase an existing wind hazard on adjacent sidewalks.

The impact with regard to winds would be less than significant.

Mitigation: None required.

9.2 Air Quality

This section considers the setting and air quality impacts at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Air Quality are contained in Section 4.2 of this EIR, while the plan-level Air Quality impacts of the 2014 LRDP are described in Section 5.1.2. The CEQA Significance Standards presented in Section 4.2.3 are used to evaluate the potential Air Quality impacts of all proposed 2014 LRDP activities.

9.2.1 Air Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Objectionable odors.** The proposed construction of the office building and parking structure would not result in objectionable odors affecting a substantial number of people. Therefore, no additional analysis of this issue is required.

9.2.2 Air Quality – Mission Center Setting

9.2.2.1 Sensitive Receptors

The closest sensitive receptors to Mission Center consist of residential land uses approximately 300 feet west of the development site on Folsom Street and residential land uses approximately 650 feet south of the development site on Sixteenth Street.

9.2.2.2 Existing Stationary Sources of Air Pollution

The BAAQMD inventory of permitted stationary sources of emissions identifies 12 permitted stationary emission sources present within or near the 1,000-foot zone of influence of the Mission Center campus site. These permitted facilities are primarily made up of stationary diesel engines for back-up power generators, auto body shops and gasoline fueling facilities.

The Mission Center campus site also operates fume hoods which emit TACs and has some laboratories that handle bio hazardous material (up to Biosafety Level 3)[1]. These fume hood emissions do not require a permit from BAAQMD based on the operating throughput and therefore have not been assigned an existing risk value in BAAQMD databases like permitted sources. UCSF maintains an inventory of chemical throughput for each campus site and has implemented a series of correctional measures to reduce exposure to fume hood emissions, which are expected to minimize health risks from fume hood emissions. The primary measure was to

[1] Biosafety levels are levels of safety precautions proscribed for various activities that involve work with biological materials. Four levels exist: Biosafety levels 1 to 4, with Biosafety Level 4 being the most hazardous. UCSF does not conduct Biosafety Level 4 activities

reduce the volume of chemical use within hoods, which are now inventoried. At present there are approximately seven active fume hoods in operation at the Mission Center campus site.

9.2.2.3 Major Roadways Contributing to Air Pollution

Harrison, Folsom and Sixteenth Streets are arterial streets in the existing local roadway system within the 1,000-foot zone of influence that have at least 10,000 vehicles in annual average daily traffic based on the City's SF CHAMP roadway model[2]. This traffic contributes to elevated concentrations of $PM_{2.5}$, DPM, and other contaminants emitted from motor vehicles near the street level. Additionally, U.S. 101 is a freeway located approximately 650 feet north of the Mission Center campus site.

9.2.3 Air Quality – Mission Center Impacts and Mitigation Measures

Impact AIR-MC-1: Implementation of the 2014 LRDP at the Mission Center campus site would result in increased emissions of criteria air pollutants during construction activities. (Potentially Significant)

Construction activities under the 2014 LRDP would result in emissions of criteria pollutants from the use of heavy-duty construction equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the campus site. In addition, fugitive dust or PM_{10} emissions would result from excavation, trenching, and other construction activities.

There is a single proposal for the Mission Center campus site under the LRDP: construct a new office building and parking structure.

Construction-related emissions from these proposals were calculated using the California Emissions Estimator Model (CalEEMod), assuming completion by 2025 and phasing lengths based on CalEEMod default estimates which are based on square footage for office and research building and the parking garages. All model inputs and outputs are provided in Appendix E.

Table 9.2-1 presents the average annual daily construction emissions generated by development under the 2014 LRDP at the Mission Center campus site. As can be seen in Table 9.2-1, estimated average daily construction-related exhaust emissions would not exceed the thresholds for NOx, ROG or particulate matter.

The BAAQMD approach to analysis of construction-related particulate impacts (other than exhaust PM) emphasizes implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions. As indicated under Impact AIR-LRDP-4 in Section 5.2 of this EIR, the BAAQMD considers construction-related fugitive dust impacts of projects to be less than significant if a suite of recommended dust-control measures are

[2] San Francisco Metropolitan Transportation Agency, Chained Activity Modeling Process version 4.3.0, Average Daily Traffic Volumes, provided to ESA August 2, 2012.

TABLE 9.2-1
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS WITHOUT MITIGATION - MISSION CENTER

Years	Estimated Emissions (lbs/day)			
	ROG	NO_X	Exhaust PM_{10}[a]	Exhaust $PM_{2.5}$[a]
2020/2021	22.62	28.41	1.73	1.65
BAAQMD Considered Construction Threshold	54	54	82	54
Potential Significant Impact?	No	No	No	No

SOURCE: ESA (Appendix E)

implemented. Therefore, BAAQMD-identified Best Management Practices for control of fugitive dust are adopted Campus-wide in Section 5.2 as **Mitigation Measure AIR-LRDP-1: Best Management Practices for Controlling Particulate Emissions.** With this measure in place the construction-related fugitive dust impacts would be less than significant.

Mitigation Measure: Implement Mitigation Measure AIR-LRDP-1

Although the criteria air pollutant emissions from demolition and construction proposals at the Mission Center campus site would be below BAAQMD significance thresholds, **Impact AIR-LRDP-4** in Section 5.2 identifies a significant and unavoidable LRDP construction-related air quality impact resulting from emissions of criteria air pollutants when the combined construction at all campus sites is considered. In response, **Mitigation Measure AIR-LRDP-2: Architectural Coatings** and **Mitigation Measure AIR-LRDP-3: Off-Road Equipment Control Measures** were adopted Campus-wide and therefore would also apply to construction projects at the Mission Center campus site.

Mitigation Measures: Implement Mitigation Measure AIR-LRDP-2 and AIR-LRDP-3

Significance after Mitigation: Less than Significant

Impact AIR-MC-2: Construction activities at the Mission Center campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents. (Less than Significant)

Construction activities under the 2014 LRDP would produce DPM and $PM_{2.5}$ emissions due to combustion equipment such as loaders, backhoes, and cranes, as well as haul truck trips. These emissions would result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences and schools). These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Consequently, a health risk assessment was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The health risk assessment was based on recommended methodology of the state Office of Environmental Health Hazard Assessment and adopted by BAAQMD. Detailed assumptions and methodology for the health risk assessment are included in Appendix E.

Additionally, cancer risk estimates also incorporate age sensitivity factors (ASFs). This approach provides updated calculation procedures that factor in the increased susceptibility of infants and children to carcinogens as compared to adults. For estimating cancer risks for residential receptors over a 70 year lifetime, the incorporation of the ASFs results in a cancer risk adjustment factor of 1.7.

A summary of the health impacts related to construction under the 2014 LRDP at the Mission Center campus site is presented in **Table 9.2-2**.

TABLE 9.2-2
CONSTRUCTION-RELATED HEALTH IMPACTS - MISSION CENTER

Receptor Type	Cancer Risk (per million persons)	Chronic Index	Acute Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
School Children	0.04	0.01	0.01	0.01
Existing Residence (adult / child)	0.64 / 7.19	0.02	0.21	0.08
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

As shown in Table 9.2-2, the maximum cancer risk for an existing residence-adult and residence-child (located to the west of the project site) would be 0.6 and 7.2 per million persons, respectively. The maximum cancer risk for a school-child receptor (including Marshall Elementary School) would be 0.04 per million persons. Thus, the cancer risk due to construction activities alone is below the BAAQMD threshold of 10 per million and would be less than significant.

The chronic HI would be 0.02 or less at all receptors. The chronic HI would be below the BAAQMD threshold of 1 and the impact of the construction would be less than significant. The acute HI would be 0.2 or less at all receptors. The acute HI would be below the BAAQMD threshold of 1 and the impact of the construction would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.1 $\mu g/m^3$ for the school-child and the existing residences. The construction-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Impact AIR-MC-3: Operations at the Mission Center campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (Potentially Significant)

2014 LRDP proposals at the Mission Center campus site would result in an increase in criteria air pollutant and precursor emissions, including ROG, NOx, PM_{10} and $PM_{2.5}$ from a variety of emissions sources, including onsite area sources (e.g., natural gas combustion for space and water

heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.) and mobile on-road sources. Operational emissions of criteria pollutants were estimated using the CalEEMod version 2013.2.2 emissions inventory model. All model inputs and outputs are provided in Appendix E.

One of the sources of operational emissions would be increased vehicle emissions from traffic due to additional staff and visitors. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the LRDP (Adavant, 2014). Development at the campus site would generate an estimated 540 additional daily vehicle trips. In addition to exhaust emissions, vehicles would also generate PM_{10} and $PM_{2.5}$ from entrained road dust and tire and brake wear.

Emissions would also be generated by on-site natural gas combustion, operation of landscape maintenance equipment, and maintenance application of paint and other architectural coatings.

Table 9.2-3 presents estimated operational emissions from development under the 2014 LRDP at the Mission Center campus site. As shown in the table, without mitigation, operational emissions of NOx and ROG, PM_{10} and $PM_{2.5}$ would be below threshold levels.

Although estimated emissions at the Mission Center campus site would be less than the daily thresholds, **Impact AIR-LRDP-5** in Section 5.2 identifies a significant and unavoidable operational air quality impact resulting from emissions of criteria air pollutants when LRDP operations at all campus sites are considered. In response, **Mitigation Measure AIR-LRDP-4: BAAQMD-Suggested Operational Measures** was adopted Campus-wide and therefore would also apply to operation of projects at the Mission Center campus site.

Mitigation Measure: Implement Mitigation Measure AIR-LRDP-4

Significance after Mitigation: Less than Significant

TABLE 9.2-3
UNMITIGATED OPERATIONAL CRITERIA POLLUTANT EMISSIONS- MISSION CENTER

	Estimated Emissions (lbs/day)			
Air Pollutant	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Mobile Sources[a]	1.28	2.39	2.83	0.80
Area Sources[a]	2.43	<0.001	<0.001	<0.001
Natural gas combustion	0.06	0.55	0.04	0.04
Total	**3.76**	**2.94**	**2.87**	**0.84**
Regional Significance Threshold	54	54	82	54
Significant Impact?	No	No	No	No

[a] Mobile sources are motor vehicles and trucks. Area sources include landscape maintenance (equipment used for these activities such as gasoline-powered lawnmowers and blowers), maintenance application of paints and other interior and exterior surface coatings, and increased use of consumer products that result in emissions of ROG. Natural gas combustion is for space and water heating.

SOURCE: ESA, 2014 (see Appendix E).

Impact AIR-MC-4: Operations at the Mission Center campus site under the 2014 LRDP would increase emissions of TACs and increase health risks for nearby residents. (Less than Significant)

Operations under the 2014 LRDP at the Mission Center campus site would not generate substantial DPM emissions. Development at the campus site would generate an estimated 540 additional daily vehicle trips from staff, students and visitors that would be almost entirely gasoline powered. New operational sources of TACs are not proposed. It is assumed that no additional research uses would occur at the new Mission Center building and therefore no new fume hood emissions would be generated. For planning purposes, the LRDP assumes that a new building would be no greater than the City's height limit of 55 feet, which is less than the 70-foot threshold for requiring a back-up generator. Consequently, generator emissions would not be a concern for this development. Operations resulting from implementation of the 2014 LRDP at the Mission Center campus site would have a less than significant impact with regard to health risks.

Mitigation: None required.

9.2.4 References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report, CEQA Thresholds of Significance Air Quality Guidelines, October 2009. Available at www.baaqmd.gov.

BAAQMD, 2010. Bay Area 2010 Clean Air Plan, September 15, 2010.

BAAQMD, 2012. CEQA Air Quality Guidelines. Adopted June 2011, updated May 2012. Available at www.baaqmd.gov.

9.3 Biological Resources

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Biological Resources are contained in Section 4.3 of this EIR. The CEQA Significance Standards presented in Section 4.3.3 are used to evaluate the potential impacts to biological resources of all proposed 2014 LRDP activities.

After evaluation of the 2014 LRDP proposals at the Mission Center campus site, the Initial Study concluded that all activities would result in no impact or less-than-significant impacts regarding biological resources issues. Therefore, no additional analysis is required.

9.4 Cultural Resources

This section considers the setting and cultural resources impacts of implementation of the 2014 LRDP at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Cultural Resources are contained in Section 4.4 of this EIR. The CEQA Significance Standards presented in Section 4.4.3 are used to evaluate the potential impacts to cultural resources of all proposed 2014 LRDP activities.

9.4.1 Cultural Resources Issues Adequately Addressed in the Initial Study

The Initial Study concluded that the construction of the proposed office building and parking structure and its potential effects on cultural resources would be evaluated in the EIR.

9.4.2 Cultural Resources – Mission Center Setting

The three-acre Mission Center campus site is in the northeast portion of San Francisco's mixed use Mission District, on the southern half of the block bounded by Fourteenth, Harrison, Fifteenth and Folsom Streets. It has only one building, 1855 Folsom Street, which is six stories tall and contains 291,000 gsf of office space for UCSF employees. Adjacent to the Mission Center building is a 207-space parking lot, which can be accessed from Harrison and Fifteenth Streets.

The Mission Center building site is located in what was historically the Mission Valley, a formerly rural area bisected by the meandering course of Mission Creek. This area was filled in during the late nineteenth century primarily to accommodate the city's growing commercial and industrial needs. Numerous heavy timber and steel-frame brick warehouses and factories were constructed in the area between 1890 and 1930, with the vast majority constructed after the 1906 Earthquake and Fire. It is within this context that the reinforced concrete and brick former industrial Mission Center Building was constructed in 1927 for the Illinois Pacific Glass Company (CCSF, 2011).

Although the interior of the building was altered for office uses in the 1970s, it was recommended as individually eligible for listing in the CRHR as part of the Showplace Square/Northeast Mission Survey, which was completed by the San Francisco Planning Department in 2011. A campus-wide survey commissioned by UCSF by Carey & Co. in 2011 concluded that the building is not individually eligible for the CRHR or the NRHP, but rather, could be a contributor to a potential historic district, the Showplace Square Heavy Timber and Steel-frame Brick Warehouse and Factory District, described below. Whether the property is considered individually eligible, or a contributor to a potential historic district, it is considered a historic resource for CEQA purposes. A review of this building by ESA in 2014 identified no changes since the original evaluation, and as such, its current historic status would remain.

The City's survey identified the discontiguous Showplace Square Heavy Timber and Steel-frame Brick Warehouse and Factory District as a potential historic district. Neither the Mission Center building or adjacent parking lot was identified by the City as being within or adjacent to any of the

three discontiguous areas that comprise the potential historic district; the closest of which is about two blocks to the east. As described above, however, the Mission Center building is considered a potential contributor to this district according to the Carey & Co. survey, and is being treated as such in this analysis. The parking lot adjacent to the Mission Center building is identified as 'non-historic' in both the City and Carey & Co. surveys.

9.4.3 Cultural Resources – Mission Center Impacts and Mitigation Measures

Impact CUL-MC-1: Construction of the proposed office building and parking structure at the Mission Center campus site would not result in a substantial adverse change in the significance of a historical resource. (Less than Significant)

The existing building on the Mission Center campus site will remain, and no changes in use are planned. UCSF would construct a new office building and parking structure in the location of the existing parking lot. The new building would be no greater than the City's height limit of 55 feet, which would allow for a four-story building up to 100,000 gsf. To support this space, a five-story, 95,600 gsf garage with up to 294 parking spaces would be built between the existing and new buildings.

Although the Mission Center building has been identified as individually eligible for listing in the CRHR, and a possible contributor to the potential Showplace Square Heavy Timber and Steel-frame Brick Warehouse and Factory District, and would be considered a historic resource for CEQA purposes, no changes to this building are planned under the 2014 LRDP. As such, no direct impacts to historic resources would occur. New construction adjacent to the Mission Center building would occur on the adjacent parking lot, which was identified as a non-historic site in the City and Carey & Co. surveys. The proposed parking garage to be constructed directly adjacent to the Mission Center building could indirectly affect the setting of this historic resource if completed in a manner that physically competed with, or overwhelmed, this historic brick building. However, the proposed parking garage would be shorter in height, smaller in size, and set back from Fifteenth Street, allowing the Mission Center building to 'read' as a separate building on the subject block. The proposed parking garage would be subordinate to the Mission Center building, allowing this building to retain its primacy on the subject block. In addition, both the proposed parking garage and office building would be constructed toward the rear or secondary façade of the Mission Center building, allowing the primary, front façade on Folsom Street to remain unaffected. For these reasons, the proposed office building and parking garage at the Mission Center site would have no significant impacts to the Mission Center building as a historic architectural resource. As the proposed office building and parking garage would be constructed about two blocks west from the other, primary grouping of contributors to the potential Showplace Square Heavy Timber and Steel-frame Brick Warehouse and Factory District, there would be sufficient distance between the new structures and the potential district such that no significant indirect impacts to the district would occur.

As this proposal would undergo additional CEQA review at the project-level, and the design of the project would be further refined at that time, there are future opportunities for UCSF to design

a building which meets their programmatic needs while honoring the industrial materials and massing of the adjacent Mission Center building as well as other industrial buildings in the surrounding area.

Mitigation: None required.

Impact CUL-MC-2: Construction of the proposed office building and parking structure at the Mission Center campus site could cause substantial adverse changes to archaeological resources. (Potentially Significant)

Due to its location within or near a former watercourse, the Mission Center campus site suggests a high sensitivity to contain significant archaeological deposits and/or features from both prehistoric and historic-period use and occupation. In order to minimize impacts resulting from construction of the proposed office building and parking structure to archaeological resources, the following mitigation measures are recommended.

Mitigation Measure CUL-MC-1: Archaeological Testing Program.

Based on a reasonable presumption that archeological resources may be present within the Mission Center campus site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed office building and parking structure on buried archaeological resources. UCSF shall retain the services of an archaeological consultant that meets Secretary of Interior standards for archaeology, and has knowledge of California prehistory and historical archaeology. The archeological consultant shall perform sufficient archival and background research to determine if an archeological testing program is appropriate. The archeological consultant shall prepare an archeological testing plan (ATP). The ATP shall identify the property types of the expected archeological resource(s) that potentially could be adversely affected by the proposed office building and parking structure, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program will be to determine to the extent possible the presence or absence of archeological resources and to identify and to evaluate whether any archeological resource encountered on the site constitutes an historical resource under CEQA.

If required, an archeological testing program shall be conducted in accordance with the approved ATP. After the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings. If based on the archeological testing program the archeological consultant finds that significant archeological resources may be present, the archeological consultant shall determine if additional measures are warranted. If feasible, the proposed office building and parking structure shall be re-designed so as to avoid any adverse effect on the significant archeological resource. If avoidance is not feasible, additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. These measures would be undertaken to reduce to a less than significant level any potential effects on a significant archeological resource as defined in CEQA Guidelines Section 15064.5 (a)(c).

Mitigation Measure CUL-MC-2: Consultation with Descendant Communities.

On discovery of an archeological site associated with a specific Native American or other descendant group, an appropriate representative of the descendant group shall be contacted

to discuss the potential cultural significance of the archaeological site and assist in developing a plan for the area of the find. Topics for discussion may include archeological field investigations, appropriate archeological treatment of resources, and, if applicable, interpretative treatment of the associated archeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group.

Mitigation Measure CUL-MC-3: Archaeological Monitoring.

The ATP (Mitigation Measure CUL-MC-1) will determine the need for archaeological monitoring. Should it be required before or after archaeological testing and/or data recovery, an archaeologist that meets the Secretary of the Interior's Standards and Guidelines for professional archaeologists will monitor ground-disturbing activities in areas proposed for ground disturbing activities associated with construction activities at the building sites. The monitor will be empowered to temporarily halt construction in the immediate vicinity of a discovery while it is evaluated for significance. With the archaeologist's approval, work may continue on other portions of the site. If the discovery proves to be significant, additional measures will be implemented; these may include avoidance, capping beneath a layer of sterile soil, or data recovery through archaeological excavation.

Should an archaeological artifact be discovered at the Mission Center campus site during project construction and excavation, pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" shall be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and UCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the construction of the office building and parking structure, representatives of UCSF and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation (per CEQA Guidelines 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (Per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR44716)).

Whether or not significant archeological resources are encountered during monitoring, the archeological consultant shall submit a written report of the findings.

Significance after Mitigation: Less than Significant

Impact CUL-MC-3: Construction of the proposed office building and parking structure at the Mission Center campus site could cause substantial adverse changes to paleontological resources. (Potentially Significant)

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and

sediments. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. In general, older sedimentary rocks (more than 10,000 years old) are considered most likely to yield vertebrate fossils of scientific interest. Review of geological maps and previous analysis suggests that there no unique paleontological resources or unique geologic features at the Mission Center site, which is underlain by dune sands. In the event that paleontological resources are uncovered during the course of construction, **Mitigation Measure CUL-LRDP-4** would reduce impacts to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-LRDP-4

Significance after Mitigation: Less than Significant

Impact CUL-MC-4: Construction of the proposed office building and parking structure at the Mission Center campus site could cause substantial adverse changes to human remains. (Potentially Significant)

As described above, the Mission Center campus site has a heightened sensitivity for the presence of prehistoric and historic period occupation, which also suggests a heightened sensitivity for the presence of human remains. Implementation of **Mitigation Measures CUL-MC-1** and **CUL-MC-2**, in addition to **Mitigation Measure CUL-LRDP-5** would reduce the impact to a less than significant level.

Mitigation Measure: Implement Mitigation Measure CUL-MC-1, CUL-MC-2, and CUL-LRDP-5

Significance after Mitigation: Less than Significant

9.4.4 References

City of San Francisco, *Showplace Square/Northeast Mission Historic Resource Survey*, 2011.

9.5 Geology, Soils and Seismicity

This section considers the setting and geology, soils and seismicity impacts of implementation of the 2014 LRDP at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Geology, Soils and Seismicity are contained in Section 4.5 of this EIR. The CEQA Significance Standards presented in Section 4.5.3 are used to evaluate the potential Geology, Soils and Seismicity impacts of all proposed 2014 LRDP activities.

Those impacts that are specific to the implementation of the 2014 LRDP at the Mission Center campus site are discussed below.

9.5.1 Geology, Soils and Seismicity Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Landslides.** The proposed office building and parking structure would not result in an adverse effect from landslides. Therefore, no additional analysis of this issue is required.
- **Expansive soils.** The proposed office building and parking structure would not be located on expansive soils. Therefore, no additional analysis of this issue is required.
- **Soils and wastewater disposal.** The proposed office building and parking structure would not result in the installation of septic tanks or alternative wastewater disposal systems. Therefore, no additional analysis of this issue is required.
- **Structural hazards.** The proposed office building would not result in potential effects regarding exposure to structural hazards in an existing building. Therefore, no additional analysis of this issue is required.

9.5.2 Geology, Soils and Seismicity – Mission Center Setting

The Mission Center campus site is located within an area associated with the historic Mission Creek which has since been filled and built over. The relatively flat site lies at an elevation of approximately 22 feet above sea level. According to the California Geologic Survey (CGS), the Mission Center campus site is located within a Seismic Hazard Zone for liquefaction indicating a high potential for the presence of soils that could be susceptible to the effects of liquefaction during an earthquake (ABAG, 2014).

9.5.3 Geology, Soils and Seismicity – Mission Center Impacts and Mitigation Measures

There is only one development proposal for the Mission Center campus site under the 2014 LRDP, namely to construct an office / research building and parking structure.

As discussed in Section 5.5, the general Geology, Soils and Seismicity impacts that could occur as a result of implementing the 2014 LRDP, are:

Impact GEO-LRDP-1: Implementation of the 2014 LRDP could result in adverse effects to people and structures resulting from geologic hazards.

Impact GEO-LRDP-2: Implementation of the 2014 LRDP could result in substantial soil erosion or loss of topsoil.

The proposed office building and parking structure site is located in a seismically active region that could experience at least one major earthquake (Richter magnitude (M) 6.7 or higher) over the next 30 years. Strong ground shaking at the campus site could occur during a moderate to severe earthquake occurring on one of the active Bay Area faults near to the campus site. If not engineered appropriately, new construction could be susceptible to significant damage as a result of strong ground shaking. However, all proposed construction under 2014 LRDP would be required to adhere to the most stringent building code requirements which include measures to minimize potential from anticipated seismic forces. Due to the location of the campus site within the seismic hazard zone for liquefaction, the proposed plans would be required to be in compliance with Special Publication 117A which includes measures on the identification and appropriate mitigation of any identified liquefaction hazards. Adherence to these existing regulatory requirements as well as UC's *Seismic Safety Policy* would ensure that seismic hazards are reduced to less than significant levels.

Construction activities would also include disturbance to underlying soils. If not managed appropriately, these soils could be susceptible to the effects of wind and water erosion. However, all construction activities would be required to adhere to best management practices that include erosion control measures. As a result, the potential impacts related to erosion would be reduced to less than significant.

Mitigation: None required.

9.5.4 References

Association of Bay Area Governments (ABAG), *Interactive Map for Liquefaction Hazards, California Geological Survey*, http://gis.abag.ca.gov/website/LiquefactionCGS/index.html, accessed February 24, 2014.

University of California, *Seismic Safety Policy*, available at http://ucop.edu/real-estate-services/resources/seismic-safety-policy/index.html.

9.6 Greenhouse Gas Emissions

This section considers the setting and greenhouse gas emissions impacts of implementing the 2014 LRDP at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of greenhouse gas emissions are contained in Section 4.6 of this EIR. The CEQA Significance Standards presented in Section 4.6.3 are used to evaluate the potential greenhouse gas emissions impacts of all proposed 2014 LRDP activities.

9.6.1 Greenhouse Gas Emissions Issues Adequately Addressed in the Initial Study

The Initial Study concluded that construction of the proposed office building and parking structure at the Mission Center campus site and its potential effect on greenhouse gas emissions would be evaluated in the EIR.

9.6.2 Greenhouse Gas Emissions – Mission Center Setting

Greenhouse gas (GHG) emissions are generated at the Mission Center campus site from a variety of sources. These include motor vehicle trips generated by uses on site, electrical and natural gas usage including, water and wastewater transport (the energy used to pump water and wastewater to and from the campus site), and solid waste generation.

9.6.3 Greenhouse Gas Emissions – Mission Center Impacts and Mitigation Measures

Impact GHG-MC-1: Development at the Mission Center campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (Potentially Significant)

Construction emissions from development were estimated using the CalEEMod emissions model assuming the construction of a 100,000 square foot office building and 95,000 square foot parking garage. Construction-related emissions from development under the 2014 LRDP were calculated assuming completion by 2025 and phasing lengths based on CalEEMod default estimates which are based on square footage and number of parking spaces. All model inputs and outputs are provided in Appendix E. Construction-related GHG emissions for the one year anticipated construction period are presented in **Table 9.6-1**. Estimated emissions are 406 metric tons of carbon dioxide equivalent greenhouse gases[3] (CO_2e). As discussed earlier, BAAQMD has not established a quantitative threshold relative to construction-related emissions. In lieu of any proposed or adopted thresholds relative to construction-related emissions, these emissions are considered significant unless best management practices are implemented to reduce GHG emissions during construction, as feasible. Consequently, **Mitigation Measure GHG-LRDP-1** is identified to ensure implementation of best management practices during construction.

[3] CO_2e in all calculations of project impact include CO2, CH4 and N2O.

TABLE 9.6-1
ANNUAL CONSTRUCTION-RELATED GHG EMISSIONS
WITHOUT MITIGATION - MISSION CENTER

Emission Source	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
2015	405	<1	<1	406

NOTE: Project CO_2 emissions estimates were made using CalEEMod v.2013.2.

Mitigation Measure: Implement Mitigation Measure GHG-LRDP-1

Significance after Mitigation: Less than Significant. Implementation of Mitigation Measure GHG-LRDP-1 would ensure that the applicant employs feasible, effective measures to reduce GHG emissions during construction. This mitigation measure would therefore reduce this potential impact to a less than significant level.

Impact GHG-MC-2: Development at the Mission Center campus site under the 2014 LRDP would result in an increase in operational GHG emissions. (Less than Significant)

Operational Emissions

Area, Energy, and Indirect Sources

GHG emissions from electrical usage, natural gas combustion, mobile transportation, water and wastewater conveyance, and solid waste were estimated using the CalEEMod model, and are presented in **Table 9.6-2**. Default GHG emissions factor for PG&E was adjusted to reflect future reductions envisioned by PG&E (PG&E, 2013). Electrical and natural gas emissions also assume compliance with UCSF policy to achieve a 20% energy reduction beyond Title 24 requirements. Energy use (electrical and natural gas) represents approximately 38% of estimated operational GHG emissions.

TABLE 9.6-2
ANNUAL OPERATIONAL GHG EMISSIONS
WITHOUT MITIGATION - MISSION CENTER

Emission Source	Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	Total CO_2e
Area Sources	<1	<1	<1	<1
Energy Sources	345	<1	<1	334
Mobile Sources	345	<1	<1	345
Solid Waste	19	1	<1	42
Water and Wastewater	23	1	<1	40
Total	**719**	**2**	**<1**	**762**

NOTE: Columns may not total precisely due to rounding. Rows may not total precisely due to differences in global warming potential.

Mobile Emission Sources

One of the sources of operational emissions would be increased vehicle emissions from additional staff, patients, visitors and residents. Traffic volumes used to estimate vehicle-related emissions were derived from the Transportation Demand Analysis prepared for the LRDP (Adavant, 2014). Development under the 2014 LRDP at the Mission Center campus site would generate an estimated 540 additional daily vehicle trips. GHG emissions from motor vehicle sources were calculated using CalEEMod. Table 9.6-2 presents the incremental mobile source GHG emissions associated with development under the 2014 LRDP at the Mission Center campus site, which represent approximately 50% of the total operational GHG emissions.

As shown in Table 9.6-2, the sum of both direct and indirect GHG emissions resulting from operations under the 2014 LRDP at the Mission Center campus site would result in an estimated 762 metric tons per year of CO_2e. Applying a service population of 500 persons associated with development at the Mission Center campus site (490 new faculty and staff and 10 students) results in operational emissions of approximately 1.5 metric tons CO_2e/SP/yr. This is below the service population threshold of 4.6 metric tons CO_2e/SP/yr and operational GHG emissions associated with development under the 2014 LRDP at the Mission Center campus site would therefore be a less than significant impact.

Mitigation: None required.

9.6.4 References

Adavant Consulting, Travel Demand Analysis Four Campus Summary: Existing & 2035, February, 2014.

Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report, CEQA Thresholds of Significance Air Quality Guidelines, October 2009. Available at www.baaqmd.gov.

BAAQMD, 2012. CEQA Air Quality Guidelines. Adopted June 2011, updated May 2012. Available at www.baaqmd.gov.

Pacific Gas & Electric Company (PG&E), Greenhouse Gas Emission Factors: Guidance for PG&E Customers, April, 2013.

9.7 Hazards and Hazardous Materials

This section considers the setting and hazards and hazardous materials impacts at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Hazards and Hazardous Materials are contained in Section 4.7 of this EIR. The CEQA Significance Standards presented in Section 4.7.3 are used to evaluate the potential hazards and hazardous materials impacts of all proposed 2014 LRDP activities.

9.7.1 Hazards and Hazardous Materials Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Safety hazards from airport operations.** The construction of the proposed office building and parking structure would not result in safety hazards resulting from proximity to public or private airports. Therefore, no additional analysis of this issue is required.

- **Wildland fires.** The construction of the proposed office building and parking structure would not result in exposure to wildland fires. Therefore, no additional analysis of this issue is required.

9.7.2 Hazards and Hazardous Materials – Mission Center Setting

The Mission Center campus site is in a mixed use area of the City and currently consists of only one six-story building. The building is currently used for a variety of support services including campus police, documents, media and mail, information technology services, the finance services center and the controller's office. The building contains a small amount of research and other administrative functions.

9.7.3 Hazards and Hazardous Materials – Mission Center Impacts and Mitigation Measures

Impact HAZ-MC-1: Implementation of the 2014 LRDP at the Mission Center campus site could result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of existing or proposed schools. (Less than Significant)

The Marshall Elementary School is located approximately 0.2 miles southwest of the Mission Center campus. As discussed above, the new office building would be associated with handling, storage, and disposal of hazardous materials and wastes which would be managed consistent with current regulatory requirements and UCSF policies and plans. In general, existing hazardous materials use for administrative support services or even research laboratory purposes at UCSF

does not involve large enough quantities of hazardous materials or result in emissions that would represent potential health hazards to the Marshall Elementary School. Adherence to current regulatory requirements and UCSF policies and plans would provide sufficient control to reduce impacts from potential exposure to hazardous materials to a less than significant level.

Mitigation: None required.

Impact HAZ-MC-2: 2014 LRDP proposals located at Mission Center campus sites are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public. (Potentially Significant)

The Mission Center campus site is not found on the EnviroStor database maintained by the Department of Toxic Substances Control but does contain three cases (i.e., listed as Alioto's Garage, Commercial Building, and International Disposal) found on the Geotracker database maintained by the State Water Resources Control Board (DTSC, 2014 and SWRCB, 2014). The three case listings are listed as closed indicating that either the identified contamination was minimal or remediated to point such that no further action was warranted (SWRCB, 2014).

However, earthwork activities have the potential to encounter previously unidentified contamination or materials that contain naturally occurring asbestos fibers. As such, there is a potential for encountering that could present exposure hazards to workers or the public. However, with implementation of **Mitigation Measure HAZ-LRDP-1**, potential impacts from exposure to residual contamination or naturally occurring asbestos would be less than significant.

Mitigation Measure: Implement Mitigation Measure HAZ-LRDP-1

Significance after Mitigation: Less than Significant

9.7.4 References

Department of Toxic Substances Control (DTSC), Envirostor Database, http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=1800%20Folsom%20Street,%20San%20Francisco%20CA&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true, accessed February 18, 2014.

State Water Resources Control Board (SWRCB, Geotracker Database, http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607591574, accessed February 19, 2014.

9.8 Hydrology and Water Quality

This section considers the setting and hydrology and water quality impacts of implementation of the 2014 LRDP at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Hydrology and Water Quality are contained in Section 4.8 of this EIR. The CEQA Significance Standards presented in Section 4.8.3 are used to evaluate the potential Hydrology and Water Quality impacts of all proposed 2014 LRDP activities.

Those impacts that are specific to the implementation of the 2014 LRDP at the Mission Center campus site are discussed below.

9.8.1 Hydrology and Water Quality Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Groundwater supplies.** The construction of the proposed office building and parking structure would not result in substantial depletion of groundwater supplies or interfere substantially with groundwater recharge. Therefore, no additional analysis of this issue is required.

- **Housing or other structures within flood hazard areas.** The construction of the proposed office building and parking structure would not place housing or other structures within a flood hazard area. Therefore, no additional analysis of this issue is required.

- **Exposure to flooding.** The construction of the proposed office building and parking structure would not result in exposure to flooding. Therefore, no additional analysis of this issue is required.

- **Inundation by seiche, tsunami or mudflow.** The construction of the proposed office building and parking structure would not result in inundation by seiche, tsunami or mudflow. Therefore, no additional analysis of this issue is required.

9.8.2 Hydrology and Water Quality – Mission Center Setting

The three-acre Mission Center campus site is in the northeast portion of San Francisco's mixed use Mission District, located on the southern half of the block bounded by Fourteenth, Harrison, Fifteenth and Folsom streets. The campus site drains to the City's Combined Sewer System; flows are treated at the Southeast Treatment Plant before being discharged to San Francisco Bay.

9.8.3 Hydrology and Water Quality – Mission Center Impacts and Mitigation Measures

Under the 2014 LRDP, a new office/research building and parking garage is proposed at the Mission Center campus site.

Proposed LRDP development at the Mission Center campus site (including on-site staging) would include excavation, grading, and construction activities that would require temporary disturbance of surface soils and removal of existing pavement and sub-surface structures (if present). These activities would expose soil to water runoff as well as entrainment of sediment in the runoff. If dewatering would be necessary during construction, the water would likely contain suspended sediments and would require settling before being discharged to the Combined Sewer System. Sediment in runoff and deposits of soil and related debris from haul truck tires on local streets could increase the amount of sediment entering the storm drains, which could potentially clog drain inlets and reduce the flow capacity of the storm drains. The accumulation of this material could potentially result in increased localized ponding or flooding, particularly after large storm events.

The use of construction equipment as well as the delivery, handling, and storage of construction materials and waste could contaminate stormwater that could negatively impact water quality. Potential contaminants include, but are not limited to (CSW/Stuber-Stroeh, 2011):

- Petroleum hydrocarbons and metals from stockpiled soils excavated from the site
- Fuel from storage drums
- Diesel from refueling trucks
- Oils and grease from miscellaneous heavy equipment
- Sewage from portable sanitary facilities
- Sediment from construction generated waste–piles of concrete, rock and debris
- Sediment from rock crushing activities
- Hazardous materials storage-hydraulic oil, motor oil, and lubricating fluid
- Spills and releases of hydrocarbons and related pollutants from routine light maintenance activities such as fluid topping off, and welding and repairing belts and gears of heavy equipment

Polluted stormwater runoff could violate water quality standards and/or waste discharge requirements established in the NPDES General Permit for Construction and the NPDES discharge permits for the Southeast Treatment Plant.

In accordance with the Construction General Stormwater Permit, UCSF would be required to prepare and implement a SWPPP to minimize water quality impacts during construction activities on the campus site.

The SWPPP will identify pollutant sources within the construction area and recommend site-specific BMPs regarding control of sediments in runoff and storage and use of hazardous materials to prevent discharge of pollutants into stormwater. Likely BMPs are listed in Section 5.1.8.

In addition, construction of the proposed buildings will need to obtain a water quality certification from the RWQCB for the construction activity, which would also require implementation of BMPs and specific measures for the protection of water quality during construction.

Proposed development at the Mission Center campus site would not significantly change the volumes of site stormwater runoff, nor how this runoff is directed or routed through the campus site to the CSS. The proportion of impermeable surfaces at the campus site will not significantly change as a result of 2014 LRDP activities. Measures to prevent and minimize erosion and its potential effects on storm drain siltation and water quality would be included in the SWPPP.

Implementation of SWPPPs and associated BMPs would reduce erosion and water quality impacts during construction activities. These measures, part of the regulatory requirements discussed in Sections 4.8 and 5.8, limit the potential adverse effects of these impacts to less than significant.

Mitigation: None required.

9.8.4 References

CSW/Stuber-Stroeh Engineering Group, Inc., *Storm Water Pollution Prevention Plan*, UCSF Medical Center at Mission Bay, San Francisco, California, August, 2011.

9.9 Land Use and Planning

This section considers the setting and land use and planning impacts of implementation of the 2014 LRDP at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Land Use are contained in Section 4.9 of this EIR. The CEQA Significance Standards presented in Section 4.9.3 are used to evaluate the potential land use impacts of all proposed 2014 LRDP activities.

9.9.1 Land Use and Planning Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Physically divide an established community.** The proposed office building and parking structure would not physically divide an established community. Therefore, no additional analysis of this issue is required.

- **Habitat conservation plan.** The proposed office building and parking structure would not result in a conflict with any applicable habitat conservation plan. Therefore, no additional analysis of this issue is required.

9.9.2 Land Use and Planning – Mission Center Setting

The three-acre Mission Center campus site is in the northeast portion of San Francisco's mixed use Mission District, located on the southern half of the block bounded by Fourteenth, Harrison, Fifteenth and Folsom Streets. It has only one building that is six stories tall and contains 291,000 gsf. The building fronts on Folsom Street, but the main entrance is adjacent to the 220-space parking lot, which can be accessed from Harrison and Fifteenth streets.

9.9.2.1 UCSF Functional Zones

The Mission Center campus site has not been designated with functional zones by UCSF.

9.9.2.2 City of San Francisco Zoning

The Mission Center campus site is primarily located in a P (Public) Zoning District. P Districts refer to land owned by a governmental agency that is in public use, including open space. The entire campus site is located within the 55-X Height and Bulk District. The "X" designation permits all floors of structures to cover the entire building footprint.

9.9.3 Land Use and Planning – Mission Center Impacts and Mitigation Measures

Impact LU-MC-1: Implementation of the 2014 LRDP at the Mission Center campus site would be consistent with applicable land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

Upon adoption by the Regents, the proposed 2014 LRDP will replace the 1996 LRDP, as amended, and become the applicable campus land use plan for UCSF. Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. The University is the only agency with land use jurisdiction over programs and projects proposed at UCSF campus sites by the 2014 LRDP. Therefore, all proposed activities that would be in general conformance with the 2014 LRDP would have no significant land use impacts.

UCSF has not designated the Mission Center campus site with any functional zones. Its existing use, which consists of office and administrative units, would remain unchanged under the 2014 LRDP. The proposed LRDP activities at the Mission Center campus site would not conflict with City plans and policies adopted for the purpose of avoiding or mitigating an environmental effect and the impact would be less than significant.

Mitigation: None required.

Impact LU-MC-2: The proposed new office building at the Mission Center campus site would be compatible with adjacent land uses. (Less than Significant)

UCSF proposes to construct a new office/research building and parking garage on the Mission Center campus site. The proposed building would include up to 100,000 gsf and would not exceed 55 feet in height. A five-story, approximately 95,000 gsf parking garage with up to 294 parking spaces would be built between the existing and new buildings. Additional open space would be developed between the buildings.

The proposed use of the Mission Center campus site for office and administrative functions would remain consistent with the City's Public District designation. Although the proposed office building has not yet been designed, the proposed height would not exceed the City's height limit of 55 feet for this site. Land uses adjacent to the proposed development include a MUNI Bus Depot that occupies the entire block south of the campus site across Fifteenth Street and low-rise light industrial/commercial uses along Harrison Street. Development proposed for the Mission Bay campus site under the 2014 LRDP would be compatible with adjacent land uses and the impact would be less than significant.

Mitigation: None required.

9.10 Noise

This section considers the setting and noise impacts of implementation of the 2014 LRDP at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Noise are contained in Section 4.10 of this EIR. The CEQA Significance Standards presented in Section 4.10.3 are used to evaluate the potential noise impacts of all proposed 2014 LRDP activities.

9.10.1 Noise Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Airport noise.** The proposed office building and parking structure would not be located within the vicinity of a public or private airport. Therefore, no additional analysis of this issue is required.

9.10.2 Noise – Mission Center Setting

9.10.2.1 Existing Noise Environment

Long-term environmental noise in urbanized areas is primarily dependent on vehicle traffic volumes and the mix of vehicle types. The existing ambient noise environment within the Mission center campus site area is dominated by vehicular traffic on Fourteenth Street, Fifteenth Street, Harrison Street and Folsom Street as from the elevated section of U.S. 101 to the north of campus site.

The San Francisco Department of Public Health (DPH) has mapped transportation noise throughout the City and County of San Francisco, based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority travel demand model[4]. DPH maps indicate the areas subject to noise levels over 60 dBA (L_{dn}) and the range of L_{dn} noise levels that occur on every street in San Francisco. The maps with the Mission Center campus site area indicate that areas along Folsom Street are generally between 65 and 70 dBA (L_{dn}) while Harrison Street and Fourteenth and Fifteenth Streets are generally between 60 and 65 dBA (L_{dn}).

Ambient Noise Measurements

Ambient short-term (10-minute) noise measurement data were collected in March 2014 to characterize noise conditions in the Mission Center campus site area. To characterize ambient noise in the campus site area, the short-term measurement data were collected at a location where residential land uses exist adjacent to where proposed construction activities could occur. These data are presented in **Table 9.10-1**.

[4] San Francisco Department of Public Health (DPH), San Francisco City-wide Noise Map, August 2006, Available online at http://www.sfdph.org/dph/files/EHSdocs/ehsPublsdocs/Noise/noisemap2.pdf Accessed April 30, 2013.

TABLE 9.10-1
SHORT- TERM AMBIENT NOISE LEVEL DATA IN THE MISSION CENTER CAMPUS AREA

Measurement Location	Time	Noise Levels in dBA	
		Hourly L_{eq}	L_{max}
MC-ST1: Residences on Folsom Street between 14th Street and 15th Street	5:19 pm	69.8	85.9

NOTE: L_{eq} represents the constant sound level; L_{max} is the maximum noise level.

SOURCE: Environmental Science Associates, 2014.

9.10.3 Noise – Mission Center Impacts and Mitigation Measures

Impact NOI-MC-1: Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (Potentially Significant)

As noted in the Regional Setting section, the hours that construction activity noise can occur is restricted by Section 2908 of the Police Code. Although UCSF is not subject to the noise ordinance, it strives to be consistent with it. Section 2908 prohibits any person, between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day, from erecting, constructing, demolishing, excavating for, altering, or repairing any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line.

Construction of the proposed office building and parking structure would require the use of heavy duty off-road construction equipment. Construction activity noise levels at and near the building site would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction activities would involve excavation, grading, and earth movement and, potentially, pile driving. **Table 9.10-2** shows typical noise levels produced by various types of construction equipment typically involved with large-scale construction projects at a reference level of 50 feet and a distance of 300 feet which is the approximate distance from the new building site to the nearest residences on Folsom Street.

The nearest sensitive residential receptors to the campus site currently experience existing daytime noise levels of 70 dBA. Noise from standard construction equipment would be shielded by an existing building between these receptors and the office building and parking structure sites, resulting is a combined equipment noise level of 61 dBA, Leq, which would not exceed existing noise levels. Nevertheless, **Mitigation Measure NOI-LRDP-1** would be implemented to further reduce noise generated during standard construction activities.

Mitigation Measure: Implement Mitigation Measure NOI-LRDP-1

Significance after Mitigation: Less than Significant

TABLE 9.10-2
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 Feet)	Noise Level (dBA, Leq at 300 Feet)
Dump truck	76	60
Portable air compressor	78	62
Concrete mixer (truck)	79	63
Crane	81	65
Excavator	81	65
Dozer	82	66
Paver	77	61
Generator	81	65
Backhoe	78	62
Pile driver	101	85
Auger Drill Rig	84	68

SOURCE: FHWA, 2006.

Impact NOI-MC-2: Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels during pile-driving activities. (Potentially Significant)

An impact pile driver, if required could result in an increase of up to 15 dBA over existing noise levels, resulting in a significant noise increase over existing conditions. Consequently, mitigation measures to reduce construction noise are identified in **Mitigation Measure NOI-LRDP-2**.

Mitigation Measure: Implement Mitigation Measure NOI-LRDP-2

Significance after Mitigation: Significant and Unavoidable. Mitigation Measure NOI-LRDP-2 would reduce the severity of noise generated by pile-driving activities and reduce to the extent feasible the potential annoyance to nearby residents and others who could be disturbed by pile-driving. If piles can be installed though drilling and cast in place measures then these mitigation measures would result in a less than significant impact.

However, if geotechnical conditions exist such that impact or vibratory pile driving is required, then construction noise would be significant. Although pile-driving noise would be intermittent and would occur over a short duration, even after mitigation the increase in ambient noise level would likely exceed 10 dBA during pile-driving activities, resulting in a significant and unavoidable impact.

Impact NOI-MC-3: Construction activities proposed under the 2014 LRDP at the Mission Center campus site could generate ground-borne vibration. (Less than Significant)

The types of construction activities associated with propagation of ground-borne vibration include pile driving, use of hoe-rams for demolishing large concrete structures and caisson drilling. It is possible that pile driving and drilling could occur during building construction. Pile driving, if required could take one or more months, and would occur during daytime hours, consistent with the City's Police Code.

Of the construction equipment likely to be used for construction of the office building and parking structure, pile driving has the potential to result in the highest levels of groundborne vibration. Pile driving can result in peak particle velocities (PPV) of up to 1.5 inches per second (in/sec) at a distance of 25 feet (FTA, 2006), but typically results in an average of about 0.644 PPV at that distance. The Caltrans measure of the threshold of architectural damage for conventional sensitive structures is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings.

The nearest existing structure is approximately 60 feet away from the site of the proposed office building and parking structure, where pile driving may occur. At this distance, vibration from pile driving would be expected to be reduced to 0.17 inches per second. Therefore, vibration from pile driving would not exceed the criterion published by Caltrans of 0.25 in/sec for the protection of fragile older buildings. The nearest sensitive receptor are Folsom Street residents approximately 300 feet to the west. Vibration levels from pile driving at this distance would be 0.02 in/sec PPV which would be below the thresholds considered strongly perceptible. Consequently, if restricted to daytime hours, as required by ordinance, the 2014 LRDP proposals at the Mission Center campus site would have a less-than-significant impact with regard to groundborne vibration.

Mitigation: None required.

Impact NOI-MC-4: Operational noise generated by development under the 2014 LRDP at the Mission Center campus site could cause a long-term increase in ambient noise levels in the campus vicinity. (Less than Significant)

Long-term noise sources associated with operation of the new office building and parking structure would primarily consist of marginal increases in roadway traffic resulting from new and repurposed land use. There will likely be some new mechanical equipment (e.g. heating ventilation and air conditioning) associated with operation of the new office building. The potential location of such equipment is not at this time but such equipment would be operated is such a manner as to conform to the requirements of the City of San Francisco Noise Ordinance.

Increased traffic would primarily be on the local roadway network, including Fourteenth and Fifteenth Streets, Harrison Street and Folsom Street. A project would be considered to have a significant impact if it resulted in a permanent increase in ambient noise levels greater than 3 dBA above levels existing without the project for areas already impacted by noise.

Noise levels were determined for this analysis using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model and the turning movements in the traffic section for Existing (2014), Existing Plus LRDP, and Cumulative Plus LRDP conditions. Peak hour intersection turning data from the traffic study were analyzed to evaluate increases and resulting traffic-generated noise increases on roadway links most affected by LRDP -related traffic. The roadway segments analyzed and the results of the noise increases resulting from modeling are shown in **Table 9.10-3**, below.

TABLE 9.10-3
PEAK-HOUR TRAFFIC NOISE LEVELS IN THE VICINITY OF THE MISSION CENTER CAMPUS

Roadway Segment[a,b]	(A) Existing	(B) Existing Plus Project	(B-A) Difference between Existing Plus Project and Existing[c]	(D) Cumulative Plus Project (2035)	(D-A) Difference between Cumulative Plus Project and Existing
14th Street between Folsom Street and Harrison Street	61.7	61.9	0.2	62.4	0.7
15th Street between Folsom Street and Harrison Street	59.7	59.8	0.1	60.1	0.4
Harrison Street between 14th Street and 15th Street	66.0	66.1	0.1	66.4	0.4
Folsom Street between 14th Street and 15th Street	65.0	65.3	0.3	65.9	0.9

[a] Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model.
[b] The analysis considered the vehicle mix based on – cars 95 percent, medium trucks three percent, and heavy trucks two percent on all streets. Traffic speeds for all vehicle classes were set at 30 mph for all vehicle classes.

SOURCE: ESA, 2014.

As shown in Table 9.10-3, the increase in traffic noise from the Existing Plus LRDP scenario compared to the Existing scenario would increase peak hour noise levels by less than 3 dBA at all roadway segments. Overall, traffic noise impacts associated with the LRDP at all analyzed roadway segments in the vicinity of the Mission Center campus site would be less than significant.

Mitigation: None required.

9.10.4 References

California Department of Transportation (Caltrans), 2013. *Transportation- and Construction-Vibration Guidance Manual*, September 2013.

Caltrans, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

City and County of San Francisco (CCSF), *San Francisco General Plan*, adopted on June 27, 1996, http://www.sf-planning.org/ftp/General_Plan/index.htm, accessed February 20, 2014.

Federal Highway Administration (FHWA) Roadway Noise Construction Model, 2006.

Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

United States Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, http://www.fican.org/pdf/EPA_Noise_Levels_Safety_1974.pdf, accessed February 20, 2014.

9.11 Population and Housing

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Population and Housing are contained in Section 4.11 of this EIR. The CEQA Significance Standards presented in Section 4.11.3 are used to evaluate the potential population and housing impacts of all proposed 2014 LRDP activities.

The 2014 LRDP would result in population growth in San Francisco or the wider Bay Area through increased employment and student enrollment. The 2014 LRDP would accommodate an increase in employment and students at all campus sites from the current approximately 30,840 to approximately 42,270 by 2035. This anticipated population increase could result in an increased demand for housing in the Bay Area. This overall increase and its potential effect on housing were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures.*

The 2014 LRDP development proposals would result in an increase in daily population at this campus site of 530 people. The direct and indirect physical environmental effects that result from those changes are fully considered in each of the appropriate topical sections of this Chapter.

9.12 Public Services

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Public Services are contained in Section 4.12 of this EIR. The CEQA Significance Standards presented in Section 4.12.3 are used to evaluate the potential public services impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all sites, including patients and visitors, was approximately 39,420. At LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Mission Center campus site would be approximately 530 people by 2035.

This anticipated population increase could result in an increased demand for public services in San Francisco, including fire protection, law enforcement, and public education. This overall increase and its potential effect on public services were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. The anticipated small increase in population at this campus site under the LRDP would not cause substantial increased demand for public services specific to this campus site, and all impacts are found to be less than significant.

9.13 Recreation

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Recreation are contained in Section 4.13 of this EIR. The CEQA Significance Standards presented in Section 4.13.3 are used to evaluate the potential recreation impacts of all proposed 2014 LRDP activities.

In 2013, the estimated daily UCSF population across all sites, including patients and visitors, was approximately 39,420. At 2014 LRDP horizon in 2035, total population is projected to reach approximately 56,420, an increase of about 17,000, the majority of which would be associated with growth proposed by the 2014 LRDP. The projected increase in population at the Mission Center campus site would be approximately 530 people by 2035.

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that the anticipated small increase in population at this campus site under the LRDP would not cause substantial increased demand for recreation facilities specific to this campus site. All activities would result in no impact or less than significant impacts regarding recreation; therefore, no additional analysis is required.

9.14 Transportation and Traffic

This section considers the setting and transportation and traffic impacts of implementation of the 2014 LRDP at the Mission Center campus site. The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Transportation and Traffic are contained in Section 4.14 of this EIR. The CEQA Significance Standards presented in Section 4.14.3 are used to evaluate the potential transportation and traffic impacts of all proposed 2014 LRDP activities.

9.14.1 Transportation and Traffic Issues Adequately Addressed in the Initial Study

After evaluation of the 2014 LRDP activities proposed at the Mission Center campus site, the Initial Study concluded that:

- **Air traffic patterns.** No activities would result in a change in air traffic patterns. Therefore, no additional analysis of this issue is required.

9.14.2 Transportation and Traffic – Mission Center Setting

A more-detailed description of current transportation and traffic characteristics in the Mission Center campus site area is provided in Appendix G, Transportation Impact Study (TIS) for the UCSF LRDP.

9.14.2.1 Roadway Facilities

The network of regional roadways that serve the Mission Center campus site is described in Section 4.14.

The Mission Center campus site is located in the Mission neighborhood. The primary north-south corridors are Mission Street, Howard Street/South Van Ness Avenue, Folsom Street, Harrison Street, and Bryant Street. Primary east-west routes to the campus are Tenth Street, Thirteenth/Division Street, and Sixteenth Street. The primary vehicular entrances to parking and loading areas for the campus site are located along Harrison Street between Fourteenth and Fifteenth streets and along Fifteenth Street between Harrison and Folsom streets.

The local road network serving the Mission Center campus site consists of several two-lane roadways with on-street parking provided on both sides of the streets in most areas, as follows:

- **11th Street** runs from Bryant Street to Market Street and is classified as a Secondary Transit street. The 9 San Bruno and 9L San Bruno Limited bus lines operate along the entirety of 11th Street, while the 47 Van Ness bus line operates on 11th Street between Mission and Bryant streets. 11th Street has Class II bicycle lanes along its entire length.

- **14th Street** runs from Harrison Street to Buena Vista Terrace and operates one-way eastbound between Market and Folsom streets. 14th Street is designated as a Class III

bicycle route with shared-lane markings ("sharrows") between Harrison and Folsom streets.

- **15th Street** runs from Harrison Street to Roosevelt Way and operates one-way westbound between South Van Ness Avenue and Guerrero Street.

- **17th Street** runs from Pennsylvania Street to Stanyan Street. Near the campus site, 17th Street has Class II bicycle lanes in both directions.

- **Florida Street** runs from Division Street to 16th Street.

- **Alabama/Treat/Division Streets** runs from Bryant Street to 16th Street.

- **Shotwell Street** runs between 14th and 16th streets.

Major roadways in the local network are as follows:

- **Mission Street** is a four-lane roadway that extends from The Embarcadero to A Street in Daly City. The City classifies this roadway as a Primary Transit Oriented street. On-street parking is provided on both sides of the street. The 14 Mission and 14L Mission Limited Muni bus lines operate on Mission Street between The Embarcadero and San Jose Avenue; the 49 Mission/Van Ness bus line operates on Mission Street between South Van Ness Avenue and Ocean Avenue; and the 33 Stanyan operates on Mission Street between 16th and 18th streets. SamTrans Routes KX, 292 and 397 also operate along Mission Street between the Temporary Transbay Terminal and 10th Street. Several Golden Gate Transit basic and commute bus routes operate on Mission Street between the Temporary Transbay Terminal and Eighth Street.

- **Howard Street/South Van Ness Avenue** is a two to four-lane roadway that extends from The Embarcadero (as Howard Street) to Cesar Chavez Street (as South Van Ness Avenue), with Howard Street merging into South Van Ness Avenue just north of 13th Street. In addition, Howard Street operates as a southbound one-way street between Fremont Street and 11th Street. The City classifies this roadway as a Major Arterial. On-street parking is provided on both sides of the street. SamTrans Route 397 operates on Howard Street/South Van Ness Avenue between 10th Street and Cesar Chavez Street. Several Golden Gate Transit basic and commute bus routes operate on Howard Street between First and Eighth streets.

- **Folsom Street** is a three to four-lane roadway that extends from The Embarcadero to Ripley Street. In addition, Folsom Street operates as a northbound one-way street north of 11th Street. The City classifies this roadway as a Major Arterial east of 13th Street and a Local Street west of 13th Street. On-street parking is provided on both sides of the street. The 12 Folsom/Pacific bus line operates on Folsom Street between Second and Cesar Chavez streets. Several Golden Gate Transit basic and commute bus routes operate on Folsom Street between Fremont and Seventh streets. Folsom Street is designated as a Class II bike facility between 11th and 19th streets, but only has a northbound bicycle lane between 11th and 14th streets.

- **Harrison Street** is a three to four-lane roadway that extends from The Embarcadero to Cesar Chavez Street. The City classifies this roadway as a Secondary Transit street north of 11th Street(which transitions into a Primary Transit Important street until Fourth Street), a Major Arterial street between 11th and 13th streets, and a Local Street south of 13th Street.

In addition, Harrison Street operates as a southbound one-way street between Third Street and 10th Street. On-street parking is provided on both sides of the street. The 12 Folsom/ Pacific, 27 Bryant, and 47 Van Ness bus lines operate on Harrison Street between Fifth and 11th streets. Harrison has Class II bicycle lanes between 11th and 23rd streets, after which the street transitions into a Class III bicycle route.

- **Bryant Street** is a two to four-lane roadway that extends from The Embarcadero to Cesar Chavez Street. In addition, Bryant Street operates as a northbound one-way street between Second and 13th streets. The City classifies this roadway as a Secondary Transit street north of 11th Street (which transitions into a Primary Transit Important street until Third Street), a Major Arterial street between 11th and 13th streets, and a Local Street south of 13th Street. On-street parking is provided on both sides of the street. The 27 Bryant bus line operates on Bryant Street between Fifth and Cesar Chavez streets, while the 47 Van Ness bus line operates between 13th and Fourth streets.

- **10th Street** is a four-lane, one-way eastbound roadway that extends from Division Street to Market Street. The City classifies this roadway as a Major Arterial. On-street parking is provided on both sides of the street. San Mateo transit (SamTrans) operates on 10th Street between Mission and Division streets.

- **13th/Division Street** is a six-lane roadway that extends from Bryant Street to Mission Street underneath the US101 Central Freeway. The City classifies this roadway as a Major Arterial. On-street parking is provided on both sides of the street.

- **16th Street** is a four-lane roadway that extends from Third Street to Castro Street. The City classifies this roadway as a Primary Transit-Oriented street. On-street parking is provided on both sides of the street. The 22 Fillmore bus line operates on 16th Street between Kansas and Church streets, while the 33 Stanyan bus line operates between Potrero Avenue and Mission Street.

9.14.2.2 Intersection Operating Conditions

Intersection operating conditions at 15 intersections were evaluated during the weekday peak hours of the AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak periods. Intersections usually form the critical capacity constraints on roadways. Therefore, most transportation analyses examine intersection operations as a measure of overall roadway conditions.

The operating characteristics of intersections are evaluated using the concept of Level of Service ("LOS"). LOS is a qualitative description of driver comfort and convenience. Intersection levels of service range from LOS A, which indicates free flow or excellent vehicle flow conditions with short delays, to LOS F, which indicates congested or overloaded vehicle flow conditions with extremely long delays. In San Francisco, LOS A through D is considered acceptable, and LOS E and LOS F are considered unsatisfactory service levels. The intersections were evaluated using the 2000 Highway Capacity Manual (HCM) methodology. Tables summarizing the relationship between average delay per vehicle and LOS for signalized and unsignalized intersections according to the 2000 HCM method can be found in the appendices of the TIS for the UCSF Long Range Development Plan (Appendix G).

For signalized intersections, this methodology determines the capacity for each lane group approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average delay and LOS is presented for the intersection. For unsignalized intersections, operations are defined by the average control delay per vehicle (in seconds per vehicle) for each stop-controlled movement or movement that must yield the right-of-way, and the LOS is determined by the worst (highest average delay) approach. Generally, the delay ranges for each LOS are lower than for signalized intersections because drivers expect less delay at unsignalized intersections.

As shown in **Table 9.14-1**, 14 of the 15 study intersections operate at an acceptable level of service, which is LOS D or better during the AM peak hour, and all 15 operate at an acceptable LOS during the PM peak hour. The following intersection operates unacceptably during the AM peak hour:

- 13th Street and South Van Ness Avenue (#65) operates at LOS F during the AM peak hour due to the high volume of southbound traffic on South Van Ness Avenue.

9.14.2.3 Transit Network

The Mission Center campus site is well-served by public transit, both local and regional. Local service is provided by the Muni bus lines. Regional service is provided by BART, AC Transit, Golden Gate Transit, SamTrans, and Caltrain. UCSF supplements Muni transit service with its own shuttle system that provides direct connections to UCSF-operated facilities throughout San Francisco. In many cases, these shuttles provide a direct transit alternative between two campus sites that would otherwise require a transfer between two or more Muni routes. Based on the 2013 UCSF Transportation Commute Survey, approximately 25% of those traveling to and from the campus site use public transit, while another 13% rely on UCSF shuttles to get to and from the campus site.

Local Transit

San Francisco Muni. San Francisco Municipal Railway (Muni) provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car and electric streetcar lines. Muni operates ten bus lines in the vicinity of the Mission Center campus site (see TIS in Appendix G for details about these transit lines).

The Transit Effectiveness Project (TEP) serves as both a thorough review of and repositioning of San Francisco's public transit system, initiated by SFMTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. TEP recommendations include new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The TEP recommendations were unanimously endorsed by the SFMTA Board of Directors in October 2008, for environmental impact review. The initial TEP recommendations were revised based on public feedback on the draft TEP environmental impact report (TEP EIR). The TEP EIR was certified on March 27, 2014, and the SFMTA Board of Directors approved most of the

TABLE 9.14-1
EXISTING PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – MISSION CENTER

Intersection	Traffic Control[a]	Peak Hour	Delay (seconds)[b]	LOS[c]
61. 13th Street / South Van Ness Avenue	Signal	AM PM	**71** 30	**F** C
62. 13th Street / Folsom Street	Signal	AM PM	26 29	C C
63. 13th Street / Harrison Street	Signal	AM PM	16 19	B B
64. Tenth Street / Bryant Street	Signal	AM PM	14 16	B B
65. 14th Street / South Van Ness Avenue	Signal	AM PM	15 16	B B
66. 14th Street / Folsom Street	Signal	AM PM	16 15	B B
67. 14th Street / Harrison Street	AWS	AM PM	11 (12) 20 (24)	B (B) C (C)
68. 15th Street / South Van Ness Avenue	Signal	AM PM	15 18	B B
69. 15th Street / Folsom Street	Signal	AM PM	12 29	B C
70. 15th Street / Harrison Street	AWS	AM PM	10 (12) 14 (15)	B (B) B (C)
71. 16th Street / Mission Street	Signal	AM PM	26 16	C B
72. 16th Street / South Van Ness Avenue	Signal	AM PM	37 20	D B
73. 16th Street / Folsom Street	Signal	AM PM	38 28	D C
74. 16th Street / Harrison Street	Signal	AM PM	21 30	C C
75. 16th Street / Bryant Street	Signal	AM PM	20 35	C D

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

Service Improvements and portions of the Transit Travel Time Reduction Proposals on March 28, 2014.[5] The TEP project will be implemented based on funding and resource availability. The TEP Implementation Strategy anticipates that many of the improvements will be implemented sometime between Fiscal Year 2014 and Fiscal Year 2019, subject to funding sources and

[5] San Francisco Planning Department. 2014. TEP Final EIR, March 27, 2014, Available online at http://tepeir.sfplanning.org. Accessed April 3, 2014. Case No. 2011.0558E. The document and supporting information may also be viewed at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA in case file 2011.0558E.

resource availability.[6] The changes proposed by the TEP for routes near the Mission Center campus site are described in the TIS (Appendix G).

UCSF Shuttle System

UCSF Shuttles to and from the Mission Center campus site (Lime, Red, and Yellow) stop in the parking lot located adjacent to the Mission Center building on the corner of Harrison and 15th streets. A more-detailed description of the UCSF shuttle system serving the Mission Center campus site area is provided in Appendix G (TIS for the UCSF LRDP).

9.14.2.4 Pedestrian Circulation

Walking to and from the campus site is a relatively small travel mode for many UCSF Mission Center employees and students. Based on the 2013 UCSF Transportation Commute Survey, approximately 3% of those traveling to and from the campus site walk, although those using Muni or BART arrive to the campus site via foot as well. Approximately 50% of all trips made by UCSF Mission Center campus site employees and students to off-campus locations throughout the day are made by foot.

Pedestrian facilities include sidewalks, crosswalks, curb ramps, and pedestrian signals. Within the Mission Center area, sidewalks exist on both sides of the street in most locations, and are generally 11 to 15 feet wide. Standard crosswalks are provided at most intersections surrounding the campus site, however no crosswalks are striped across 14th Street at the t-intersection with Trainor Street, nor across Harrison Street at the t-intersection with Alameda Street. Curb ramps are generally provided at most intersections and pedestrian signals are present at signalized intersections in the campus site vicinity.

9.14.2.5 Bicycle Circulation

The topography at and around the Mission Center campus site is relatively flat, which facilitates easy bicycle travel. Based on the 2013 UCSF Transportation Commute Survey, approximately 6% of UCSF Mission Center employees and students bike to the campus site, which is approximately double the bicycling mode share throughout San Francisco. In addition, approximately 3% of trips made by UCSF Mission Center employees and students to off-site, non-UCSF locations throughout the day are made by bike. The following bicycle facilities are located near the Mission Center campus site:

- 11th Street is part of San Francisco Bike Routes 25 and 30, an east-west bike route that extends from Market Street to 13th Street with Class II bicycle lanes.

- 13th Street/Division is part of Bike Route 36, an east-west bike route that extends from Townsend Street to Bryant Street with Class II physically-separated bicycle lanes between Brannan and Townsend streets.

6 San Francisco Municipal Transportation Agency. 2014. TEP Implementation Workbook, March 5, 2014, Available online at: http://www.sfmta.com/sites/default/files/projects/TEP%20Implementation%20Plan%20-%20Section%201%20%282%29_1.pdf. Accessed June 27, 2014.

- 14th Street is part of Bike Routes 30 and 36, an east-west bike route that extends from Harrison Street to Market Street with a Class II bicycle lane and Class III sharrows.

- 17th Street is part of Bike Routes 25 and 40, an east-west bike route that extends from Kansas Street to Market Street with Class II bicycle lanes between Kansas and Church streets. Between Church and Market streets, 17th Street is designated as a Class III bicycle route, but does not have shared-lane markings.

- Harrison Street is part of Bike Routes 25, 33, and 36, a north-south bike route that extends from 11th Street to Cesar Chavez Street. From 11th Street to 23rd Street, the route has Class II bicycle lanes. South of 23rd Street to Cesar Chavez, the route is designated as a Class III bicycle facility with no shared-lane markings.

- Folsom Street is part of Bike Route 30, a north-south bike route that extends from 11th Street to 19th Street as a Class II route. However, only the segment of Folsom between 11th Street and 14th Street has a single, northbound bicycle lane.

The SF Bike Plan includes planned short-term improvements to Bicycle Route 25 on Howard Street and Route 40 on 17th Street. Improvements to Howard Street include bicycle lanes from Ninth Street to 11th Street. Improvements to 17th Street include bicycle lanes between Market Street and Corbett Avenue.

The streets surrounding the Mission Center campus site serve as popular bicycle routes, connecting the Mission neighborhood with Downtown San Francisco. Bicycle routes connecting to downtown such as Harrison, Folsom, and 14th streets all see over 200 bicyclists during the AM peak hours. These routes are slightly less traveled in the PM peak hour, but still generally exceed 50 to 100 bicyclists. Other popular streets for bicycling include Division Street and Sixteenth Street, which is not a signed bicycle route, but sees between 20 and 40 bicyclists during the AM and PM peak hours.

Bicycle racks are provided adjacent to the main entrance to the Mission Center Building. In an effort to increase bike parking and respond to feedback received from bicyclists, UCSF has recently redesigned and expanded the bike parking with new user-friendly racks.

9.14.2.6 Loading Conditions

The Mission Center campus site has both service vehicle and passenger loading. There is one off-street service vehicle loading facility serving the existing uses on the campus site. Marked zones for passenger and service vehicles are unavailable on adjacent streets, with most passenger loading occurring within the parking lot, adjacent to the existing building. The Mission Center campus site receives approximately 12 deliveries per day in the designated off-street loading area. Additional parcel deliveries are made at the front of the building on Folsom Street, sometimes blocking the bicycle lane. Existing vehicle loading areas are sufficient for existing demand.

9.14.2.7 Parking Conditions

On-Street Parking

The majority of the on-street parking spaces in the vicinity of the Mission Center campus site are generally unrestricted. On-street parking on South Van Ness Avenue is limited to a one-hour period between the hours of 8:00 AM and 6:00 PM.

Parking occupancies throughout the mid-morning (10:00 AM to 12:00 Noon) and midday (12:00 Noon to 2:00 PM), periods are very similar, at 95% (i.e., at their effective capacity); parking utilization in the evening (6:30 PM to 8:00 PM) period is about 80%. An occupancy above 90% typically represents that the facility has reached its effective capacity.

Off-Street Parking

The Mission Center campus site provides 224 marked parking spaces at an adjacent surface lot on the east side of the building. The vast majority of the spaces are reserved for UCSF permit-holders, with 17 spaces available for general paid parking.

Additional non-UCSF owned public parking is available at nearby facilities, including a surface lot at 3111 17th Street at the northwest corner of 17th and Folsom streets (220 spaces), a surface lot at 24 Florida Street near Treat Street (139 spaces), and a surface lot at 1550 Bryant Street near 15th Street (41 spaces).

Overall off-street parking occupancy is 86% during the mid-morning period and 87% during the midday period, while the overall occupancy in the evening is 38%. The overall peak parking occupancy at the UCSF surface parking lot is lower than at the other facilities. During mid-morning, the peak parking demand period, the parking lot at the Mission Center campus site operates at 86% of its capacity, while the other facilities have a combined utilization of 88%. An occupancy above 90% typically represents that the facility has reached its effective capacity.

9.14.3 Transportation and Traffic – Mission Center Campus Site Impacts and Mitigation Measures

9.14.3.1 Impact Methodology

Analysis Approach

The transportation analysis in this EIR considers operations-related issues related to vehicular traffic, transit facilities, pedestrians, bicyclists, and parking, as well as construction-related impacts, associated with the 2014 LRDP at the Mission Center campus site. To determine potential impacts on the transportation system, it was first necessary to establish the background transportation conditions for the horizon years. Future year background conditions for this project are based on the countywide travel demand model developed and maintained by the San Francisco County Transportation Authority (SFCTA).

Vehicle, pedestrian, bicycle, and transit travel demand associated with the 2014 LRDP was estimated based on factors developed from extensive surveys conducted at existing UCSF facilities over the past few years, and through the use of a four-step process: trip generation, mode split, trip distribution, and trip assignment. In the first step, the number of person trips generated by the 2014 LRDP was estimated on a daily, AM and PM peak hour basis. Next, the person trips were assigned to different modes of travel (automobile, public transit, UCSF shuttle, bicycles, etc.). Then, the geographic distribution of the trip origins and destinations was predicted, and finally, project trips for each mode were assigned to specific streets, UCSF shuttle routes and transit lines along the transportation network.

Travel Demand Estimates

The 2014 LRDP proposes various levels of growth at each campus site through the plan horizon year of 2035. Some known projects, such as Phase 2 of the Medical Center in Mission Bay, are currently projected to occur between 2035 and 2040, after the 2014 LRDP horizon year, but have been incorporated into the travel demand estimates presented in this document, As such, the transportation analysis represents a conservative approach as it includes development five years past the 2015 LRDP horizon, to the year 2040. Each campus site is expected to increase in population through the 2014 LRDP horizon year, with the highest growth expected at the Mission Bay site.

The Mission Center campus site is estimated to generate a total of approximately 1,064 new daily person trips by 2040. That number of trips reflects the total number of additional person trips that would be generated by the increased campus site population. As described in Sections 6.14 and 7.14, some trips generated by campus site activity are internal trips that occur within the campus site. However, given its relatively small size, and to provide a conservative estimate of travel demand, no internal person trips were assumed to occur within the Mission Center campus site.

"Mode choice" is the designation of trips to the various means that people use to travel, such as automobile, transit, walking, bicycling, taxi, or other mode of transportation. The determination of the mode of transportation used in trips to and from the Mission Center campus site would depend on many characteristics of the trip (e.g., the population group that is, faculty, staff, vendor, patient, visitor), the type of trip (work, visit), and the specific site. Travel mode split and average vehicle occupancy assumptions were based on information collected by UCSF and its consultants, with the estimates of the future modal share based on the current modal splits for each campus site by population type, which take into account the transit accessibility, UCSF shuttle service, parking availability, and TDM measures being provided at each campus site; this approach is consistent with the travel demand methodologies established by the SF Planning Department. The majority of Mission Center campus site trips arrive/depart the campus site by driving alone, followed by travel by public transit. The above-cited external daily person trips generated by the Mission Center campus site are expected to use the following travel modes:

490 Auto Drive Alone
10 Drop-Off/Taxi
49 Carpool/Vanpool
275 Public Transit

135 UCSF Shuttle
68 Bicycle/Motorcycle
37 Walk

The auto drive alone, drop-off/taxi, carpool/vanpool, and UCSF shuttle person trips would generate about 539 daily vehicle trips.[7]

Approximately 120 new vehicle trips would occur during the AM peak hour, and about 110 new vehicles would occur during the PM peak hour. There would be approximately 105 and 100 new transit riders in the AM and PM peak hour, respectively. A majority of transit users are expected to arrive/depart by SF Muni, BART, or the UCSF bus shuttle service.

The new trips associated with the Mission Center campus site were assigned to San Francisco and regional origins/destinations, including the four San Francisco Superdistricts (northeast, northwest, southeast, and southwest quadrants of the City), the East Bay, the North Bay, and the South Bay, as well as areas outside the Bay Area region. Information collected by UCSF as part of their ongoing surveys of employees, patients, visitors and residents were used in this analysis.

9.14.3.2 Construction Period Impacts

Impact TRAF-MC-1: Implementation of the 2014 LRDP on the Mission Center campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during construction activities. (Potentially Significant)

Impacts associated with demolition and construction activities that would occur as the 2014 LRDP is implemented are addressed in Chapter 5 (Impact TRAF-LRDP-1). That 2014 LRDP Plan-Level analysis determined that although construction activities would be temporary, construction impacts would be considered potentially significant given the magnitude of LRDP development over the course of many years and need for on-going coordination and monitoring. The potentially significant determination would apply to the LRDP elements of the Mission Center campus site. The implementation of LRDP **Mitigation Measure TRAF-LRDP-1: Construction Coordination and Monitoring Measures** would reduce construction-period impacts to less-than-significant levels.

Mitigation Measure: Implement **Mitigation Measure TRAF-LRDP-1**

Significance after Mitigation: Less than Significant

9.14.3.3 Operational Impacts

Impact TRAF-MC-2: Implementation of the 2014 LRDP on the Mission Center campus site would increase traffic at intersections on the adjacent roadway network. (Less than Significant)

[7] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

Table 9.14-2 presents a summary comparison of Existing and Existing plus Plan intersection LOS for the weekday AM and PM peak hours. In general, the addition of 2014 LRDP-generated traffic would result in small changes in the average delay per vehicle at the study intersections, and most study intersections would continue to operate at the same service levels as under Existing conditions. The great majority of the study intersections operate at acceptable levels of service (LOS D or better) under both AM and PM peak hour conditions under Existing conditions, and would continue to operate acceptably under Existing Plus 2014 LRDP conditions.

The following study intersection currently operates at an unacceptable LOS F, and would continue to operate at the same LOS under Existing Plus 2014 LRDP conditions:

61. 13th Street / South Van Ness Avenue (AM peak hour)

The 2014 LRDP would add 14 vehicle trips to the critical southbound through movement (LOS F) during at the 13th Street/South Van Ness Avenue (Intersection #61) signalized intersection, which represents a 1% increase from Existing conditions. That 1% increase would be less than the threshold of significance, and the 2014 LRDP's contribution (and impact) would be considered less-than-significant.

Mitigation: None required.

Impact TRAF-MC-3: Implementation of the 2014 LRDP on the Mission Center campus site would increase transit ridership demand. (Less than Significant)

As described in 9.14.3.1 above, approximately 105 and 100 new transit riders in the AM and PM peak hour, respectively. A majority of transit users are expected to arrive/depart by SF Muni, BART, or the UCSF bus shuttle service.

San Francisco Muni

Existing Muni transit stops are located within a half-mile of the campus site, and are accessible by walking. Major stop relocations adjacent to campus are not anticipated at this time. The TEP proposes to reduce headways for the 9L San Bruno Limited, 14/14L Mission Limited, and 22 Fillmore. In addition to increasing peak period headways, the 22 Fillmore will be rerouted to continue along 16th Street, connecting to Mission Bay. The 12 Folsom/Pacific will be discontinued, though a majority of the route will be served by rerouting the 27 Bryant and the new 11 Downtown Connector.

The estimated number of 2014 LRDP-generated Muni trips is a relatively small increase (about 1% to 3%) in ridership traveling to and from the Mission Center campus site, which

TABLE 9.14-2
EXISTING AND EXISTING PLUS 2014 LRDP
PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS) – MISSION CENTER

Intersection	Traffic Control[a]	Peak Hour	Existing		Existing plus 2014 LRDP	
			Delay (sec.)[b]	LOS[c]	Delay (sec.)[b]	LOS[c]
61. 13th Street / South Van Ness Avenue	Signal	AM PM	**71** 30	**F** C	**73** 31	**F** C
62. 13th Street / Folsom Street	Signal	AM PM	26 29	C C	26 29	C C
63. 13th Street / Harrison Street	Signal	AM PM	16 19	B B	17 19	B B
64. Tenth Street / Bryant Street	Signal	AM PM	14 16	B B	14 17	B B
65. 14th Street / South Van Ness Avenue	Signal	AM PM	15 16	B B	15 16	B B
66. 14th Street / Folsom Street	Signal	AM PM	16 15	B B	16 15	B B
67. 14th Street / Harrison Street	AWS	AM PM	11 (12) 20 (24)	B (B) C (C)	12 (12) 22 (25)	B (B) C (D)
68. 15th Street / South Van Ness Avenue	Signal	AM PM	15 18	B B	16 19	B B
69. 15th Street / Folsom Street	Signal	AM PM	12 29	B C	12 29	B C
70. 15th Street / Harrison Street	AWS	AM PM	10 (12) 14 (15)	B (B) B (C)	11 (13) 15 (16)	B (B) C (C)
71. 16th Street / Mission Street	Signal	AM PM	26 16	C B	28 16	C B
72. 16th Street / South Van Ness Avenue	Signal	AM PM	37 20	D B	39 20	D B
73. 16th Street / Folsom Street	Signal	AM PM	38 28	D C	40 29	D C
74. 16th Street / Harrison Street	Signal	AM PM	21 30	C C	21 37	C D
75. 16th Street / Bryant Street	Signal	AM PM	20 35	C D	20 35	C D

[a] AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
[b] Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
[c] For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
[d] **Bold** indicates unacceptable operations per UCSF LOS standards

SOURCE: Fehr & Peers, 2014.

would not require the expansion of transit service or facilities. Additionally, none of the specific proposals of the 2014 LRDP would reconfigure, or reduce access to, transit stops in a way that would degrade transit service to the campus site. Therefore, the 2014 LRDP's transit impact on Muni service would be considered less than significant.

Regional Transit

UCSF staff, patrons and students are anticipated to continue to use BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit for regional transit service through the 2014 LRDP horizon year. Regional service stations are likely to remain at existing locations, over a half-mile away,

and can be accessed by other transit modes such as SF Muni and the UCSF shuttle, and by walking in the case of the 16th Street BART. Fewer than 40 new regional transit trips are expected during each AM and PM peak hours, and that increase would not require the expansion of regional transit service or facilities. Therefore, the 2014 LRDP's transit impact on regional transit service would be considered less than significant.

UCSF Shuttle

Current UCSF shuttle service operations would continue to serve the Mission Center campus site under the 2014 LRDP, with the shuttle stop and loading area shifted to 15th Street, just east of the vehicle access point. The proposed shuttle loading areas should accommodate two shuttles loading at one time. The new shuttle stop would displace three on-street spaces with parking meters. The LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as LRDP projects are constructed and occupied at the campus site.

An approximately 60% increase in UCSF Shuttle ridership during both peak hours is anticipated through the 2014 LRDP horizon year, and that increase would not require the expansion of UCSF shuttle service or facilities. Therefore, the 2014 LRDP's transit impact on UCSF Shuttle service would be considered less than significant.

Mitigation: None required.

Impact TRAF-MC-4: Implementation of the 2014 LRDP on the Mission Center campus site would not cause a substantial conflict with pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The 2014 LRDP does not propose changes to pedestrian amenities or introduce new conflicts to the pedestrian network surrounding the Mission Center campus site. Overall, the 2014 LRDP would not change pedestrian accessibility to the Mission Center campus site and on the campus site frontage.

The 2014 LRDP would add approximately 100 and 90 pedestrian trips (mostly transit-access trips) to the surrounding streets during the AM and PM peak hours, respectively. Pedestrian trips would primarily use 15th Street to access the surrounding street grid network and connect to residential and commercial neighborhoods in Mission and SoMa. The 2014 LRDP-generated transit trips will begin as pedestrian trips traveling along 15th, 16th, Folsom, and Harrison streets to the nearest BART Station at 16th and Mission streets, and Muni bus routes on Mission Street, Folsom Street, 16th Street, or 11th Street.

The 2014 LRDP proposes to relocate the current UCSF shuttle stop from the parking lot to the north side of 15th Street midblock. This relocated shuttle stop, and the UCSF shuttle riders, would not hinder pedestrian mobility on 15th Street because the 15-foot-wide sidewalks would handle the expected pedestrian traffic. Existing pedestrian facilities surrounding the Mission Center campus site adequately accommodate existing pedestrian volumes and overcrowding is not expected to occur due to the 2014 LRDP.

The immediate area surrounding the Mission Center campus site includes robust pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops, and that would accommodate the new pedestrian trips generated by the 2014 LRDP. The 2014 LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the 2014 LRDP's impact to pedestrian circulation and facilities at the Mission Center campus site would be less than significant.

Mitigation: None required.

Impact TRAF-MC-5: Implementation of the 2014 LRDP on the Mission Center campus site would not would not cause a substantial conflict with bicycle facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

The area around the Mission Center campus site has a number of streets with bicycle lanes, and streets designated as bicycle routes, including Folsom Street, Harrison Street, 17th Street, 14th Street, and 11th Street. The Mission Center campus site is within convenient bicycling distance of residential and commercial areas in surrounding neighborhoods. The 2014 LRDP does not propose changes to the bicycle circulation network surrounding the Mission Center campus site. The SF Bike Plan includes planned short-term improvements to add bicycle lanes from Ninth Street to 11th Street for Bicycle Route 25 on Howard Street.

Parcel delivery vehicles occasionally block the bicycle lane on Folsom Street in front of the Mission Center campus site due to the lack of a curbside loading zone. Folsom Street is a popular bicycle route to Downtown San Francisco, and bicyclists currently must pass the loading vehicles in the vehicle travel lane. While this is not considered a significant impact, an Improvement Measure to add a curbside loading zone on Folsom Street has been identified. UCSF would work with the SFMTA to add a 50-foot-long loading zone adjacent to the existing Mission Center building. Such a loading zone would require removing of two parking spaces on Folsom Street, but would improve conditions for bicyclists who currently have their travel path blocked by vehicles loading in the bicycle lane.

The 2014 LRDP is expected to increase bicycle demand in the area by approximately 15 new trips during both the AM and PM peak hours. These trips would primarily occur on designated bicycle facilities, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated at the campus site through additional bicycle parking provided as a part of UCSF's TDM program. In the near-term, UCSF plans to add four new bicycle racks at the Mission Center Campus Site, which would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The expected increase in bicycle traffic would not represent a level that would adversely affect bicycle facilities on the campus site, nor would the 2014 LRDP create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Therefore, the 2014 LRDP's impact to bicycle circulation and facilities at the Mission Center campus site would be less than significant.

Mitigation: None required.

Impact TRAF-MC-6: Implementation of the 2014 LRDP on the Mission Center campus site would increase loading demand. (Less than Significant)

The San Francisco Planning Code requires that land uses, such as medical offices and hospitals, provide off-street loading spaces according to a prescribed schedule. The required loading supply was estimated based on that Code schedule, and the existing and proposed loading supply exceeds the Code requirement at the Mission Center campus site.

The demand for loading spaces through the 2014 LRDP horizon year was calculated based on surveys from the Parnassus Heights campus site and methods described in the City's *Transportation Impact Analysis Guidelines for Environmental Review*. The existing peak hourly demand is estimated to be about 4 spaces on the Mission Center campus site, and the 2014 LRDP horizon year peak hourly demand is estimated to be about 6 spaces.

It is expected that the estimated 2014 LRDP loading supply should be adequate for the estimated demand, but as mentioned above, the campus sites are unique and should be monitored over time. This is considered a less-than-significant impact if UCSF continues to monitor loading operations and provide appropriate supply with guidance from the SF Planning Code and existing operations.

In addition to freight loading, there is a demand for passenger loading spaces, and in order to estimate passenger loading demand, the drop-off/taxi service mode split and a portion of the carpool mode split percentages presented in 9.14.3.1 above was applied to the peak AM and PM peak-hour person trips. The peak-hour passenger loading demand is estimated to increase by three or four spaces at the Mission Center campus site.

The existing passenger loading supply is sufficient for the estimated 2014 LRDP loading needs during both the AM and PM peak hour. Therefore, the 2014 LRDP's impact to passenger loading is considered less than significant.

Mitigation: None required.

Impact TRAF-MC-7: Implementation of the 2014 LRDP on the Mission Center campus site would increase parking demand. (Less than Significant)

Under the 2014 LRDP, additional parking would be provided on the Mission Center campus site, as warranted by the proposed development (i.e., the number of any new parking spaces would be determined as projects are proposed). It is estimated that the number of parking spaces owned by UCSF at the Mission Center campus site would increase by approximately 70 spaces by year 2040. The following list describes the currently proposed changes in parking supply:

- A new UCSF building would be constructed at the existing surface parking lot to the east of the existing Mission Center building, with approximately 294 parking spaces.

As described previously, the available on-street parking is well-occupied at the Mission Center campus site, and has therefore not been considered as a resource for the future parking utilization analysis, which has focused instead on the availability of off-street parking. Assessment of the

growth of peak parking demand under the 2014 LRDP shows that the future parking utilization at the Mission Center campus site would be approximately 100 spaces above the future planned supply. However, as part of the implementation of the 2014 LRDP, UCSF would monitor parking demand at each phase of development and adjust parking supply as demand warrants. Should the demand for parking exceed on-site supply, priority for on-site parking would be given to patients and visitors, and if necessary, UCSF would look to secure off-site parking to satisfy staff demand. That additional parking supply could be on the site, if available, or elsewhere in the vicinity. As the sites develop, UCSF (through its Campus Transportation Services Offices) will make efforts to educate faculty, staff and students about transit options in order to reduce auto usage and parking demand. Thus, the parking impacts under the 2014 LRDP would be less than significant.

Mitigation: None required.

9.15 Utilities and Service Systems

The Regional Setting, Regulatory Considerations, Significance Standards and Analysis Methodology for analysis of potential effects of Utilities and Service Systems are contained in Section 4.15 of this EIR. The CEQA Significance Standards presented in Section 4.15.3 are used to evaluate the potential utilities and service systems impacts of all proposed 2014 LRDP activities.

The overall effects on water supply, wastewater treatment, storm drainage facilities, solid waste disposal and energy demand resulting from implementation of the 2014 LRDP were evaluated in Chapter 5, *2014 LRDP – Impacts and Mitigation Measures*. No expansion of water, wastewater or storm drainage facilities beyond the standard service connections of future buildings to the City's existing infrastructure is anticipated at the Mission Center campus site.

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CHAPTER 10
CEQA Statutory Sections

This chapter summarizes the following categories of impacts resulting from implementation of the 2014 LRDP; significant and unavoidable environmental impacts; cumulative impacts; growth-inducing impacts; and significant irreversible environmental effects.

10.1 Significant and Unavoidable Impacts

Section 15126.2(b) of the CEQA Guidelines requires an EIR to identify significant environmental effects that cannot be avoided if the project is implemented, including those that can be mitigated, but not to a less-than-significant level. This section identifies significant impacts that could not be eliminated or reduced to a less-than-significant level by mitigation measures imposed by UCSF. The final determination of significance of impacts and of the feasibility of mitigation measures will be made by the Regents as part of their certification action for the EIR. The following significant and unavoidable impacts would result from implementation of the 2014 LRDP:

2014 LRDP

- **Impact AIR-LRDP-4:** Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during demolition and construction activities.

- **Impact AIR-LRDP-5:** Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during operation.

- **Impact CUL-LRDP-2:** Implementation of the 2014 LRDP could result in demolition of historical resources as defined in CEQA Guidelines Section 15064.5.

- **Impact NOI-LRDP-2:** Implementation of the 2014 LRDP would result in increased ambient noise levels during pile-driving activities.

2014 LRDP Proposals at the Parnassus Heights Campus Site

- **Impact CUL-PH-2:** Demolition of the Surge building at the Parnassus Heights campus site would result in a substantial adverse change in the significance of an historical resource.

- **Impact NOI-PH-1:** Demolition activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in a temporary increase in ambient noise levels.

- **Impact NOI-PH-2:** Construction activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in increases in ambient noise levels over the term of the exterior construction activities.

2014 LRDP Proposals at the Mission Bay Campus Site

- **Impact AIR-MB-3:** Operations at the Mission Bay campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants.

- **Impact NOI-MB-2:** Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels during pile-driving activities.

- **Impact UTIL-MB-2:** There may be impacts related to wastewater infrastructure as a result of 2014 LRDP development at the Mission Bay campus site.

2014 LRDP Proposals at the Mount Zion Campus Site

- **Impact CUL-MZ-1:** Demolition of the Hellman building at the Mount Zion campus site would result in a substantial adverse change in the significance of an historical resource.

- **Impact NOI-MZ-1:** Demolition activities proposed under the 2014 LRDP at the Mount Zion campus site would result in a temporary increase in ambient noise levels.

- **Impact NOI-MZ-2:** Construction activities proposed under the 2014 LRDP at the Mount Zion campus site would result in increases in ambient noise levels over the term of the exterior construction activities.

2014 LRDP Proposals at the Mount Zion Campus Site

- **Impact NOI-MC-2:** Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels during pile-driving activities.

10.2 Cumulative Impacts

10.2.1 Introduction

The CEQA Guidelines define cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The Cumulative impact analysis required under CEQA is intended to describe the "incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects" which can result from "individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355).

Cumulative impacts must be discussed when they could be significant, but the discussion may be more general than that for individual project impacts. The discussion should also reflect the potential extent, severity, and probability of the impact. The cumulative impact analysis must be based on either a list of reasonably foreseeable projects, or projections from a General Plan or a contribution to significant cumulative impacts must also be proposed.

This chapter contains the cumulative impact analysis for the environmental topics addressed in Sections 5.1 through 5.15 of this EIR. The cumulative impact analyses consider the impacts from implementation of the 2014 LRDP (either significant or less than significant), plus:

- Impacts from other projects similar to the project, including those from other on-going UCSF projects or activities;
- Impacts such as traffic generation or demand for public services, that are similar to project impacts, but which result from other projects independent of the proposed project;
- The interaction of these impacts to create a cumulative impact affecting the same geographic area as the impact of the proposed project; and
- Whether the project's contribution to a significant cumulative impact is cumulatively considerable.

10.2.2 General and Regional Plans Considered in the Cumulative Analysis

Consistent with CEQA Guidelines Section 1530(b)(1)(B), the cumulative impact analysis in this EIR considers the 2014 LRDP's effects in combination with the projections contained within previously approved local and regional planning documents and forecasting models, including, but not limited to the *San Francisco General Plan*, the *Mission Bay Redevelopment Plan*, the San Francisco County Transportation Authority (SFCTA) Forecast Model, Port of San Francisco plans and regional planning documents from the Association of Bay Area Governments (ABAG), Bay Area Air Quality Management District (BAAQMD) and California Department of Transportation (Caltrans), as well as all associated environmental review documents.

10.2.3 Specific Projects Considered in the Cumulative Analysis

Consistent with CEQA Guidelines Section 15130(b)(1)(A), this cumulative impact analysis also considers other known or reasonably foreseeable projects that could combine with potential impacts from implementation of the 2014 LRDP within the same geographic area. These include the following:

- UCSF projects underway at the Parnassus Heights and Mission Bay campus sites
- *Mission Bay Redevelopment Plan* (North and South) projects
- Proposed Golden State Warriors Event Center Project – an arena and other development on a 12-acre site bounded by Third, 16th and South streets and Terry Francois Boulevard. Blocks 29-32 in the Mission Bay South Redevelopment Area. The Warriors project, now in environmental review by the City, proposes to construct an arena and other development on its site, rather than the general office / research and development uses in the *Mission Bay Redevelopment Plan.*

10.2.4 Areas of Potential Cumulative Impacts

10.2.4.1 Aesthetics

The Parnassus Heights, Mount Zion and Mission Center campus sites are located in urban settings surrounded by a mix of institutional, residential, neighborhood commercial and open space uses. These areas are built-out and opportunity for new development is limited, requiring reuse or redevelopment of existing buildings rather than new construction on undeveloped tracts of adjacent land. As such, potential growth in the vicinity of the these three campus site would be limited to the intensification or rebuilding of existing uses, which could result in changes in the size or architectural character of several individual buildings. However, development proposed under the 2014 LRDP at the Parnassus Heights, Mount Zion or Mission Center campus sites would not be visually incompatible or result in adverse effects to the future aesthetic character of these neighborhoods, thus the 2014 LRDP does not contribute to cumulative aesthetic impacts at these campus sites.

The *Mission Bay South Redevelopment Plan* and the Port of San Francisco's *Waterfront Land Use Plan* call for a future mix of land uses and increased density in the Mission Bay area. Development proposed under the 2014 LRDP at the Mission Bay campus site would be designed in accordance with UCSF's design guidelines to generally be visually consistent with the development patterns and urban environment planned for in the *Mission Bay South Redevelopment Plan*. The 2014 LRDP would generally be consistent with the *Mission Bay South Redevelopment Plan* in terms of scale and architectural design, so implementation of the 2014 LRDP would not substantially degrade the existing visual character of the surrounding area, and the visual effects would not be cumulatively considerable.

10.2.4.2 Air Quality

As detailed in Section 5.2 and Sections 7.2 and 8.2, site-specific construction and demolition activities at the Mission Bay and Mount Zion campus sites would have local, significant cumulative impact on air quality. Project construction would be a temporary significant impact at these sites, but could be mitigated through identified measures, including avoiding overlapping construction schedules at the Mission Bay campus site. The impacts would be cumulatively considerable when considered in combination with other construction proposed in the immediate area of each campus site.

Operations under the 2014 LRDP would increase emissions within the San Francisco Bay Area Air Basin which is designated as a non-attainment region for state and federal ozone and particulate matter standards. As stated in Impact AIR-LRDP-5, the increase in non-attainment criteria air pollutant and precursor emissions resulting from operations under the 2014 LRDP would be considered a significant and unavoidable impact because emissions would exceed BAAQMD's proposed thresholds of significance. In developing its proposed thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant

adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary (BAAQMD, 2011) and implementation of the 2014 LRDP would be considered to have a significant and unavoidable cumulative impact with respect to air quality.

Proposed Golden State Warriors Event Center on Blocks 29-32 at Mission Bay. Given the proximity of the Warriors project site to the UCSF Mission Bay campus site, if construction of large elements of both projects were to occur during the same time frames, the construction emissions of the two projects could have local, significant cumulative impact on air quality. Further, the operations emissions of that Warriors Event Center project would add to the already cumulatively considerable operations emissions from the 2014 LRDP. Because the Warriors EIR analysis has yet to be done, the magnitude of this potential impact is not yet known. Therefore, it is conservatively assumed that this impact may be significant and unavoidable.

10.2.4.3 Biological Resources

Implementation of 2014 LRDP proposals would occur at already developed campus sites within an urban setting. Small areas of special or sensitive habitat are present within the City, but not at or in the vicinity of the campus sites for which proposals are included under the 2014 LRDP.

For the most part, the LRDP proposals at the Parnassus Heights campus site are the only ones with potential to adversely affect biological resources. Construction and demolition proposals, as well as open space and utilities activities within and near the Reserve at the Parnassus Heights campus site, could have potentially adverse impacts on special-status wildlife and plant species in the Reserve. However, these impacts are limited to small portions of the campus site, and would be considered less than significant with mitigation.

2014 LRDP proposals at the Mission Bay, Mount Zion or Mission Center campus sites would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Given that all 2014 LRDP actions would take place within the developed urban area of San Francisco, cumulative biological impacts within the City would be less than significant and the contribution from implementation of 2014 LRDP proposals would not result in a significant cumulative impact.

10.2.4.4 Cultural Resources

Implementation of the 2014 LRDP could result in the demolition or substantial alteration of historic resources at the Parnassus Height and Mount Zion campus sites. There are no known or reasonably foreseeable projects in the Parnassus Heights or Mount Zion areas that could combine with the loss of the potentially historically significant structures (Surge on the Parnassus Heights campus site and the Hellman building on the Mount Zion campus site) to result in cumulatively significant impacts. The areas surrounding the Mission Bay campus site do not contain significant

cultural resources. Proposed development on the Mission Center campus site is not proximate to the primary grouping of contributors to the potential Showplace Square Heavy Timber and Steel-frame Brick Warehouse and Factory District. Therefore, cumulative impacts to cultural resources are considered less than significant.

10.2.4.5 Geology, Soils and Seismicity

Development under the 2014 LRDP, when combined with other foreseeable development in the vicinity of UCSF campus sites, could result in cumulative impacts with respect to exposure of more people to geologic and seismic hazards. As development projects under the 2014 LRDP are constructed throughout the LRDP horizon, additional people will come onto the campus sites and will be subjected to seismic risks and hazards. While the number of people visiting, living and working on UCSF campus sites will increase, incrementally exposing additional people to seismic and geological hazards over a short term, the construction of new facilities will substantially decrease the individual risks to people and property by upgrading or demolishing older buildings which are seismically unsafe. Older buildings will be seismically retrofitted and newer buildings will be constructed to stricter building codes. Therefore, the 2014 LRDP would not result in significant cumulative impacts on geology, soils and seismicity.

10.2.4.6 Greenhouse Gas Emissions

UCSF has developed a Climate Action Plan, a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the *California Global Warming Solutions Act of 2006* (AB 32). In addition, as part of the 2014 LRDP, UCSF proposes a GHG Reduction Strategy (GHGRS) to provide streamlined analysis under CEQA for future development projects.

Consistent with Appendix G of the CEQA Guidelines, construction and operational GHG emissions related to development at the four affected campus sites under the 2014 LRDP were quantified and assessed relative to thresholds considered by the BAAQMD for impact assessment. Also, the consistency of the 2014 LRDP was qualitatively assessed with respect to applicable state and local plans, policies and regulations adopted for the purpose of reducing GHG emissions. The assessment of potential GHG impact acknowledges the existing CAP and proposed GHGRS as well as the policies and plans of the UC Regents and University of California Office of the President.

BAAQMD considers GHG impacts to be exclusively cumulative impacts; as such, assessment of significance is based on a determination of whether GHG emissions represent a cumulatively considerable contribution to the global atmosphere. The specific impacts found with respect to construction-related greenhouse gas emissions were less than significant with mitigation, while operational emissions were less than significant. Further, implementation of the 2014 LRDP would not conflict with the AB32 Scoping Plan, the UCSF Climate Action Plan, or the UCSF GHGRS, and would therefore be less than significant. Therefore, cumulative impacts of the 2014 LRDP on global climate change and GHG emissions would be less than significant.

10.2.4.7 Hazards and Hazardous Materials

The cumulative hazards and hazardous materials impacts from implementation of the 2014 LRDP, when combined with other foreseeable development in the vicinity of the campus sites would not be cumulatively considerable. Development under the 2014 LRDP would continue the handling, storage, use and transport of hazardous materials and hazardous waste as part of normal operations, which may expand with proposed growth. Hazardous substances would continue to be subject to oversight and regulation by federal, state, and local rules, regulations, and policies. Cumulative development could generate similar types of impacts from the use, storage, transport, and disposal of hazardous materials, as well as construction-related hazardous material impacts, all of which would be highly regulated by federal, state, and local laws. Compliance with all applicable federal, state, and local laws that regulate, control, or respond to hazardous waste, transport, disposal or cleanup would ensure that cumulative impacts from implementation of the 2014 LRDP would be less than significant. On the Mission Bay campus site, continued implementation of the *Risk Management Plan* would result in additional excavation and disposal of contaminated soil and groundwater in accordance with mitigation measures identified in the *Mission Bay Subsequent EIR*, but these impacts would be site-specific and therefore would not result in a significant cumulative impact.

10.2.4.8 Hydrology and Water Quality

Implementation of the 2014 LRDP, when combined with other foreseeable development in the vicinity of the campus sites, would not result in cumulatively considerable impacts on water quality or hydrologic resources.

The Parnassus Heights, Mount Zion and Mission Center campus sites are located in a highly urbanized environment that is almost entirely covered with impervious surfaces. Construction activities occurring under the 2014 LRDP coupled with other reasonably foreseeable projects in neighborhoods surrounding these campus sites would therefore not cumulatively increase impervious surface area or increase non-point source urban pollutants resulting in adverse water quality impacts

Development activities are on-going in Mission Bay and would continue to intensify gradually until buildout is complete in the Mission Bay Redevelopment Area, which surrounds the Mission Bay campus site. Compliance with regulatory requirements and applicable water quality laws, e.g., National Pollution Discharge Elimination System and the City's Wastewater Master Plan, would ensure that potential cumulative impacts to water quality and hydrology would be less than significant.

10.2.4.9 Land Use and Planning

The Parnassus Heights, Mount Zion and Mission Center campus sites are situated in built-out urban areas surrounded by a mix of land uses. Generally, opportunities for new development are limited, and would require building replacement rather than new construction on undeveloped tracts of land. Potential growth in the vicinity of these three campus site would be limited to the intensification of existing uses rather than a substantial change from established land uses. The

San Francisco General Plan does not propose land use changes that would affect the neighborhoods adjacent to these areas. Existing uses can therefore be assumed during the LRDP horizon. Therefore, the implementation of the 2014 LRDP combined with cumulative growth would not physically divide an established community. No cumulative land use impact is anticipated.

The Mission Bay campus site is surrounded by the Mission Bay Redevelopment South project area, which guides redevelopment of the former industrial area as a mixed-use neighborhood including research and development, biomedical, academic, commercial industrial, office, residential and open space uses. Development under the 2014 LRDP would intensify institutional uses and would also expand residential and open space areas. These uses would be compatible with existing adjacent land uses and with the redevelopment plans for the Mission Bay area; therefore, the cumulative impact would be less than significant.

10.2.4.10 Noise

As detailed in Section 5.10, site-specific construction and demolition activities at each campus site would have a local, significant impact on the noise environment. Project construction would be a temporary significant impact at all proposed project sites. The impacts would be cumulatively considerable in combining with other construction proposed in the immediate area of each proposed demolition or construction proposal.

At the Parnassus Heights campus site, planned activities include the potential simultaneous demolition of the Radiobiology Laboratory, Medical Research 4 building, Surge, and Woods buildings, as well as the construction of new housing at Fifth and Parnassus Avenues. These construction and demolition projects, which could occur concurrently, would lead to a significant cumulative impact on the noise environment in the site vicinity.

At the Mission Bay campus site, proposed construction activities between 2015 and 2019 include new construction at Block 15 housing, Block 33 research building, Block 33/34 parking garage, and the cancer outpatient building. These construction projects, which could occur concurrently, would lead to a significant cumulative impact on the noise environment in the site vicinity.

Project operations would increase noise levels in the area of each campus site. Based on the low levels of noise increases seen in Tables 6.10-5, 7.10-5, 8.10-3, and 9.10-3 for the cumulative traffic plus the project surface traffic, the operations at all four main campus sites would not be cumulatively considerable.

Proposed Golden State Warriors Event Center on Blocks 29-32 at Mission Bay. Given the proximity of the Warriors project site to the Mission Bay campus site, if construction of the Warriors project occurred concurrent with construction of buildings at the campus site, the construction of the Warriors project could add to the potential cumulatively considerable construction noise impact of the 2014 LRDP. Because the Warriors EIR analysis has yet to be done, the magnitude of this potential impact is not yet known. Therefore, it is conservatively assumed that this impact may be significant and unavoidable. Noise from operation of the Golden

State Warriors project would come from building operations and daily activities, as well as daytime and nighttime noise associated with identifiable events. Event noise would include noise from people, the traffic supplying the facility, and traffic carrying people to and from events. Event noise likely could be identifiable even amidst other normal operational noise under the 2014 LRDP. Although noise from specific events may be identifiable as being caused by the event, the associated long-term noise levels may not differ from to noise levels anticipated with office/R&D development under the *Mission Bay South Redevelopment Plan*, but Warriors project operational noise would increase the cumulative noise levels in the UCSF Mission Bay campus site vicinity. Because the Warriors EIR analysis has yet to be done, the magnitude of this potential impact is not yet known. Therefore, it is conservatively assumed that this impact may be significant and unavoidable.

10.2.4.11 Population and Housing

As discussed in Section 5.11, the 2014 LRDP would accommodate an increase in employment and students at all campus sites from the current approximately 30,840 to approximately 42,270 by 2035, or an increase of about 11,430. Population and housing volumes identified in Section 5.11 were based on *Plan Bay Area* forecasts through the year 2040, which includes all planned and approved cumulative development and associated population and housing information. The UCSF share of employment growth in San Francisco at the 2014 LRDP horizon in 2035 is approximately 7%; the share of total population associated with UCSF growth under the 2014 LRDP would be less than 2%. Some of the additional population associated with the LRDP would be housed in the approximately 852 new units proposed by UCSF on the Parnassus Heights and Mission Bay campus sites, thereby reducing demand for off-campus housing in San Francisco and the Bay Area. Although implementation of the 2014 LRDP would induce population growth in the Bay Area, the cumulative contribution of UCSF would not be considerable and the impact would be less than significant.

10.2.4.12 Public Services

Development under the 2014 LRDP, when combined with foreseeable growth in the vicinity of the campus sites, could increase the demand for public services. However, this increased demand would not result in the need for new or physically altered facilities, the construction of which could cause significant environmental impacts. The Parnassus Heights, Mount Zion and Mission Center campus sites are located within built-out urban areas. Land use intensification in the vicinity of these campus sites would result in incremental changes to population and the associated demand for public services. As discussed further in Section 5.12, implementation of the 2014 LRDP would result in increased population on UCSF campus sites that could result in corresponding increases in the need for police and fire protection services, as well as public schools. Regarding the Mission Bay campus site, the City is currently constructing a new Public Safety Building at Third Street and Mission Rock Street that will house a new fire station and become the new San Francisco Police Department headquarters, as well as the new Southern District Station. The new station will serve all new development in the Mission Bay area, including the Mission Bay campus site, and is planned to be operational in fall 2014. The 2014 LRDP would not result in demand for public services that would result in the construction of new

or physically altered facilities. Although implementation of the 2014 LRDP would result in increased demand for public services, the cumulative contribution of UCSF would not be considerable and the impact would be less than significant.

10.2.4.13 Recreation

Development under the 2014 LRDP, when combined with cumulative growth in the vicinity of the campus sites, could increase the demand for recreation facilities. However, this increased demand would not cumulatively result in the substantial physical deterioration of such facilities. Population growth at the Parnassus Heights, Mount Zion, and Mission Center campus sites would not be substantial; therefore, demand on existing recreation facilities in combination with cumulative growth in the vicinity of these campus sites would not be significant. Residential growth at the Mission Bay campus site would be served primarily by existing facilities on the campus site in addition to new facilities proposed under the 2014 LRDP, such as the proposed sports field on Block 18C. Therefore, development under the 2014 LRDP, when combined with cumulative growth in the vicinities of the main campus sites, would not result in a significant cumulative impact to recreation.

10.2.4.14 Transportation and Traffic

In addition to foreseeable increases in traffic volumes and transit ridership by 2040 (estimated based on cumulative development and growth identified by the SFCTA SF-CHAMP travel demand model), there are foreseeable changes to the transportation network (roads, intersections, transit service, and bicycle facilities) that will affect potential cumulative impacts. Regarding changes to the transportation network, of note is the transit enhancement treatment visions for Sixteenth Street (two alternatives) under study by the SFMTA, one of which will be selected by the SFMTA Board prior to implementation. The treatments are referred to as the Moderate and Expanded Alternatives in the TEP EIR. The Mission Bay Year 2040 traffic analysis includes both alternatives, referred to (in the TEP EIR) as the Moderate Alternative and Expanded Alternative.

Traffic Conditions

Impact TRAF-MB-C-1: Implementation of the 2014 LRDP on the Mission Bay campus site in combination with foreseeable 2040 traffic volumes would increase traffic at intersections on the adjacent roadway network. (Potentially Significant)

The 2014 LRDP's contributions to the 2040 traffic conditions would be less than significant for the Parnassus Heights, Mount Zion, and Mission Center campus sites. The 2014 LRDP's cumulative contributions to the 2040 traffic conditions for the Mission Bay campus site would be potentially significant at the following five intersections (numbered to match intersection numbers in Table 7.14-2):

26. Brannan Street / Seventh Street (PM peak hour)
35. 16th Street / Fourth Street (AM peak hour)
36. 16th Street / Owens Street (AM and PM peak hours)
37. 16th Street / Seventh Street (AM and PM peak hours)

40. 16th Street / Potrero Avenue (AM and PM peak hours)

The 2014 LRDP's potentially-significant cumulative impacts at the above-cited intersections would be mitigated by the following mitigation measure:

Mitigation Measure TRAF-MB-C-1: Implement the Moderate Alternative of the TEP Sixteenth Street Proposal.

The City of San Francisco would implement the TEP Moderate Alternative, which would provide two mixed-flow travel lanes in each direction on Sixteenth Street, thereby maintaining the requisite traffic carrying capacity (and acceptable traffic level of service) on Sixteenth Street for the forecasted traffic demand with the 2014 LRDP in place.

However, implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Therefore, the impacts are considered significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable

The following mitigation measures, implemented by UCSF, would lessen the significant and unavoidable impacts, but would not mitigate the impacts to less-than-significant levels:

Mitigation Measure TRAF-MB-C-2: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips.

UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20-year horizon of the LRDP.

Mitigation Measure TRAF-MB-C-3: Manage Parking Supply.

UCSF shall continue to monitor the parking supply at the Mission Bay campus site so as not to oversupply parking at this campus site. Currently there is a downward trend in parking supply at the Mission Bay campus site, as it is expected to grow at a lower rate than total population. Monitoring and reducing the future parking supply per person at the Mission Bay campus site would improve traffic operations along Sixteenth Street by reducing SOV trips to and from the Mission Bay campus site.

However, implementation of these mitigation measures would not be reasonably expected to achieve the required reduction in vehicle trips on Sixteenth Street to lessen the impact to less-than-significant levels. Therefore, the potential impacts are considered significant and unavoidable.

LRDP Variant. Traffic conditions associated with the LRDP Variant would be similar to those described for the 2014 LRDP. The LRDP Variant's contributions to volumes at the critical intersection movements operating poorly (i.e., at LOS E or LOS F) for the intersections operating at LOS E or LOS F under Year 2040 conditions would be approximately 2% higher than those calculated for the 2014 LRDP. All but two of the Mission Bay campus site study intersections would continue to operate at the same levels of service, and have the same impacts (significant or

not) as under 2040 Plus 2014 LRDP conditions. The exceptions (Sixteenth Street / Seventh Street and Mariposa Street / Third Street) are discussed here.

Impact TRAF-MB-C-2: Implementation of the 2014 LRDP with the LRDP Variant on the Mission Bay campus site in combination with foreseeable 2040 traffic volumes would increase traffic at the Sixteenth Street / Seventh Street and the Mariposa Street / Third Street intersections on the adjacent roadway network. (Potentially Significant)

Sixteenth Street / Seventh Street. The LRDP Variant would contribute considerably to the AM peak-hour operations at this intersection under the TEP Moderate Alternative, a significant impact. By comparison, the 2014 LRDP impact would be less than significant under the TEP Moderate Alternative, but significant under the TEP Expanded Alternative.

Capacity-enhancing measures were investigated, but were found to be infeasible because of physical constraints (I-280 freeway support structures) that prohibit further widening of the Sixteenth Street right-of-way, and policy constraints (the City's Transit First Policy regarding transit and pedestrian environments) that would prohibit the narrowing of sidewalks and/or removal of the Class II bicycle lanes on Sixteenth Street.

Mariposa Street / Third Street. The LRDP Variant would contribute considerably to the AM peak-hour operations at this intersection under both the TEP Moderate and Expanded Alternatives, a significant impact. By comparison, the 2014 LRDP impact would be less than significant at this intersection under both the TEP Moderate and Expanded Alternatives.

Capacity-enhancing measures were investigated, but were found to be infeasible because of policy constraints (the City's Transit First Policy) that would prohibit the narrowing of sidewalks on Mariposa Street. The following mitigation measure, unique to the LRDP Variant, would be implemented by UCSF:

Mitigation Measure TRAF-MB-C-4: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips (LRDP Variant)

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20-year horizon of the LRDP.

- UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay campus site. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program and beyond those proposed in the 2014 LRDP, as described in Section 5.14) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

Significance after Mitigation: Less than Significant at Sixteenth Street / Seventh Street and at Mariposa Street/Third Street. The implementation of this mitigation measure would improve traffic operations surrounding and within the Mission Bay campus site by reducing SOV trips by approximately 5 to 10%, which would represent a 4 to 8% reduction in the overall vehicle trips generated by the campus site. The implementation of this measure by UCSF and the associated 4% reduction in vehicle trips to the Mission Bay campus site would improve traffic operations at Sixteenth Street / Seventh Street from LOS E to LOS D in the AM peak hour and reduce the impacts to less-than-significant levels.

To summarize and compare the traffic impacts of the 2014 LRDP versus the LRDP Variant at the Sixteenth Street study intersections: 1) under the TEP Expanded Alternative, all five study intersections on Sixteenth Street would have significant and unavoidable impacts under either the 2014 LRDP or the LRDP Variant; and, 2) under the TEP Moderate Alternative, all five study intersections on Sixteenth Street would have less than significant impacts under the 2014 LRDP, and four would have less than significant impacts under the LRDP Variant, while the fifth (Sixteenth Street / Seventh Street) would have a significant impact that would be reduced to less than significant by **Mitigation Measure TRAF-MB-C-4**.

Other 2040 Impacts. The LRDP Variant, similar to the 2014 LRDP, in combination with past, present and reasonably foreseeable development, would have less than significant impacts to transit conditions (Muni, regional, and UCSF and MBTMA shuttle buses), pedestrian conditions, bicycle conditions, loading (commercial and passenger) conditions, and parking conditions.

Proposed Golden State Warriors Event Center on Blocks 29-32 at Mission Bay. In April 2014, the Golden State Warriors (GS Warriors) announced the purchase of 12 acres of land in the Mission Bay South Redevelopment Project Area where the team intends to build a new sports and entertainment center. The GS Warriors have just started the planning and design, and environmental studies, for the new site, so the division of square footage of development allowed for the site among the arena, office, and retail uses has not yet been established. The transportation effects of the GS Warriors development are not yet known, but there is a potential for cumulative transportation impacts associated with the GS Warriors event center. In addition the GS Warriors are in the process of developing as part of the project a Transportation Management Program to address potential transportation impacts of the event center. A qualitative discussion of the potential effects of the development of a Golden State Warriors event center at Mission Bay Blocks 29-32 is presented for general information.

The SF-CHAMP travel demand forecasting model developed in 2013 by the SFCTA and the SF Planning Department and used in this study to estimate future cumulative transportation conditions assumes approximately one million square feet of office/R&D with ground floor retail to occur by the year 2040 within Blocks 29 through 32. As such, the traffic and transit data used in the analysis of cumulative transportation impacts of the 2014 LRDP can be deemed as valid representative of a typical day when no events take place at the proposed arena.

Based on data taken from surveys of SF Giants game attendees, spectators at a sellout game at the new arena could be expected to generate about 3,200 vehicle trips and 8,300 transit trips. Based

on previous data for Piers 30 and 32, the event vehicle and transit demand would be inbound during the evening (starting around 6:00 PM) and outbound late at night (after 10:00 or 10:30 PM) because most games and concerts would start around 7:30 PM and last for 2½ to 3 hours. The exact contribution of the new arena to the PM peak-hour cumulative traffic and transit conditions is not known at this time, as the arena project analysis have just started. In addition, the GS Warriors are in the process of developing as part of the project a Transportation Management Program to address potential transportation project impacts.

Several key intersections in the Mission Bay South Area, such as Sixteenth Street/Third Street, Sixteenth/Seventh/Mississippi streets, Mariposa Street/ Third Street, and Seventh Street/Mission Bay Drive, would be expected to operate at a high LOS D by year 2040 during the PM peak hour. Thus, it is possible that an increase in inbound traffic due to an arena event would cause those intersections to degrade to LOS E or F instead of LOS D. If inbound arena event traffic causes significant traffic impacts at these intersections, the contribution of 2014 LRDP traffic, with or without the LRDP Variant, to the cumulative conditions at these intersections would be substantial, and the 2014 LRDP's impact to cumulative traffic impacts would be considered significant. Because the significant impact may not be able to be mitigated to a less than significant level, the cumulative impacts potentially would be significant and unavoidable.

Transit Conditions. While there would be a general increase in ridership, the 2014 LRDP would not create excess demand for public transit that would require the development or expansion of mass transit facilities, the development of which would cause significant environmental impacts.

The SFMTA conducted a facilities needs assessment study[1] in 2013. This study determined that many of Muni's storage, maintenance, and operations facilities are at maximum capacity and not seismically safe and therefore Muni will need to upgrade existing facilities and build new facilities to accommodate transit demand associated with City-wide development.

While the 2014 LRDP would increase ridership on the SF Muni routes serving the four campus sites, this increase in ridership would not exceed the existing or planned capacity of routes serving UCSF. UCSF Transportation Services performs monthly auditing. Should they find that public transit to and from UCSF campus sites does not meet demand, they will adjust shuttle operations (which may include providing additional shuttle service) where necessary to meet demand. Therefore, the 2014 LRDP would not require the expansion or replacement of public transit facilities. If UCSF demand for public transit service requires the construction of facilities that would cause physical impacts, UCSF would contribute its fair share towards the cost.

For the above reasons, the 2014 LRDP, in combination with past, present and reasonably foreseeable development in San Francisco, would have less-than-significant cumulative impacts on SF Muni, regional transit, or UCSF shuttle services.

[1] *The SFMTA's Real Estate and Facilities Vision for the 21st Century* (SFMTA and Parsons Brinckerhoff), January 2013).

The 2014 LRDP would have less-than-significant cumulative impacts to pedestrian flow and safety, bicycle flow and safety, loading access, and parking.

10.2.4.15 Utilities and Service Systems

Development under the 2014 LRDP, when combined with cumulative growth in the vicinity of the campus sites, could increase the demand for utilities and service systems. The 2014 LRDP would accommodate an increase in employment and students of about 11,400 at LRDP horizon in 2035, which would represent approximately 5% of the growth anticipated in the City by 2040. As discussed in Section 5.15, development at the Parnassus Heights, Mount Zion, and Mission Center campus sites would occur as replacement or in-fill on otherwise built-out sites. The necessary City utilities have sufficient capacities to serve those sites and the proposed 2014 LRDP development. To the extent that cumulative demands on wastewater or stormwater conveyance systems from reasonably foreseeable growth in the City would require the construction of new facilities, such construction may have the potential to cause environmental impacts. In general, impacts would be limited to temporary construction effects.

At the Mission Bay campus site, a significant and unavoidable impact was found because there is a question whether the capacity of the pump station on Block P15 or the Mariposa Pump Station and associated sanitary collection system are adequate to handle flows resulting from 2014 LRDP development at the Mission Bay campus site. UCSF has conservatively concluded that potential improvements to the pump stations may be required that may also result in physical environmental effects. It is not yet known whether other cumulative development, including the Warriors project, would encounter this or other utilities impacts. Therefore, it is conservatively assumed that this impact may be significant and unavoidable.

10.3 Significant Irreversible Environmental Effects

Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by a proposed project. Generally, a project would result in significant irreversible environmental changes if

- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve a large commitment of nonrenewable resources;
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project (e.g., highway improvements that provide access to a previously inaccessible area); or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy)

Development under the 2014 LRDP would intensify uses on UCSF campus sites consistent with development in San Francisco's urban environment and, for the Mission Bay campus site,

consistent with the *Mission Bay Redevelopment Plan*. The 2014 LRDP would commit future generations to the same land uses for at least the LRDP horizon. Implementing the 2014 LRDP would result in an irreversible commitment of energy resources, primarily in the form of fossil fuels, including fuel oil, natural gas and gasoline or diesel fuel for construction equipment and automobiles during demolition, construction and on-going use of the campus sites.

Development under the 2014 LRDP would comply with the UC *Presidents Policy on Sustainable Resources,* which requires 20% or better energy performance than California Code of Regulations Title 24 for new construction and renovations, and strives to achieve 30%; requires new laboratory buildings to meet Labs21 Environmental Performance Criteria; and requires all new construction and major renovations to meet a minimum standard of LEED-NC Silver and strive for LEED-NC Gold when possible. Therefore, development under the 2014 LRDP would not use energy in a wasteful, inefficient or unnecessary manner. The consumption or destruction of other non-renewable or slowly renewable resources would also result during construction activities and operations under the 2014 LRDP. These resources include, but are not limited to, lumber, concrete, sand, gravel, asphalt, masonry, metals and water. The 2014 LRDP would also irreversibly use water resources. However, the plan would not involve a large commitment of those resources relative to supply, nor would it consume any of those resources wastefully, inefficiently or unnecessarily.

10.4 Growth Inducement

As required by the CEQA Guidelines, an EIR must include a discussion of the ways in which the proposed project could directly or indirectly foster economic or population growth, or the construction of additional housing and how that growth would, in turn, affect the surrounding environment (CEQA Guidelines Section 15126.2(d)). Growth can be induced in a number of ways, including the elimination of obstacles to growth, or through the stimulation of economic activity within the region. The discussion of removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval. Under CEQA, induced growth is not necessarily considered beneficial, detrimental, or of little significance to the environment.

The 2014 LRDP would not extend utilities or transportation infrastructure to previously undeveloped areas. As discussed in Section 7.15, UCSF is proposing to modify the pump station on Mission Bay Redevelopment Area Block P15. The pump station would be modified without structural or piping modifications by replacing existing pumps with more powerful pumps. These more powerful pumps are physically the same size as the existing pumps and can be connected to the existing discharge piping. Replacement of existing pumps with the proposed more powerful pumps would increase the pump station capacity to 7.34 million gallons per day, which is approximately 0.7 million gallons per day greater than the capacity needed for development under the 2014 LRDP (Freyer & Laureta, Inc, 2013).

The increases in population and intensification of activity at the UCSF campus sites would reinforce existing urban development patterns in San Francisco, concentrating economic activity

in the already-built environment of one of the Bay Area's central cities. As described in Section 5.11, *Population and Housing*, UCSF's share of additional employment in San Francisco (including students) in 2035 would be approximately 6%, and its share of population growth would be approximately 5%. The increase in employment associated with the 2014 LRDP would not result in significant increases in regional population or housing demand that could not be accommodated by planned and potential housing supply within the regional market area.

The *Mission Bay Redevelopment Plan* predicates its future buildout on the assumption that UCSF's development of the Mission Bay campus site would strongly stimulate more biotechnical and related research and development, as well as related retail and commercial business activity within and adjacent to the greater Mission Bay Redevelopment Area, in San Francisco and in the Bay Area region. San Francisco's land use planning for the Mission Bay area and for adjacent areas has considered and is intended to focus and accommodate the projected development. The *Mission Bay Subsequent EIR* identifies the fact that the *Mission Bay Redevelopment Plan* is not growth-inducing, so it follows that UCSF campus development in general accord with the Plan is also not growth-inducing.

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CHAPTER 11
Alternatives

11.1 Introduction

CEQA requires that an EIR describe and evaluate the comparative effects of "a reasonable range of potentially feasible alternatives" to the project. A primary criterion for selecting alternatives to be considered is that such alternatives "would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project" (CEQA Guidelines Section 15126.6(a): CEQA Section 21002).

The EIR need only discuss alternatives that could feasibly attain most of the project's basic objectives. CEQA and the CEQA Guidelines generally define a "feasible" alternative as one that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors, including regulatory constraints and jurisdictional boundaries.

The range of alternatives is governed by the "rule of reason" which requires the EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6(f)). Evaluation of a No Project Alternative and identification of an environmentally superior alternative are required. The significant effects of the alternatives shall be discussed, but in less detail than the significant effects of the proposed project (CEQA Guidelines Section 15126.6(d)).

11.2 Significant and Unavoidable Impacts of the 2014 LRDP

The following significant and unavoidable impacts would result from implementation of the 2014 LRDP:

2014 LRDP

- **Impact AIR-LRDP-4:** Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during demolition and construction activities.

- **Impact AIR-LRDP-5:** Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during operation.

- **Impact CUL-LRDP-2:** Implementation of the 2014 LRDP could result in demolition of historical resources as defined in CEQA Guidelines Section 15064.5.

- **Impact NOI-LRDP-2:** Implementation of the 2014 LRDP would result in increased ambient noise levels during pile-driving activities.

2014 LRDP Proposals at the Parnassus Heights Campus Site

- **Impact CUL-PH-2:** Demolition of the Surge building at the Parnassus Heights campus site would result in a substantial adverse change in the significance of an historical resource.

- **Impact NOI-PH-1:** Demolition activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in a temporary increase in ambient noise levels.

- **Impact NOI-PH-2:** Construction activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in increases in ambient noise levels over the term of the exterior construction activities.

2014 LRDP Proposals at the Mission Bay Campus Site

- **Impact AIR-MB-3:** Operations at the Mission Bay campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants.

- **Impact NOI-MB-2:** Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels during pile-driving activities.

- **Impact UTIL-MB-2:** There may be impacts related to wastewater infrastructure as a result of 2014 LRDP development at the Mission Bay campus site.

2014 LRDP Proposals at the Mount Zion Campus Site

- **Impact CUL-MZ-1:** Demolition of the Hellman building at the Mount Zion campus site would result in a substantial adverse change in the significance of an historical resource.

- **Impact NOI-MZ-1:** Demolition activities proposed under the 2014 LRDP at the Mount Zion campus site would result in a temporary increase in ambient noise levels.

- **Impact NOI-MZ-2:** Construction activities proposed under the 2014 LRDP at the Mount Zion campus site would result in increases in ambient noise levels over the term of the exterior construction activities.

2014 LRDP Proposals at the Mount Zion Campus Site

- **Impact NOI-MC-2:** Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels during pile-driving activities.

11.3 Alternatives Analyzed in the EIR

The project alternatives selected for evaluation would have the potential to lessen or avoid one or more of the identified significant and unavoidable impacts of the 2014 LRDP. The alternatives addressed in this EIR were selected in consideration of one or more of the following factors:

- The extent to which the alternative would accomplish most of the basic objectives of the proposed 2014 LRDP (identified in Chapter 3, *Project Description*)
- The extent to which the alternative would avoid or lessen any of the identified significant environmental effects of the proposed 2014 LRDP
- The feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, and consistency with applicable plans regulatory limitations, and jurisdictional boundaries;
- The appropriateness of the alternative in contributing to a range of reasonable alternatives necessary to permit a reasoned choice; and
- The requirement of the CEQA Guidelines to consider a "no project" alternative and to identify an "environmentally superior" alternative that differs from the no project alternative.

This chapter describes four alternatives to the proposed 2014 LRDP: (1) No Project—No Development (2) No Project—Development Under the Existing LRDP; (3) Reduced Program; and (4) No Demolition of Historical Resources. These alternatives are described below, followed by a discussion of their impacts and how the impacts would differ from those of the proposed 2014 LRDP.

11.3.1 Alternative 1: No Project—No Development

CEQA requires an evaluation of the "no project" alternative so that decision makers can compare the impacts of approving the project with the impacts of not approving the project. According to CEQA Guidelines Section 15126.6(e)(3), when the no project alternative is the revision of an existing land use plan, such as the 2014 LRDP, the no project alternative will be the continuation of the existing plan into the future.

This "No Project—No Development" alternative, by contrast considers the impacts of a no project alternative where development currently approved under the existing 1996 LRDP would not be undertaken and, buildings proposed for demolition under the 1996 LRDP would not be demolished. While buildings currently under construction at the Mission Bay campus site would be completed (Mission Hall and the Phase 1 Medical Center), the remaining existing entitlement for the campus site would not be developed under Alternative 1. This alternative was selected for evaluation because it would avoid the significant and unavoidable air quality impacts during operation at the Mission Bay campus site; avoid the significant and unavoidable noise impacts during construction at all four main campus sites; and avoid the significant and unavoidable cultural resources impacts to resulting from demolition of Surge at the Parnassus Heights campus

site and the demolition of Hellman at the Mount Zion campus site. Because building demolitions proposed at the Parnassus Heights campus site would not occur under Alternative 1, the space ceiling would continue to be exceeded.

The No Project – No Development alternative would consist of:

- No demolition of existing buildings at Parnassus Heights or Mount Zion campus sites.
- No new development proposed under the 2014 LRDP.
- No further development of currently approved projects under the existing 1996 LRDP.
- Complete and operate Mission Bay campus site buildings now under construction: Mission Hall and Phase 1 of the Medical Center at Mission Bay.
- Decommission and reuse Moffitt Hospital for uses other than inpatient care.
- No development of Blocks 33 or 34 at Mission Bay; leave land vacant.

11.3.1.1 Comparison to Impacts of the 2014 LRDP

No further development under the 1996 LRDP or the 2014 LRDP, with the exception of Mission Hall and Phase 1 of the Medical Center at Mission Bay, would greatly reduce most construction and operational significant impacts, including air quality and noise impacts, as well as generally reducing the effects of a number of other less than significant impacts of the 2014 LRDP.

Not demolishing existing buildings at the Parnassus Heights or Mount Zion campus sites would eliminate the significant adverse impact to historic resources, and would reduce related air quality, noise, and traffic effects at those campus sites.

The environmental effects of the alternatives are classified by the level of significance for each environmental topic.[1] A comparison to the effects of the 2014 LRDP is also listed.

Impacts that are Significant and Unavoidable under the 2014 LRDP

Air Quality **(LTSM, much less than 2014 LRDP)**

The potential air quality impacts under Alternative 1 would be much less than the significant and unavoidable impacts of the 2014 LRDP because no buildings would be demolished and no new buildings would be constructed. As a result, the related air quality effects of construction and operation would be greatly reduced. Traffic-related air quality effects would also be greatly reduced.

Cultural Resources **(LTSM, much less than 2014 LRDP)**

The potential cultural resources impacts under Alternative 1 would be much less than the significant and unavoidable impacts of the 2014 LRDP because the demolition of the Surge and

[1] LTS=Less than Significant
LTSM=Less than Significant with Mitigation
SU=Significant and Unavoidable

Hellman buildings on the Parnassus Heights and Mount Zion campus sites, respectively, would not occur. Thus, these significant and unavoidable impacts of the 2014 LRDP would not occur.

Noise **(LTSM, much less than 2014 LRDP)**

The potential construction or demolition noise impacts under Alternative 1 would be much less than the significant and unavoidable impacts of the 2014 LRDP because no demolition or development other than completion of under-construction projects would occur. Traffic-related noise effects would also be greatly reduced.

Transportation and Traffic **(LTS, less than 2014 LRDP)**

The potential cumulative transportation and traffic impacts under Alternative 1 would be less than the significant and unavoidable impacts of the 2014 LRDP because no new development would occur on the Mission Bay campus site that could result in transportation and traffic effects.

Utilities and Service Systems **(SU, similar to 2014 LRDP)**

The potential wastewater infrastructure impact at the Mission Bay campus site under Alternative 1 would be similar to the significant and unavoidable impact of the 2014 LRDP because Mission Hall and Phase 1 of the Medical Center at Mission Bay have been constructed and will be opening, and may require wastewater infrastructure improvements.

Impacts that are Less Than Significant or Mitigated under the 2014 LRDP

Aesthetics **(LTS, less than 2014 LRDP)**

The potential aesthetic impacts under Alternative 1 would be less than the 2014 LRDP as no new development would occur that could result in aesthetic effects.

Biological Resources **(LTS, less than 2014 LRDP)**

The potential biological impacts under Alternative 1 would be less than the 2014 LRDP as no buildings would be demolished and no new buildings, utilities, infrastructure, or open space proposals would be constructed on the Parnassus Heights campus site that could result in adverse effects.

Geology, Soils and Seismicity **(LTS, greater than 2014 LRDP)**

The potential geology and soils impacts under Alternative 1 would be similar to the 2014 LRDP although no new development would occur that could result in geology and soils effects. A potential exists for a greater adverse effect at the Parnassus Heights campus site than under the 2014 LRDP if the hillside instability is not corrected.

Greenhouse Gas Emissions **(LTSM, less than 2014 LRDP)**

The potential greenhouse gas (GHG) emissions impacts under Alternative 1 would be less than the mitigated impacts of the 2014 LRDP as no new development would occur that could result in increased GHG emissions. However, the potential reductions in GHG emissions that could occur with implementation of the GHG Reduction Strategy would also not occur under this alternative, and therefore impacts would actually be greater over time.

Hazards and Hazardous Materials **(LTS, less than 2014 LRDP)**

The potential hazards and hazardous materials impacts under Alternative 1 would be less than the mitigated impacts of the 2014 LRDP because no new construction would occur and there would be no increase in storage, handling, and use of hazardous materials. An Excavation Management Plan and Soil Management Plan would not be required to reduce effects from naturally occurring asbestos and on-site contamination (Mission Center campus site), respectively.

Hydrology and Water Quality **(LTS, less than 2014 LRDP)**

The less than significant potential hydrology and water quality impacts under Alternative 1 would be less than the mitigated impacts of the 2014 LRDP because no new development would occur that could result in hydrology and water quality effects.

Land Use and Planning **(LTS, greater than 2014 LRDP)**

The less than significant potential land use impacts under Alternative 1 would be greater than the less than significant impacts of the 2014 LRDP because proposed building demolitions on the Parnassus Heights campus site would not occur under this alternative and, the space ceiling overage would not be reduced.

Population and Housing **(LTS, less than 2014 LRDP)**

The potential population and housing impacts under Alternative 1 would be less than the less than significant impacts of the 2014 LRDP because no new development would occur that could result in population and housing effects.

Public Services **(LTS, less than 2014 LRDP)**

The potential public services impacts under Alternative 1 would be less than the less than significant impacts of the 2014 LRDP because no new development would occur that could result in public services effects.

Recreation **(LTS, less than 2014 LRDP)**

The potential recreation impacts under Alternative 1 would be less than the less than significant impacts of the 2014 LRDP because no new development would occur that could result in recreation effects.

Transportation and Traffic **(LTS, less than 2014 LRDP)**

The potential construction or demolition traffic impacts under Alternative 1 would be much less than the mitigated impacts of the 2014 LRDP because no demolition or development other than completion of under-construction projects would occur.

11.3.1.2 Relationship to Project Objectives

This section examines how Alternative 1 would compare with the 2014 LRDP in terms of achieving the five campus-wide objectives.

- *Respond to the City and Community Context:* Demolitions proposed under the 1996 LRDP for the Parnassus Heights campus site would not occur; therefore, the University would not

be responding to the 1976 Regents' Resolution by reducing the space ceiling exceedance. In addition, UCSF would not replace the decommissioned Moffitt Hospital, which would eliminate an important medical resource at a location in San Francisco that serves the Sunset District and other neighborhoods in the southwestern portion of the City. As a result, Alternative 1 would not meet this objective of the 2014 LRDP.

- *Accommodate UCSF's Growth Through 2035:* This alternative would only develop buildings already under construction at the Mission Bay campus site; therefore, growth proposed through 2035 under the 2014 LRDP at this and the other three main campus sites would not occur. As a result, Alternative 1 would not meet this objective of the 2014 LRDP.

- *Ensure UCSF's Facilities are Seismically Safe:* While Moffitt Hospital would not be seismically retrofitted under this alternative, by moving inpatient care to other facilities the facility could be reused for other purposes. The Faculty Alumni House, Hellman, the Harold Brunn Institute, and 2255 Post Street are seismically compromised and they would not be retrofitted under this alternative. As a result, Alternative 1 would not meet this objective of the 2014 LRDP.

- *Promote Environmental Sustainability:* This alternative would not reduce commute travel as new on-site housing would not be provided. The GHG Reduction Strategy would not be implemented; therefore, reductions in GHG emissions proposed by this plan would not occur. This objective would only be partially met under this alternative.

- *Minimize Facility Costs:* Because no new development would occur under this alternative, facility costs would be far less than compared to the 2014 LRDP. However, this alternative may preclude the consolidation of leased facilities at UCSF-owned facilities and may require the continued operation or possible expansion of remote campus sites, which would not meet this objective of the 2014 LRDP.

11.3.2 Alternative 2: No Project—Development Under Existing LRDP

As mentioned above under Alternative 1, when the no project alternative is the revision of an existing land use plan, the no project alternative represents the continuation of the existing plan, which in this case is the University's 1996 LRDP. Alternative 2 would either renovate Moffitt Hospital for inpatient use or decommission this facility for acute care and accelerate construction of the Phase 2 Medical Center at Mission Bay. Under either scenario the New Hospital Addition would not be constructed at the Parnassus Heights campus site. Development on the North and South Campuses of the Mission Bay campus site would continue under existing entitlement and Blocks 33 and 34 would be developed according to existing City entitlement. Buildings proposed for demolition under the 2014 LRDP at the Mount Zion campus site would be demolished under this alternative, but no new replacement buildings would be constructed. Likewise, no development would occur at the Mission Center campus site.

This alternative was selected for evaluation because it would avoid the significant and unavoidable air quality impacts during operation at the Mission Bay campus site and avoid the significant and unavoidable noise impacts during construction at the Parnassus Heights, Mount Zion, and Mission Center campus sites. Alternative 2 would result in significant and unavoidable

cultural resources impacts resulting from demolition of the Surge building at the Parnassus Heights campus site and the demolition of the Hellman building at the Mount Zion campus site. The GHG Reduction Strategy would not be adopted under this alternative.

The No Project – Development Under the Existing LRDP alternative would consist of:

- No new development under proposed 2014 LRDP.

Parnassus Heights Campus Site

- No New Hospital Addition at the Parnassus Heights campus site.
- Renovate Moffitt Hospital for inpatient use or decommission Moffitt for other uses and accelerate construction of Phase 2 of the Medical Center at Mission Bay.
- Demolish the following buildings at the Parnassus Heights campus site to get closer to space ceiling: Aldea, UC Hall, Surge, Woods, Environmental Health and Safety, Proctor, Medical Research 4, and the Laboratory of Radiobiology.

Mission Bay Campus Site

- Continue buildout of North Campus of the Mission Bay campus site to 2.65 million gsf.
- Develop remainder of the entitlement on South Campus of the Mission Bay campus site: Outpatient Cancer building and Phase 2 Medical Center.
- Develop Blocks 33 and 34 according to existing City entitlement.

Mount Zion Campus Site

- Demolish the Hellman, Harold Brunn Institute, and the Dialysis Center buildings. Renovate existing buildings at Mount Zion for outpatient use.

Mission Center Campus Site

- No new development.

11.3.2.2 Comparison to Effects of the 2014 LRDP

Significant and Unavoidable Impacts of the 2014 LRDP

Air Quality **(LTSM, less than 2014 LRDP)**

The potential air quality impacts under Alternative 2 would be less than the significant and unavoidable impacts of the 2014 LRDP because less development would occur at the Parnassus Heights, Mission Bay, and Mount Zion campus sites and no development would occur at the Mission Center campus site. As a result, the related air quality effects of construction and operation would be greatly reduced. Traffic-related air quality effects would also be greatly reduced.

Cultural Resources **(SU, similar to the 2014 LRDP)**

The potential cultural resources impacts under Alternative 2 would be similar to the significant and unavoidable impacts of the 2014 LRDP because the demolition of the Surge and Hellman buildings on the Parnassus Heights and Mount Zion campus sites, respectively, would still occur.

Noise **(SU, less than 2014 LRDP)**

The potential construction and demolition noise impacts under Alternative 2 would be generally less than the significant and unavoidable impacts of the 2014 LRDP because less development would occur at the Parnassus Heights, Mission Bay, and Mount Zion campus sites and no development would occur at the Mission Center campus site. Traffic-related noise effects would also be reduced. However, if pile driving is required during construction at the Mission Bay campus site noise impacts from construction would remain significant and unavoidable under Alternative 2.

Transportation and Traffic **(SU, less than 2014 LRDP)**

The potential cumulative transportation and traffic impacts under Alternative 2 would be less than the significant and unavoidable impacts of the 2014 LRDP because less development would occur on the Mission Bay campus site that could result in transportation and traffic effects. It is not known with certainty whether the reduction in development proposed under this alternative would be sufficient to reduce the significant and unavoidable cumulative impact identified under the 2014 LRDP to a less-than-significant level.

Utilities and Service Systems **(SU, similar 2014 LRDP)**

The potential wastewater infrastructure impact at the Mission Bay campus site under Alternative 2 would be similar to the significant and unavoidable impact of the 2014 LRDP because Mission Hall and the Phase 1 Medical Center will open soon, in addition to other proposed development under this Alternative, and may require wastewater infrastructure improvements.

Less than Significant or Mitigated Impacts of the 2014 LRDP

Aesthetics **(LTSM, less than 2014 LRDP)**

The potential aesthetic impacts under Alternative 2 would be less than the 2014 LRDP because less development would occur at the Parnassus Heights, Mission Bay, and Mount Zion campus sites and no development would occur at the Mission Center campus site.

Biological Resources **(LTSM, less than 2014 LRDP)**

The potential biological impacts under Alternative 2 would be less than the 2014 LRDP because the proposed New Hospital Addition would not be constructed on the Parnassus Heights campus site thereby reducing potential adverse effects to birds.

Geology, Soils and Seismicity **(LTS, similar to 2014 LRDP)**

The potential geology and soils impacts under Alternative 2 would be similar to the 2014 LRDP because new development would occur that could result in geology and soils effects. A potential

exists for a larger adverse effect at the Parnassus Heights campus site if the hillside instability is not corrected.

Greenhouse Gas Emissions **(LTSM, less than 2014 LRDP)**

The potential greenhouse gas (GHG) emissions impacts under Alternative 2 would be less than the mitigated impacts of the 2014 LRDP as less development would occur that could result in GHG effects. However, the potential reductions in GHG emissions that could occur with implementation of the GHG Reduction Strategy might not occur under this alternative.

Hazards and Hazardous Materials **(LTSM, less than 2014 LRDP)**

The potential hazards and hazardous materials impacts under Alternative 2 would be less than the mitigated impacts of the 2014 LRDP because less construction would occur and there would be less increase in storage, handling, and use of hazardous materials.

Hydrology and Water Quality **(LTS, similar to 2014 LRDP)**

The potential hydrology and water quality impacts under Alternative 2 would be similar to the less than significant impacts of the 2014 LRDP because new development would occur that could result in hydrology and water quality effects.

Land Use and Planning **(LTS, similar to 2014 LRDP)**

The potential land use impacts under Alternative 2 would be similar to the less than significant impacts of the 2014 LRDP because proposed building demolitions on the Parnassus Heights campus site would still occur under this alternative; therefore, the University would be responding to the 1976 Regents' Resolution by reducing the space ceiling overage.

Population and Housing **(LTS, less than 2014 LRDP)**

The potential population and housing impacts under Alternative 2 would be less than the less than significant impacts of the 2014 LRDP because less development would occur that could result in population and housing effects.

Public Services **(LTS, less than 2014 LRDP)**

The potential public services impacts under Alternative 2 would be less than the less than significant impacts of the 2014 LRDP because no less development would occur that could result in public services effects.

Recreation **(LTS, less than 2014 LRDP)**

The potential recreation impacts under Alternative 2 would be less than the less than significant impacts of the 2014 LRDP because less development would occur that could result in recreation effects.

Transportation and Traffic **(LTS, less than 2014 LRDP)**

The potential construction or demolition traffic impacts under Alternative 2 would be less than the mitigated impacts of the 2014 LRDP, because less development would occur that could result in construction and demolition traffic effects.

11.3.2.3 Relationship to Project Objectives

This section examines how Alternative 2 would compare with the 2014 LRDP in terms of achieving the five campus-wide objectives.

- *Respond to the City and Community Context:* Demolitions proposed under the 1996 LRDP for the Parnassus Heights campus site would occur under this alternative; therefore, the University would be responding to the 1976 Regents' Resolution by reducing building space. If UCSF decommissioned Moffitt Hospital or retrofitted it for inpatient use without constructing the New Hospital Addition, then this alternative would eliminate an important medical resource at a location in San Francisco that serves the Sunset District and other neighborhoods in the southwestern portion of the City. Therefore, Alternative 2 would only partially meet this objective of the 2014 LRDP.
- *Accommodate UCSF's Growth Through 2035:* This alternative would result in much less development at the Parnassus Heights, Mount Zion, and Mission Bay campus sites and no development at the Mission Center campus site; therefore, growth proposed by UCSF through 2035 under the 2014 LRDP at the four main campus sites would not be accommodated. Therefore, Alternative 2 would only partially meet this objective of the 2014 LRDP.
- *Ensure UCSF's Facilities are Seismically Safe:* Moffitt Hospital could be seismically retrofitted under this alternative, but the Faculty Alumni House would not. Hellman and the Harold Brunn Institute are seismically compromised and they would be demolished under this alternative. Therefore, Alternative 2 would only partially meet this objective of the 2014 LRDP.
- *Promote Environmental Sustainability:* This alternative would not reduce commute travel as new on-site housing would not be provided. The GHG Reduction Strategy would not be implemented; therefore, reductions in GHG emissions proposed by this plan would not occur. Therefore, Alternative 2 would only partially meet this objective of the 2014 LRDP.
- *Minimize Facility Costs:* Because less new development would occur under this alternative, facility costs would be less than compared to the 2014 LRDP. However, this alternative may preclude the consolidation of leased facilities at UCSF-owned facilities and may require the continued operation or possible expansion of remote campus sites, which would not meet this objective of the 2014 LRDP.

11.3.3 Alternative 3: Reduced Program

The Reduced Program Alternative would either renovate Moffitt Hospital for inpatient use or decommission this facility for acute care and accelerate construction of the Phase 2 Medical Center at Mission Bay. Under either scenario the New Hospital Addition would not be constructed at the Parnassus Heights campus site. The Mission Bay campus site would be developed under the existing entitlement and Blocks 33 and 34 would be developed as proposed under the 2014 LRDP. The Mount Zion and Mission Center campus sites would be developed as proposed under the 2014 LRDP. This alternative was selected to avoid the significant and unavoidable air quality impacts during operation at the Mission Bay campus site and avoid the significant and unavoidable noise impacts during construction at the Parnassus Heights and Mission Bay campus sites. Alternative 3 would result in significant and unavoidable cultural

resources impacts resulting from demolition of the Surge building at the Parnassus Heights campus site and the demolition of the Hellman building at the Mount Zion campus site.

The Reduced Program alternative would consist of:

- Implement the GHG Reduction Strategy.

Parnassus Heights Campus Site

- No New Hospital Addition at the Parnassus Heights campus site.
- Renovate Moffitt Hospital for inpatient use; or decommission Moffitt and accelerate construction of the Phase 2 Medical Center at Mission Bay.
- Renovate and reuse UC Hall and Millberry Union towers.
- Demolish the following buildings at the Parnassus Heights campus site to get closer to space ceiling: Surge, Woods, Environmental Health and Safety, Proctor, Medical Research 4, Laboratory of Radiobiology, and Koret.

Mission Bay Campus Site

- Continue buildout of Mission Bay North Campus to 2.65 million gsf.
- Develop remainder of entitlement on South Campus: Phase 2 Medical Center.
- Develop Blocks 33 and 34 as proposed under the 2014 LRDP.

Mount Zion Campus Site

- Demolish Hellman, Harold Brunn Institute, the Dialysis Center and possibly 2255 Post Street. Renovate existing Mount Zion hospital for outpatient use.
- Develop Mount Zion as proposed under the 2014 LRDP.

Mission Center Campus Site

- Develop Mission Center building as proposed under the 2014 LRDP.

11.3.3.2 Comparison to Effects of the 2014 LRDP

Significant and Unavoidable Impacts of the 2014 LRDP

Air Quality **(SU, less than 2014 LRDP)**

The potential air quality impacts under Alternative 3 would be less than the significant and unavoidable impacts of the 2014 LRDP because less development would occur at the Parnassus Heights and Mission Bay campus sites. As a result, the related air quality effects of construction and operation would be reduced. Traffic-related air quality effects would also be reduced. It is not known with certainty whether the reduction in development proposed under this alternative would be sufficient to reduce the significant and unavoidable impact identified under the 2014 LRDP to a less-than-significant level.

Cultural Resources **(SU, similar to the 2014 LRDP)**

The potential cultural resources impacts under Alternative 3 would be similar to the significant and unavoidable impacts of the 2014 LRDP because the demolition of the Surge and Hellman buildings on the Parnassus Heights and Mount Zion campus sites, respectively, would still occur.

Noise **(SU, less than 2014 LRDP)**

The potential construction or demolition noise impacts under Alternative 3 would be less than the significant and unavoidable impacts of the 2014 LRDP because less development would occur at the Parnassus Heights and Mission Bay campus sites. Traffic-related noise effects would also be reduced. However, if pile driving is required during construction the impact would remain significant and unavoidable under Alternative 3.

Transportation and Traffic **(SU, less than 2014 LRDP)**

The potential cumulative transportation and traffic impacts under Alternative 3 would be less than the significant and unavoidable impacts of the 2014 LRDP because less development would occur on the Mission Bay campus site that could result in transportation and traffic effects. It is not known with certainty whether the reduction in development proposed under this alternative would be sufficient to reduce the significant and unavoidable cumulative impact identified under the 2014 LRDP to a less-than-significant level.

Utilities and Service Systems **(SU, similar 2014 LRDP)**

The potential wastewater infrastructure impact at the Mission Bay campus site under Alternative 3 would be similar to the significant and unavoidable impact of the 2014 LRDP because Mission Hall and the Phase 1 Medical Center will open soon, in addition to other proposed development under this Alternative, and may require wastewater infrastructure improvements.

Less than Significant or Mitigated Impacts of the 2014 LRDP

Aesthetics **(LTSM, less than 2014 LRDP)**

The potential aesthetic impacts under Alternative 3 would be less than the 2014 LRDP because less development would occur at the Parnassus Heights and Mission Bay campus sites.

Biological Resources **(LTSM, less than 2014 LRDP)**

The potential biological impacts under Alternative 3 would be less than the 2014 LRDP because the proposed New Hospital Addition would not be constructed on the Parnassus Heights campus site thereby reducing potential adverse effects to birds.

Geology, Soils and Seismicity **(LTS, similar to 2014 LRDP)**

The potential geology and soils impacts under Alternative 3 would be similar to the 2014 LRDP because new development would occur that could result in geology and soils effects.

Greenhouse Gas Emissions **(LTSM, less than 2014 LRDP)**

The potential greenhouse gas (GHG) emissions impacts under Alternative 3 would be less than the mitigated impacts of the 2014 LRDP as less development would occur that could result in GHG effects.

Hazards and Hazardous Materials **(LTSM, similar to 2014 LRDP)**

The potential hazards and hazardous materials impacts under Alternative 3 would be similar to the mitigated impacts of the 2014 LRDP because new development would occur that could result in hazards and hazardous materials effects.

Hydrology and Water Quality **(LTS, similar to 2014 LRDP)**

The potential hydrology and water quality impacts under Alternative 3 would be similar to the less than significant impacts of the 2014 LRDP because new development would occur that could result in hydrology and water quality effects.

Land Use and Planning **(LTS, similar to 2014 LRDP)**

The potential land use impacts under Alternative 3 would be similar to the less than significant impacts of the 2014 LRDP because proposed building demolitions on the Parnassus Heights campus site would still occur under this alternative; therefore, the University would be responding to the 1976 Regents' Resolution.

Population and Housing **(LTS, less than 2014 LRDP)**

The potential population and housing impacts under Alternative 3 would be less than the less than significant impacts of the 2014 LRDP because less development would occur that could result in population and housing effects.

Public Services **(LTS, less than 2014 LRDP)**

The potential public services impacts under Alternative 3 would be less than the less than significant impacts of the 2014 LRDP because no less development would occur that could result in public services effects.

Recreation **(LTS, less than 2014 LRDP)**

The potential recreation impacts under Alternative 3 would be less than the less than significant impacts of the 2014 LRDP because less development would occur that could result in recreation effects.

Transportation and Traffic **(LTS, less than 2014 LRDP)**

The potential construction or demolition traffic impacts under Alternative 3 would be less than the mitigated impacts of the 2014 LRDP, because less development would occur that could result in construction and demolition traffic effects.

11.3.3.3 Relationship to Project Objectives

This section examines how Alternative 3 would compare with the 2014 LRDP in terms of achieving the five campus-wide objectives.

- *Respond to the City and Community Context:* Demolitions proposed under the 1996 LRDP for the Parnassus Heights campus site would occur under this alternative; therefore, the University would be responding to the 1976 Regents' Resolution by reducing building space. If UCSF decommissioned Moffitt Hospital or retrofitted it for inpatient use without the New Hospital Addition, then this alternative would eliminate an important medical resource at a location in San Francisco that serves the Sunset District and other neighborhoods in the southwestern portion of the City. Therefore, this objective would only be partially met under this alternative.

- *Accommodate UCSF's Growth Through 2035:* This alternative would result in less development at the Parnassus Heights and Mission Bay campus sites; therefore, growth proposed by UCSF through 2035 at the four main campus sites would not be accommodated and the objective would only be partially met under this alternative.

- *Ensure UCSF's Facilities are Seismically Safe:* Moffitt Hospital could be seismically retrofitted under this alternative. Hellman and the Harold Brunn Institute are seismically compromised and they would be demolished under this alternative. Therefore, Alternative 3 would only partially meet this objective of the 2014 LRDP.

- *Promote Environmental Sustainability:* This alternative would reduce commute travel as new on-site housing would be provided at the Parnassus Heights campus site and possibly at the Mission Bay campus site. The Greenhouse Gas Reduction Strategy would be implemented; therefore, reductions in GHG emissions proposed by this plan would occur.

- *Minimize Facility Costs:* Because less new development would occur under this alternative, facility costs would be less than compared to the 2014 LRDP. However, this alternative may preclude the consolidation of leased facilities at UCSF-owned facilities and may require the continued operation or possible expansion of remote campus sites. Therefore, this object would only be partially met under this alternative.

11.3.4 Alternative 4: No Demolition of Historical Resources

The No Project – No Demolition of Historical Resources alternative would include all elements of the 2014 LRDP, with the exceptions that the Surge building at the Parnassus Heights campus site and the Hellman building at the Mount Zion campus site would not be demolished. Rather, these two buildings would be preserved and rehabilitated per the Secretary of the Interior's Standards, and then reused in order to avoid the 2014 LRDP's significant and unavoidable impacts on historical resources. The proposed new office/research building at the Mount Zion campus site would still be constructed, but it would have a smaller footprint as it would only be built in the area currently occupied by the Harold Brunn Institute and the Dialysis Center buildings.

11.3.4.1 Comparison to Effects of the 2014 LRDP

Significant and Unavoidable Impacts of the 2014 LRDP

Air Quality **(SU, similar to the 2014 LRDP)**

The potential air quality impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Cultural Resources **(LTSM, less than the 2014 LRDP)**

The potential cultural resources impacts under Alternative 4 would be less than the 2014 LRDP as the demolition of Surge and Hellman buildings on the Parnassus Heights and Mount Zion campus sites, respectively, would not occur.

Noise **(SU, similar to the 2014 LRDP)**

The potential noise impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Transportation and Traffic **(SU, similar to the 2014 LRDP)**

The potential transportation and traffic impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Utilities and Service Systems **(SU, similar 2014 LRDP)**

The potential wastewater infrastructure impact at the Mission Bay campus site under Alternative 3 would be similar to the significant and unavoidable impact of the 2014 LRDP because Mission Hall and the Phase 1 Medical Center will open soon and all development proposed at the Mission Bay campus site under the 2014 LRDP would be constructed under this alternative.

Less than Significant or Mitigated Impacts of the 2014 LRDP

Aesthetics **(LTSM, similar to the 2014 LRDP)**

The potential aesthetic impacts under Alternative 4 would generally be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative. Depending on the final building design for the proposed office/research building on the Mount Zion campus site, shadow effects on the Hamilton Recreation Center may be reduced because the building would not be constructed in the space currently occupied by the Hellman building.

Biological Resources **(LTSM, similar to the 2014 LRDP)**

The potential biological resources impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP at the Parnassus Heights campus site would be constructed under this alternative.

Geology, Soils and Seismicity **(LTS, similar to the 2014 LRDP)**

The potential geology and soils impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Greenhouse Gas Emissions **(LTSM, similar to the 2014 LRDP)**

The potential greenhouse gas impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Hazards and Hazardous Materials **(LTSM, similar to the 2014 LRDP)**

The potential hazards and hazardous materials impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Hydrology and Water Quality **(LTS, similar to the 2014 LRDP)**

The potential hydrology and water quality impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Land Use and Planning **(LTS, similar to the 2014 LRDP)**

The potential land use impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative. Not demolishing Surge would have an effect on the space ceiling.

Population and Housing **(LTS, similar to the 2014 LRDP)**

The potential population and housing impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Public Services **(LTS, similar to the 2014 LRDP)**

The potential public services impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Recreation **(LTS, similar to the 2014 LRDP)**

The potential recreation impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Transportation and Traffic **(LTS, less than 2014 LRDP)**

The potential construction or demolition traffic impacts under Alternative 4 would be the same as the 2014 LRDP as all development proposed under the 2014 LRDP would be constructed under this alternative.

Utilities and Service Systems **(LTS, similar to the 2014 LRDP)**

The potential utilities and service systems impacts under Alternative 4 would be the same as the 2014 LRDP as Mission Hall and the Phase 1 Medical Center will open soon and all development proposed under the 2014 LRDP would be constructed under this alternative.

11.3.4.2 Relationship to Project Objectives

The relationship of Alternative 4 to the project objectives would generally be the same as the 2014 LRDP; however, the seismically compromised Hellman building on the Mount Zion campus site would not be retrofitted or replaced under this alternative and therefore this alternative would only partially meet the objective to endure seismic safety. In addition, because the proposed office/research building would not be constructed at least partially on the space currently occupied by the Hellman building, the new building may by necessity be smaller than proposed under the 2014 LRDP, thereby reducing the space needed to accommodate UCSF growth through 2035.

11.4 Summary Comparison of the 2014 LRDP Alternatives[2]

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
Aesthetics				
Impact AES-LRDP-3: Implementation of the 2014 LRDP could result in flood lighting during nighttime construction activities that would adversely affect nighttime views in the area. (LSM)	L+	L	L	E
Impact AES-LRDP-4: Implementation of the 2014 LRDP could create new sources of substantial light or glare that would adversely affect day or nighttime views in the area. (LSM)	L+	L	L	E
Impact AES-LRDP-5: Implementation of the 2014 LRDP could create street-level winds that could be hazardous to pedestrians in the area. (LSM)	L+	L	L	E
Impact AES-LRDP-6: Implementation of the 2014 LRDP could substantially reduce sunlight or significantly increase shadows in public open space areas. (LSM)	L+	L	L	E
Impact AES-PH-3: Construction of the New Hospital Addition and faculty housing buildings at the Parnassus Heights campus site could result in flood lighting on the sites during nighttime construction activities. (LSM)	L+	L+	L+	E
Impact AES-PH-4: The New Hospital Addition and new faculty housing at the Parnassus Heights campus site could create new sources of substantial light or glare that would adversely affect day or nighttime views in the area. (LSM)	L+	L+	L+	E

[2] E = Impacts are similar or the same as the 2014 LRDP
L = Impacts are less
L+ = Impacts are much less
G = Impacts are greater
G+ = Impacts are much greater

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
Impact AES-PH-5: The demolition of 8 existing buildings, including LPPI, and construction of the New Hospital Addition at the Parnassus Heights campus site would create street-level winds that could be hazardous to pedestrians in the area. (LSM)	E	E	E	E
Impact AES-MB-5: Implementation of the 2014 LRDP at the Mission Bay campus site could create street-level winds that could be hazardous to pedestrians in the area. (LSM)	L+	E	E	E
Impact AES-MZ-2: The proposed office/research building at the Mount Zion campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area. (LSM)	L+	L+	E	E
Aesthetics (cont.)				
Impact AES-MZ-3: Construction of the proposed office/research building at the Mount Zion campus site could result in flood lighting sites during nighttime construction activities. (LSM)	L+	L+	E	E
Impact AES-MZ-4: The proposed office/research building at the Mount Zion campus site would cast shadow on the Hamilton Recreation Center. (LSM)	L+	L+	E	E
Impact AES-MZ-5: The demolition of the three existing buildings and construction of the Office / Research building at the Mount Zion campus site would create street-level winds that could be hazardous to pedestrians in the area. (LSM)	E	E	E	E
Impact AES-MC-2: The proposed office building and parking structure at the Mission Center campus site could create new sources of substantial light or glare which would adversely affect day or nighttime views in the area. (LSM)	L+	L+	E	E
Impact AES-MC-3: Construction of the proposed office building and parking structure at the Mission Center campus site could result in flood lighting sites during nighttime construction activities. (LSM)	L+	L+	E	E
Air Quality				
Impact AIR-LRDP-4: Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during demolition and construction activities. (SU)	L+	L	L	E
Impact AIR-LRDP-5: Implementation of the 2014 LRDP would result in increased emissions of criteria air pollutants during operation. (SU)	L+	L	L	E
Impact AIR-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus site would result in increased emissions of criteria air pollutants during demolition and construction activities. (LSM)	L+	L	L	E

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
Impact AIR-PH-3: Operations at the Parnassus Heights campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (LSM)	L+	L+	L+	E
Impact AIR-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site would result in increased emissions of criteria air pollutants during construction activities. (LSM)	L+	L	L	E
Impact AIR-MB-2: Construction activities at the Mission Bay campus site under the 2014 LRDP would increase emissions of toxic air contaminants (TACs) and increase health risks for nearby residents. (LSM)	L+	L+	E	E
Air Quality (cont.)				
Impact AIR-MB-3: Operations at the Mission Bay campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (SU)	L+	L	L	E
Impact AIR-MB-4: Operations at the Mission Bay campus site under the 2014 LRDP would expose persons (new receptors) to substantial levels of TACs, which may lead to adverse health effects. (LSM)	L+	L	E	E
Impact AIR-MZ-1: Implementation of the 2014 LRDP at the Mount Zion campus site would result in increased emissions of criteria air pollutants during demolition and construction activities. (LSM)	L+	L+	E	E
Impact AIR-MZ-3: Operations at the Mount Zion campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (LSM)	L+	L	E	E
Impact AIR-MC-1: Implementation of the 2014 LRDP at the Mission Center campus site would result in increased emissions of criteria air pollutants. (LSM)	L+	L+	E	E
Impact AIR-MC-3: Operations at the Mission Center campus site under the 2014 LRDP would result in increased emissions of criteria air pollutants. (LSM)	L	L	E	E
Biological Resources				
Impact BIO-LRDP-4: Implementation of the 2014 LRDP would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (LSM)	L+	L	L	E
Impact BIO-PH-1: Demolition and construction activities at the Parnassus Heights campus site could have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or	L+	L	L	E

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. (LSM)				
Impact BIO-PH-2: Demolition and construction activities at the Parnassus Heights campus site could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (LSM)	L+	L	L	E
Cultural Resources				
Impact CUL-LRDP-1: Implementation of the 2014 LDP would result in a substantial adverse change in the significance of historical resources as defined in CEQA Guidelines Section 15064.5. (PS)	L+	L	L	E
Impact CUL-LRDP-2: Implementation of the 2014 LRDP could result in demolition of historical resources as defined in CEQA Guidelines Section 15064.5.	L+	E	E	L+
Cultural Resources (cont.)				
Impact CUL-LRDP-3: Implementation of the 2014 LRDP could result in a substantial adverse change to archaeological resources. (LSM)	L+	L	L	E
Impact CUL-LRDP-4: Implementation of the 2014 LRDP could result in a substantial adverse change to paleontological resources. (LSM)	L+	L	L	E
Impact CUL-LRDP-5: Implementation of the 2014 LRDP could result in a substantial adverse change to human remains. (LSM)	L+	L	L	E
Impact CUL-PH-2: Demolition of the Surge building at the Parnassus Heights campus site would result in a substantial adverse change in the significance of an historical resource. (SU)	L+	E	E	L+
Impact CUL-PH-4: Seismic rehabilitation of the historic Faculty Alumni House could result in significant impact to this historic structure if not completed in accordance with the Secretary of the Interior's Standards. (LSM)	L+	E	E	E
Impact CUL-PH-5: Renovation of Saunders Court at the Parnassus Heights campus site could alter the features and spaces which convey its historic significance as a cultural landscape, which could result in a substantial adverse change in the significance of historical resources. (LSM)	L+	E	E	E
Impact CUL-PH-6: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to archaeological resources. (LSM)	L+	L+	L+	E
Impact CUL-PH-7: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse	L+	L+	L+	E

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
changes to paleontological resources. (LSM)				
Impact CUL-PH-8: Construction of the New Hospital Addition at the Parnassus Heights campus site could cause substantial adverse changes to human remains. (LSM)	L+	L+	L+	E
Impact CUL-PH-9: Infrastructure and utilities improvements proposed at the Parnassus Heights campus site, including the Parnassus Avenue Streetscape Plan, would not result in a substantial adverse change in the significance of historical resources. (LSM)	L+	E	E	E
Impact CUL-MB-1: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to archaeological resources. (LSM)	L+	L	L	E
Impact CUL-MB-2: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to paleontological resources. (LSM)	L+	L	L	E
Cultural Resources (cont.)				
Impact CUL-MB-3: Construction of 2014 LRDP proposals at the Mission Bay campus site could cause substantial adverse changes to human remains. (LSM)	L+	L	L	E
Impact CUL-MZ-1: Demolition of the Hellman building at the Mount Zion campus site would result in a substantial adverse change in the significance of an historical resource. (SU)	L+	E	E	L+
Impact CUL-MZ-4: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to archaeological resources. (LSM)	L+	L+	E	E
Impact CUL-MZ-5: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to paleontological resources. (LSM)	L+	L+	E	E
Impact CUL-MZ-6: Construction of the proposed office/research building at the Mount Zion campus site could cause substantial adverse changes to human remains. (LSM)	L+	L+	E	E
Impact CUL-MC-2: Construction of the proposed office building and parking structure at the Mission Center campus site could cause substantial adverse changes to archaeological resources. (LSM)	L+	L+	E	E
Impact CUL-MC-3: Construction of the proposed office building and parking structure at the Mission Center campus site could cause substantial adverse changes to paleontological resources. (LSM)	L+	L+	E	E
Impact CUL-MC-4: Construction of the proposed office building and parking structure at the Mission Center campus site could cause substantial adverse changes to human	L+	L+	E	E

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
remains. (LSM)				
Greenhouse Gas Emissions				
Impact GHG-LRDP-1: Implementation of the 2014 LRDP would result in an increase in construction-related greenhouse gas emissions. (LSM)	L+	L	L	E
Impact GHG-PH-1: Development at the Parnassus Heights campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (LSM)	L+	L+	L	E
Impact GHG-MB-1: Development at the Mission Bay campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (LSM)	L+	L	L	E
Impact GHG-MZ-1: Development at the Mount Zion campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (LSM)	L+	L+	E	E
Greenhouse Gas Emissions (cont.)				
Impact GHG-MC-1: Development at the Mission Center campus site under the 2014 LRDP would result in an increase in construction-related GHG emissions. (LSM)	L+	L+	E	E
Hazards and Hazardous Materials				
Impact HAZ-LRDP-1: Implementation of the 2014 LRDP could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (LSM)	L+	L	E	E
Impact HAZ-LRDP-3: 2014 LRDP proposals are located on campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public. (LSM)	L+	L	E	E
Impact HAZ-PH-1: Implementation of the 2014 LRDP at the Parnassus Heights campus site could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (LSM)	L+	L+	L	E
Impact HAZ-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (LSM)	L+	L	L	E
Impact HAZ-MB-3: 2014 LRDP proposals located at the Mission Bay campus sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create	L+	L	L	E

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
a significant hazard to the public. (LSM)				
Impact HAZ-MZ-1: Implementation of the 2014 LRDP could create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions. (LSM)	L+	L	E	E
Impact HAZ-MC-2: 2014 LRDP proposals located at Mission Center campus sites are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public. (LSM)	L+	L+	E	E
Hydrology				
Impact HYD-MB-1: Implementation of the 2014 LRDP at the Mission Bay campus site could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality. (LSM)	L	E	E	E
Noise				
Impact NOI-LRDP-1: Implementation of the 2014 LRDP would result in increased ambient noise levels during demolition and construction activities. (LSM)	L+	L	L	E
Impact NOI-LRDP-2: Implementation of the 2014 LRDP would result in increased ambient noise levels during pile-driving activities. (SU)	L+	L	L	E
Impact NOI-PH-1: Demolition activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in a temporary increase in ambient noise levels. (SU)	L+	L+	L+	E
Impact NOI-PH-2: Construction activities proposed under the 2014 LRDP at the Parnassus Heights campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (SU)	L+	L	L	E
Impact NOI-MB-1: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (SU)	L+	L	L	E
Impact NOI-MB-2: Construction activities proposed under the 2014 LRDP at the Mission Bay campus site would result in increases in ambient noise levels during pile-driving activities. (SU)	L+	L+	E	E
Impact NOI-MZ-1: Demolition activities proposed under the 2014 LRDP at the Mount Zion campus site would result in a temporary increase in ambient noise levels. (SU)	L+	L+	E	E
Impact NOI-MZ-2: Construction activities proposed under the 2014 LRDP at the Mount Zion campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (SU)	L+	L+	L	L

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
Impact NOI-MC-1: Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels over the term of the exterior construction activities. (LSM)	L+	L+	E	E
Impact NOI-MC-2: Construction activities proposed under the 2014 LRDP at the Mission Center campus site would result in increases in ambient noise levels during pile-driving activities. (SU)	L+	L+	E	E
Transportation and Traffic				
Impact TRAF-LRDP-2: Implementation of the 2014 LRDP could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities. (LSM)	L+	L	L	E
Transportation and Traffic (cont.)				
Impact TRAF-LRDP-3: Implementation of the 2014 LRDP would result in temporary increases in traffic volumes on roadways in the vicinity of each of the four campus sites during demolition and construction activities. (LSM)	L+	L	L	E
Impact TRAF-PH-1: Implementation of the 2014 LRDP on the Parnassus Heights campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities. (LSM)	L+	L+	L+	E
Impact TRAF-MB-1: Implementation of the 2014 LRDP on the Mission Bay campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during construction activities. (LSM)	L+	L	L	E
Impact TRAF-MZ-1: Implementation of the 2014 LRDP on the Mount Zion campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during demolition and construction activities. (LSM)	L+	L+	E	E
Impact TRAF-MC-1: Implementation of the 2014 LRDP on the Mission Center campus site could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions during construction activities. (LSM)	L+	L+	E	E
Impact TRAF-MB-C-1: Implementation of the 2014 LRDP on the Mission Bay campus site in combination with foreseeable 2040 traffic volumes would increase traffic at intersections on the adjacent roadway network. (SU)	L+	L	L	E

Significant Impacts (before mitigation)	Alternative 1: No Project-No Development	Alternative 2: No Project-Development Under Existing LRDP	Alternative 3: Reduced Program	Alternative 4: No Demolition of Historical Resources
Impact TRAF-MB-C-2: Implementation of the 2014 LRDP with the LRDP Variant on the Mission Bay campus site in combination with foreseeable 2040 traffic volumes would increase traffic at the Sixteenth/Seventh Street and the Mariposa Street/Third Street intersections on the adjacent roadway network. (LSM)	L+	L	L	E
Utilities and Service Systems				
Impact UTIL-MB-2: There may be impacts related to wastewater infrastructure as a result of 2014 LRDP development at the Mission Bay campus site. (SU)	E	E	E	E

11.5 Alternatives Withdrawn from Consideration

No other alternatives were proposed for consideration during the scoping process.

In the early stages of the LRDP planning process, UCSF considered additional research and office space at the Mission Bay campus site to meet considerable needs for space in these areas, but no additional housing was contemplated beyond the existing Block 20 campus housing complex. As the plan evolved, additional housing was proposed to advance UCSF's housing goals, to reduce travel to and from the campus site, and to further the jobs-housing balance in San Francisco. In recognition of the importance of on-campus housing, UCSF is no longer considering the prior iteration of the plan that included only additional research and office space on the Mission Bay campus site, which would have resulted in greater traffic and parking impacts compared to the current mix of uses proposed under the LRDP.

11.6 Environmentally Superior Alternative

Of the alternatives assessed in this EIR, the environmentally superior alternative, that is the alternative with the least environmental impact, is the No Project–No Development Alternative. Section 15126.6(e)(2) of the CEQA Guidelines directs that if the environmentally superior alternative is the no project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Other than the No Project Alternative, the No Project—Development Under Existing LRDP is the environmentally superior alternative, because it would reduce the significant and unavoidable impacts associated with the 2014 LRDP more than would the other alternatives. Significant and unavoidable Air Quality, Noise, and Traffic impacts related to construction and operation would be reduced in magnitude, even if not necessarily reduced to less than significant levels.

CHAPTER 12
Report Preparation

12.1 Report Authors

Lead Agency

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APPENDIX A
Initial Study and Notice of Preparation

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September 24, 2013

INITIAL STUDY FOR UCSF LONG RANGE DEVELOPMENT PLAN ENVIRONMENTAL IMPACT REPORT

This is the Initial Study for the University of California, San Francisco (UC San Francisco or UCSF) Long Range Development Plan (LRDP) Environmental Impact Report (EIR). In compliance with the State and University of California guidelines for implementation of the California Environmental Quality Act (CEQA), The Regents of the University of California will be the Lead Agency and UCSF will prepare an EIR for the project identified above.

UCSF is preparing a new LRDP to guide future growth and development over a 20+ year planning horizon through the year 2035. The LRDP plans for projected campus growth of approximately 2.76 million gross square feet on existing campus sites (including Parnassus Heights, Mission Bay, and Mount Zion) to accommodate roughly 500 more students and 10,000 more employees. So far, six community workshops have been held at UCSF's campus sites. The complete project description, location, and the potential environmental effects are discussed in the Initial Study.

The purpose of the Initial Study is to: (1) inform responsible agencies and the public of the nature of the proposed project and its location, (2) identify impacts that will clearly not result or will clearly be less than significant and therefore will not be discussed in the EIR, and (3) provide a general description of the environmental topics, scope and content of the issues intended to be addressed in the EIR.

The Notice of Preparation/Initial Study is available at www.ucsf.edu/LRDP. It will be circulated for public review and comment for at least 30 days from September 24, 2013 through October 29, 2013 **[Note: the review period has been extended and will end November 12, 2013 at 5 p.m.]** Public comments must be received no later than **November 12, 2013** and should be sent to the attention of Ms. Diane Wong at the address noted below. Public comments can also be submitted via email to the following address: **EIR@planning.ucsf.edu**. Email responses must be received no later than **November 12, 2013**.

UCSF will hold a public EIR scoping meeting on October 28, 2013. The meeting will be held at the UCSF Parnassus Heights campus site, Millberry Union, 500 Parnassus Avenue, beginning at 7:00 PM.

The EIR scoping meeting provides an opportunity for the community to provide verbal feedback on the Initial Study. This allows UCSF to learn about potential concerns early, as well as further define the issues, feasible alternatives, and potential mitigation measures that may warrant in-depth analysis in the environmental review process.

(continued on next page)

Thank you for your interest in this project.

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UCSF Long Range Development Plan

UC San Francisco is preparing a new Long Range Development Plan (LRDP) to guide future growth and development over a 20+ year planning horizon through the year 2035. The LRDP plans for projected campus growth of approximately 2.76 million gross square feet on existing campus sites (including Mission Bay, Mount Zion, and Parnassus) to accommodate roughly 500 more students and 10,000 more employees. So far, six community workshops have been held at UCSF's campus sites.

Some important features of the LRDP include proposals to:

- accommodate growth in clinical care, research programs and student enrollment,
- address seismically compromised buildings,
- optimize the use of existing campus sites, and
- continue to work with neighbors to address potential community concerns that may arise as a result of UCSF's physical development

EIR Scoping Meeting

You are invited to an Environmental Impact Report (EIR) scoping meeting for the UCSF LRDP. This meeting provides an opportunity for the community to discuss the scope and content of the environmental information they expect to see included in the Draft EIR. This allows UCSF to learn about potential concerns early, as well as further define the issues, feasible alternatives and potential mitigation measures that may warrant in-depth analysis in the environmental review process. This public meeting is not required by law.

When: Monday, October 28, 2013
7:00 PM

Where: UCSF Parnassus Campus
Millberry Union
500 Parnassus Avenue

UCSF Parnassus Campus is on MUNI lines 6, 43, 66, N-Judah. If you must drive, please park in the UCSF public parking garage for $1.75 (with validation).

Initial Study

An Initial Study that includes a project description will be available online starting September 24, 2013 at http://campusplanning.ucsf.edu. It also identifies the scope and content of the environmental information that will be included in the Draft EIR. You can obtain a paper or CD copy of the Initial Study by calling 415.476.2911. To give written feedback on the Initial Study, please write to Diane Wong, UCSF Campus Planning, Box 0286, San Francisco, CA 94143 or email her at EIR@planning.UCSF.edu by October 29, 2013.

The Draft EIR is expected to be published in April 2014. If you would like to be notified about the publication of the Draft EIR, or if you would like to attend the public hearing, please contact us at community@cgr.ucsf.edu or at 415.476.3206.

UCSF fully ascribes to the Americans with Disabilities Act. If at any time you feel you have a need for accommodation, please contact UCSF Community & Government Relations at 415.476.3206 or community@cgr.ucsf.edu with your suggested accommodation.

For more information:
community@cgr.ucsf.edu
415.476.3206
www.ucsf.edu/lrdp

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Campus Planning

Financial and Administrative Services

INITIAL STUDY

UCSF 2014 LONG RANGE DEVELOPMENT PLAN

Lead Agency
The University of California

Prepared by
UCSF Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

September 24, 2013

University of California
San Francisco

UCSF

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September 24, 2013

INITIAL STUDY FOR UCSF LONG RANGE DEVELOPMENT PLAN ENVIRONMENTAL IMPACT REPORT

This is the Initial Study for the University of California, San Francisco (UC San Francisco or UCSF) Long Range Development Plan (LRDP) Environmental Impact Report (EIR). In compliance with the State and University of California guidelines for implementation of the California Environmental Quality Act (CEQA), The Regents of the University of California will be the Lead Agency and UCSF will prepare an EIR for the project identified above.

UCSF is preparing a new LRDP to guide future growth and development over a 20+ year planning horizon through the year 2035. The LRDP plans for projected campus growth of approximately 2.76 million gross square feet on existing campus sites (including Parnassus Heights, Mission Bay, and Mount Zion) to accommodate roughly 500 more students and 10,000 more employees. So far, six community workshops have been held at UCSF's campus sites. The complete project description, location, and the potential environmental effects are discussed in the Initial Study.

The purpose of the Initial Study is to: (1) inform responsible agencies and the public of the nature of the proposed project and its location, (2) identify impacts that will clearly not result or will clearly be less than significant and therefore will not be discussed in the EIR, and (3) provide a general description of the environmental topics, scope and content of the issues intended to be addressed in the EIR.

The Notice of Preparation/Initial Study is available at www.ucsf.edu/LRDP. It will be circulated for public review and comment for at least 30 days from September 24, 2013 through October 29, 2013 **[Note: the review period has been extended and will end November 12, 2013 at 5 p.m.]** Public comments must be received no later than **November 12, 2013** and should be sent to the attention of Ms. Diane Wong at the address noted below. Public comments can also be submitted via email to the following address: **EIR@planning.ucsf.edu**. Email responses must be received no later than **November 12, 2013**.

UCSF will hold a public EIR scoping meeting on October 28, 2013. The meeting will be held at the UCSF Parnassus Heights campus site, Millberry Union, 500 Parnassus Avenue, beginning at 7:00 PM.

The EIR scoping meeting provides an opportunity for the community to provide verbal feedback on the Initial Study. This allows UCSF to learn about potential concerns early, as well as further define the issues, feasible alternatives, and potential mitigation measures that may warrant in-depth analysis in the environmental review process.

(continued on next page)

Thank you for your interest in this project.

Diane Wong, Environmental Coordinator
UCSF Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286
(415) 502-5952
EIR@planning.ucsf.edu

UCSF 2014 LONG RANGE DEVELOPMENT PLAN

Initial Study

Prepared for
UCSF Campus Planning

September 24, 2013

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1. Project Information

1. Project Title:	UCSF 2014 Long Range Development Plan
2. Lead Agency Name and Address:	The Regents of the University of California 1111 Franklin Street Oakland, California 94607
3. Contact Person and Phone Number:	Diane Wong Principal Planner/Environmental Coordinator UCSF Campus Planning (415) 502-5952 Dwong@planning.ucsf.edu EIR@planning.ucsf.edu
4. Project Location:	UCSF Campus (See Figure 1)
5. Project Sponsor's Name and Address:	See contact person listed above.
6. Custodian of the Administrative Record for this Project:	Same as above.

2. Project Description

2.1 Introduction

The University of California, San Francisco (UC San Francisco or UCSF) is one of ten campuses in the University of California (UC) system, and is the only UC campus devoted solely to the health sciences. UCSF's mission is to advance health worldwide through innovative health sciences education, research and patient care.

In support of its mission, UCSF is preparing a new Long Range Development Plan (LRDP) to guide future campus growth and development over a 20+ year planning horizon through the year 2035. UCSF currently occupies 8.25 million gross square feet (gsf) in owned and leased space in San Francisco, and another 1.13 million gsf is under construction. The LRDP plans for projected campus growth of approximately 2.76 million gross square feet (gsf) by 2035, accommodating approximately an additional 500 students and 10,000 employees in a total population increase of about 14,200 on any given day, including patients and visitors. The LRDP will develop land use maps, or "functional zone" maps for each major campus site, that will guide capital construction and infrastructure development to accommodate a building program for campus growth. Some important features of the LRDP include plans to:

- accommodate growth in clinical care, research programs and student enrollment,
- address seismically compromised buildings,
- optimize the use of existing campus sites and existing space,
- increase on-campus housing,
- consolidate leased sites,
- continue to expand alternative transportation options,
- continue to work with neighbors to address potential community concerns that may arise as a result of UCSF's physical development,
- improve usable open space on campus, as well as enhance the public realm (i.e. public streets/sidewalks) adjacent to campus, and
- limit greenhouse gas emissions through a comprehensive greenhouse gas reduction strategy.

Program Level and Project Level Analysis

Pursuant to the California Environmental Quality Act (CEQA), a program environmental impact report (EIR) is prepared on a series of actions that can be characterized as one large project, such as for an LRDP. A program EIR generally establishes a framework for tiered or project-level environmental documents that are prepared in accordance with the overall program (see CEQA Guidelines Section 15168(a)). An LRDP is defined by statute (Public Resources Code Section 21080.09) as a "physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education." UCSF will

prepare an EIR as required by Public Resources Code Section 21080.09 that will evaluate the environmental effects of growth under the proposed LRDP. The LRDP EIR will be a program EIR that will be used by the Board of Regents of the University of California (The Regents) to evaluate the environmental implications of adopting the proposed LRDP. Once certified, the EIR will also be used to tier subsequent environmental analyses for future UCSF development projects (CEQA Guidelines Section 15152). Proposed UCSF development projects would then be reviewed in light of the LRDP EIR to determine the appropriate level of additional environmental review before implementation.

In addition to analyzing at a program level proposed campus growth under the new LRDP, the LRPD EIR will analyze at a project level a number of specific and foreseeable development proposals. These proposals are to be analyzed in the EIR in sufficient detail to permit project approval and implementation following certification of the EIR. The University anticipates seeking project approval for some projects in the near-term, within several years of EIR certification, while others will occur at a later date but are included because there is sufficient information about the proposals for project-level analyses in the EIR. Project approvals for these will be sought when funding becomes available and project implementation is logistically feasible. Proposed projects are discussed in detail in Section 2.7, Campus Site Locations and Proposed Physical Development Plans.

Purpose of the Initial Study

Pursuant to Section 15063 of the CEQA Guidelines, an Initial Study is a preliminary environmental analysis that may be used by the lead agency to focus the EIR on environmental effects resulting from the proposed project that may be significant. Accordingly, the purpose of this initial study is to analyze the LRDP and individually proposed projects to identify environmental impacts that are potentially significant and therefore require detailed study in the EIR. Potential environmental impacts determined to be less than significant require no further study in the EIR.

The CEQA Guidelines require that an Initial Study contain a project description, a description of environmental setting, an identification of environmental effects by checklist or other similar form, an explanation of environmental effects, a discussion of mitigation for significant environmental effects, an evaluation of the project's consistency with existing, applicable land use controls, and the names of the persons who prepared the study.

2.2 LRDP Background

Each UC campus is required to periodically prepare a LRDP. This LRDP is a comprehensive policy document that articulates a long-term physical development strategy for achieving UCSF's academic, research and clinical missions through the year 2035. It provides objectives and planning guidelines for making decisions regarding future facilities to accommodate new program initiatives and other needs over the next 20 years. While the LRDP does not commit UCSF to implement all elements of the LRDP, future development projects will need to be in general conformity with the vision set forth in the LRDP.

The LRDP also serves as an opportunity for UCSF to assess its current status and establish goals for the future; as a forum for the discussion of issues of mutual concern between UCSF, the City and County of San Francisco and the communities surrounding UCSF's major campus sites; and as a report to The Regents on how UCSF proposes to physically change over time in terms of the amount and type of building space, campus-wide facilities and operations and improvements to campus open space and the public realm during the LRDP planning horizon.

When adopted by The Regents, this LRDP will replace UCSF's 1996 LRDP, as amended.

2.3 Campus and Context

UCSF is a multi-site campus with locations throughout the City and County of San Francisco, encompassing approximately 8.25 million gross square feet (gsf[1]). Its major academic and clinical sites are at Parnassus Heights, Mission Bay and Mount Zion, with a major presence at the City's San Francisco General Hospital (SFGH) site. **Figure 1** shows the main locations of UCSF owned and leased sites in San Francisco. UCSF has major hospital affiliation agreements at both SFGH and the San Francisco Veterans Affairs Medical Center (SFVAMC) where UCSF faculty practice and conduct research. While UCSF leases or otherwise occupies space in exchange for services at SFGH, UCSF does not lease or otherwise control any of the space at the SFVAMC. The remaining UCSF locations outside its major campus sites provide a variety of program space in buildings that are owned or leased by UCSF.

Unlike any other UC campus, UCSF has no large undergraduate student body, but only a small population of graduate and professional students exclusively in health science related fields. The four professional schools include Dentistry, Medicine, Nursing and Pharmacy. UCSF also offers 28 interdisciplinary graduate degree and certification programs through the Graduate Division. Research programs include biological, clinical, social/behavioral and population sciences.

UCSF's clinical enterprise consists of the Medical Center with inpatient facilities at Parnassus Heights and Mount Zion and by 2015, at Mission Bay. There are outpatient clinics at all three of these campus sites but the outpatient hub would be located at Mount Zion by 2015 when existing Mount Zion inpatient uses will be relocated to Mission Bay. Support facilities are designed for staff, students and visitors, and include campus housing, retail, child care, recreation and fitness facilities and parking.

As an urban institution with multiple campus sites, UCSF is located in neighborhoods of highly varied building use, density and design. UCSF facilities and property adjoin residential, neighborhood commercial, research and development, industrial and mixed use districts. All the campus sites lie within the urban framework of the city and are served by the city's street network in well-established neighborhoods. The surrounding urban character deeply influences how UCSF buildings and open spaces respond to their context and contribute to the public realm.

[1] Gross square footage is a UC facilities term denoting the sum of all floor areas, finished and unfinished, on all floors of an enclosed structure. It excludes spaces such as attics without flooring, mezzanines, exterior courts, and balconies.

SOURCE: UCSF

UCSF Long Range Development Plan Initial Study

Figure 1
UCSF Main Locations

In addition, UCSF influences and is influenced by the city in a number of other ways. For example, UCSF maintains a network of shuttles that use city streets to transport faculty, staff, students, patients and patient family members and formal guests among the campus sites. The amount of parking and housing provided on campus sites affects off-site traffic and off-site housing demand. Many of UCSF's facilities, such as recreation and fitness, child care and conference centers, as well as all of its outdoor areas, are available for public use. Consequently, UCSF works closely with both neighbors and city staff when planning development.

2.4 LRDP Objectives and Principles

A primary focus of this LRDP is to address Senate Bill 1953 (SB 1953), which mandates that all inpatient facilities in the State of California meet more stringent seismic regulations by 2030. In 2015, the new Medical Center at Mission Bay will be operational. This facility will provide 289 inpatient beds for women, children and cancer patients, along with outpatient and support space. The opening of the new medical center will provide opportunities at the Parnassus Heights and Mount Zion campus sites to re-occupy vacated space (or "backfill") after programs and occupants are relocated to the Mission Bay campus site. Many of the highly complex adult clinical programs will remain at Parnassus Heights. Mount Zion will be developed into an ambulatory care center and outpatient hub. Both the Parnassus Heights and Mission Bay campus sites will provide inpatient, outpatient, research and administrative functions, as well as campus housing. All four professional schools will remain at Parnassus Heights. To meet the SB 1953 mandate at Parnassus Heights, UCSF proposes to decommission inpatient care in Moffitt Hospital by the 2030 deadline, build a new hospital addition to Long Hospital and reconfigure its inpatient and outpatient programs across the three major sites.

In the 1976 Regents' Resolution, a policy that was adopted to address environmental effects associated with development of the Parnassus Heights campus site, The Regents' designated the Mount Sutro Open Space Reserve as a permanent open space[2]; defined campus boundaries to prohibit further property acquisition (by purchase, condemnation or gift) and leasing of private residential properties outside this area by UCSF; directed that the houses acquired and occupied by UCSF on Third Avenue, Fifth Avenue, Parnassus Avenue, Irving Street and Kirkham Street be returned to residential use, and that some be sold; and adopted a limit on the amount of built space of 3.55 million gsf, commonly referred to as the "space ceiling", within the newly designated campus site boundaries. The space ceiling applies to all building space, including parking structures, but excludes residential uses in UCSF buildings on Third, Fourth, Fifth, and Parnassus Avenues and Kirkham and Irving Streets. The space ceiling was intended to limit environmental impacts such as traffic and parking impacts on the neighborhoods surrounding the Parnassus Heights campus site by limiting UCSF's square footage. Currently, Parnassus Heights contains approximately 3.84 million gsf of space, approximately 0.29 million gsf or 8.2% above the space ceiling limit. The 1976 LRDP incorporated the 1976 Regents' Resolution.

[2] The reserve on Mount Sutro was designated as open space for a 25-year period by The Regents in 1975. In the 1976 Regents' Resolution, The Regents increased the Mount Sutro Open Space Reserve from 52 acres to 58 acres and made the open space designation permanent. The 1996 LRDP updated the boundaries of the Reserve to reflect the results of a survey which found that area contained an additional three acres, for a total of 61 acres.

The 1976 Regents' Resolution also recognized the principle of limiting the average daily population at Parnassus Heights to 13,400 persons, for the purpose of limiting environmental effects associated with occupancy and use of the Parnassus Heights campus site. The 1982 LRDP emphasized the need to limit the use of the Parnassus Heights campus site to purely academic and clinical functions and to move most campus-wide administrative functions to other areas. The 1996 LRDP established a new goal to limit the average daily population to 16,000 persons. Currently, the average daily population at Parnassus Heights is estimated at 17,950 persons.

To support and achieve its missions, UCSF proposes to grow where growth can be reasonably accommodated at its currently owned sites: primarily at Mission Bay, to a limited extent at Mount Zion, and if needed, in a new building at Mission Center. While most of this growth is proposed to be accommodated in new buildings, a portion would be met through better utilization of existing space through implementation of a new UCSF-wide space policy[3], renovation of obsolete labs and repurposing of vacant and underutilized space. It is also envisioned that new space would be developed to accommodate a greater density of occupants than in the past for greater space efficiency and higher utilization.

UCSF has many old buildings that will require an enormous investment to fully comply with seismic and other life safety codes, extend the life of utility systems and make the buildings more energy efficient. Because of the extensive need to upgrade and replace infrastructure at UCSF facilities, another important objective of the LRDP is to prioritize these needs along with the construction of new buildings to provide space for growth.

UCSF also strives to improve overall efficiency and minimize operational costs via a consolidation strategy that involves, where practicable, reducing the number of building leases and campus sites. Consolidation will also help UCSF achieve its instructional, research, clinical, support and financial objectives. In some cases, it is necessary for UCSF to lease space in a particular geographic area of the City, (e.g., to provide a neighborhood clinic). However, opportunities will be sought to relocate and accommodate currently leased space into buildings owned by UCSF, and to co-locate owned space either on or near major sites in the near-term.

Finally, to help improve campus amenities, meet housing demand and reduce commute traffic, UCSF proposes additional campus housing at Parnassus Heights and Mission Bay where demand for housing is greatest. New housing at both sites would make it possible to realign students, postdoctoral scholars and faculty to live where they attend classes or work. Other campus facilities would be developed, including more child care space where it is most needed, indoor and outdoor recreation and fitness facilities, shuttle support facilities, retail and more and enhanced open space areas. As a part of the on-going LRDP planning process, the objectives listed below may be revised, as necessary, in the LRDP EIR.

[3] The Space Governance policy requires each academic and research unit to re-use vacated space within a limited period of time, or else the space may be re-assigned. The Space Governance and Principles can be viewed at http://policies.ucsf.edu/policy/600-24.

Overarching Objectives

- Optimize the use of existing campus sites (land and entitlements) and existing campus space through repurposing, renovation, densification and consolidation where appropriate; locate programs and activities at sites where they are suitable and compatible with UCSF's missions, and best foster collaboration, accommodate interdependent programs and reinforce academic and operational relationships.
- Meet the seismic requirements of SB 1953 and successive legislation by constructing and maintaining modern, seismically safe hospitals and facilities that that will remain operational in the event of a major earthquake.
- Plan new facilities and implement improvements to existing buildings to meet the UC Policy on Seismic Safety, to ensure a seismically safe environment for UCSF patient, visitors, physicians and staff.
- Maintain UCSF's prominent role as an educational, training and research institution for medical professionals providing health care, medical/surgical care, emergency/urgent care to San Francisco and surrounding communities.
- Facilitate growth in an environmentally responsible manner while reducing carbon emissions by implementing UCSF's greenhouse gas reduction plan to meet the goals of Assembly Bill 32 (AB32), the California Global Warming Solutions Act[4].
- Develop adequate facilities and transportation demand reduction policies to emphasize transportation alternatives that will lessen auto traffic in and around campus sites and to meet changing needs consistent with the City's Transit First policy.
- Continue to prioritize parking for patients and essential healthcare providers.
- Reduce the number of UCSF locations by consolidation of owned and leased sites.
- Address the need for campus housing for students, postdoctoral scholars, house staff and junior and incoming faculty at major campus sites by constructing an adequate number of new units while taking into account financial feasibility and physical site constraints.
- Provide amenities such as permanent childcare facilities, additional recreation and fitness facilities and improved outdoor areas to enhance the quality of campus life and the public realm.
- Continue to engage neighbors for feedback on development proposals to address potential community concerns that may arise as a result of UCSF's physical development.

Campus Site Specific Objectives

Parnassus Heights

- Maintain and enhance the Parnassus Heights campus site as the main center for didactic instruction to continue to promote excellence and leadership in health science education.

[4] UCSF is required to develop a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the California Global Warming Solutions Act of 2006 (AB32).

- Ensure that adequate space is provided to foster collaboration and to facilitate the inter-dependence and connectivity for operational efficiency and effectiveness for instruction, clinical, research and support uses in close physical proximity to each other.
- Ensure that the new hospital addition and Long Hospital are adequately supported and aligned with the instruction, research and tertiary care programs that remain at the Parnassus Heights campus site.
- Implement management, maintenance and risk reduction actions planned for the Mount Sutro Open Space Reserve to increase usability of the Reserve, improve safety for the people and property in the environs of the Reserve, minimize wildfire and tree hazards and promote a healthier forest.

Mission Bay

- Continue UCSF's commitment to excellence, innovation and collaboration to grow and expand the research campus at Mission Bay and to support the new Medical Center at Mission Bay.
- Strategically expand the existing research campus at Mission Bay while increasing efficiency by aligning and locating interdependent research and clinical teams and themes at Mission Bay campus site.
- Consolidate specialized services associated with Women's, Children's and Cancer services at the new Medical Center at Mission Bay, scheduled to open in 2015.

Mount Zion

- Convert the Mount Zion campus site into an outpatient ambulatory-care center to meet existing and future projected inpatient and outpatient needs by expanding specialized services.
- Develop a new facility that can accommodate future program space need of up to approximately 257,000 gsf on the main block.

Other Objectives

- Meet UCSF's instructional and clinical missions while continuing to provide economically viable development and programs.
- Design projects that are compatible with neighborhood aesthetics and scale to the extent feasible.

2.5 Projected Growth

As explained in detail below, this LRDP would provide for an additional 2.76 million gsf of space through 2035 if all the planned capacity were to be developed within that time frame.

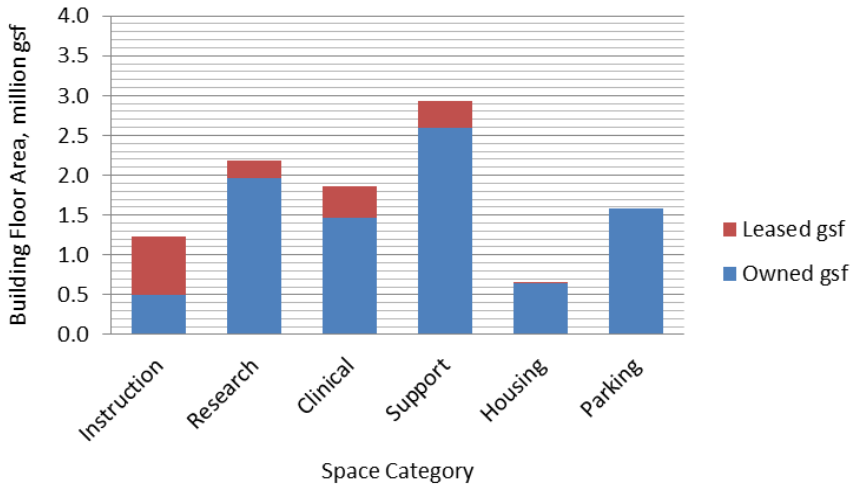
The LRDP is intended to serve as a general guide to the physical development of the campus. Except for the proposed development projects described later in this Project Description, the LRDP does not propose a commitment to any specific project, construction schedule or funding priority.

Existing Space

UCSF currently occupies a total of approximately 8.25 million gsf in owned and leased space at all of its campus sites in San Francisco, excluding approximately 1.58 million gsf in structured parking. The space is used for various institutional uses within the following major categories:

- **Instruction**, including classrooms, teaching laboratories, seminar rooms and academic offices
- **Research**, including research conducted in laboratories, offices and support space
- **Clinical**, including space for services provided to patients in hospitals or clinics and for functions that directly support patient care such as administrative offices and conference rooms
- **Support**, consisting of the following types of uses:
  - *Academic Support*, including support space such as the library and animal care
  - *Academic and Campus Administration*, including all administrative space at the department, school and campus levels: deans' and directors' offices, conference rooms, copying facilities as well as non-academic support space such as police, personnel and accounting offices
  - *Campus Community*, including campus amenities such as recreation, fitness, child care, conference centers, food service and retail
  - *Logistics*, including space devoted to the delivery of materials, and physical plant space such as machine shops, service yards, laundry services, utilities and storage
- **Housing**, including residential facilities for students, postdoctoral scholars, house staff and faculty

Figure 2 shows the allocation of all existing UCSF-owned and leased space at all sites in San Francisco among these major space categories. As can be seen in Figure 2, there are substantial amounts of support, research and clinical space, with the remaining space divided roughly equally between instruction and housing.



SOURCE: UCSF, Jan. 2011

Figure 2
Existing Space Inventory at All Sites (September 2013)

Buildings Under Construction

In addition to UCSF's approximately 8.25 million gsf in owned and leased space at all sites in San Francisco, new construction totaling approximately 1.13 million gsf and consisting of the Phase 1 Medical Center and Mission Hall at the Mission Bay campus site is underway and scheduled for completion in 2015.

Projected Need for Additional Space

UCSF's projected need for additional space through the LRDP horizon of 2035 is 2.43 million gsf in addition to the buildings currently under construction. The amount of instruction, clinical, research and support space that is expected to be needed and can be financially supported through 2035 is described below. The breakdown of the types of space needed across all sites is presented and discussed by major space category.

The 2.76 million gsf of additional capacity under the LRDP exceeds the projected 2.43 million gsf need for additional space in order to allow for some degree of campus growth to meet needs that may not be foreseeable at this time, given the 20+ year horizon of the LRDP. This is explained in greater detail below under "Total Space at LRDP Buildout."

Instruction

The projected need for 109,600 gsf of instruction space is based on expected growth in student enrollment and the University's financial ability to renovate academic space to accommodate the increase in the number of students.

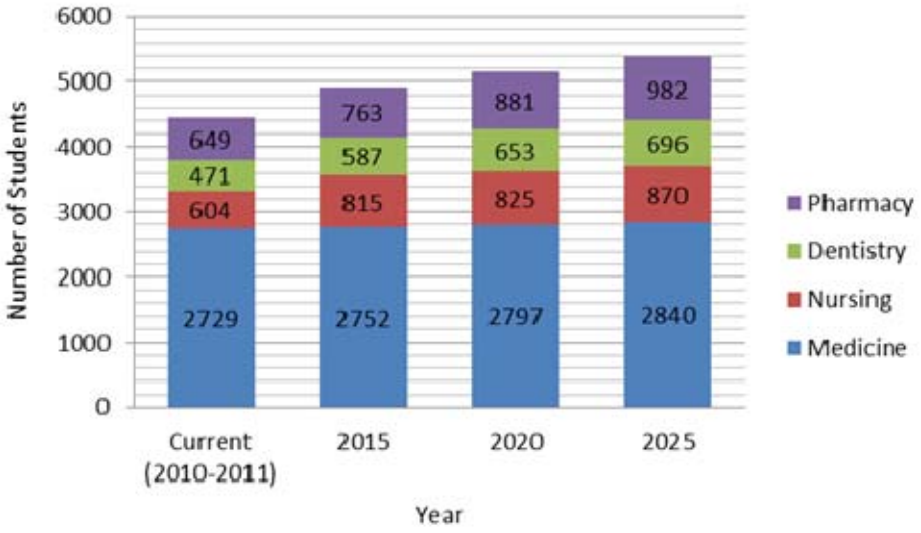
Figure 3 illustrates the number of students enrolled in each of the four UCSF schools[5] between 2011 and 2025, the final year for which projections are currently available. A total increase of 21% in enrollment is expected by 2025, with the smallest increase in enrollment occurring for the School of Medicine at 4% and the largest for the School of Pharmacy with a 53% increase in enrollment. For purposes of the LRDP, it is assumed that enrollment after 2025 will remain relatively constant because enrollment projections beyond 2025 would be highly speculative.

Research

The projected need in 2013 for additional research space[6] is 626,000 gsf. It is assumed that research space need would be met in existing facilities through 2021. Between 2021 and 2030, an annual growth rate of 2.5% in research space need is assumed. Due to the uncertainty in funding, and due to industry trends that could affect research space needs and configurations, it is too speculative to assume additional space or faculty growth beyond 2030.

5 SOURCE: UCSF Budget & Resource Management, January 2011. Graduate Division enrollment projections are included within the schools totals.

6 Research space does not include 18,000 gsf of research support functions and 79,200 gsf for animal care space that are included in the academic support category.



SOURCE: UCSF, Jan. 2011

Figure 3
Existing and Projected Enrollment

Clinical

Driving the need for additional clinical space, the inpatient need is expected to increase by 23% by 2035. This projection is based on the current adult patient average daily census and staff estimates for growth in adult services and cancer programs. It reflects plans to backfill space vacated by moves to Mission Bay in Moffitt Long Hospital at Parnassus Heights and the hospital at Mount Zion after the new Medical Center at Mission Bay opens in early 2015, as well as in the new hospital addition planned at Parnassus Heights by 2030. Clinical space growth is expected to be highest in the near term with the opening of the Medical Center at Mission Bay, followed by less growth thereafter with the construction of the new hospital addition at Parnassus Heights. Between 2030 and 2035, the inpatient average daily census is projected to grow by about 4% and would be accommodated in the new hospital addition at Parnassus Heights and the Medical Center at Mission Bay. Outpatient volume is expected to grow by 72% by 2035.[7] Including both inpatient and outpatient space, the total clinical space[8] need is projected to be 773,000 gsf by 2035.

7 This projection is based on compound annual growth rates of 3% through 2020, 2% from 2021 to 30 and 1% from 2031 to 2035.

8 Clinical space includes 308,000 gsf of new inpatient space at Parnassus Heights, 172,700 gsf of new outpatient space at Parnassus Heights and Mount Zion, and 169,300 gsf of new academic office space at Parnassus Heights (150,100 gsf in UC Hall and CSB) and Mount Zion (19,200 gsf). Not included in Clinical space are office and outpatient space need at Mission Bay that will be accommodated in Mission Hall and in the Medical Center outpatient building to be built by 2015 and 2020, respectively.

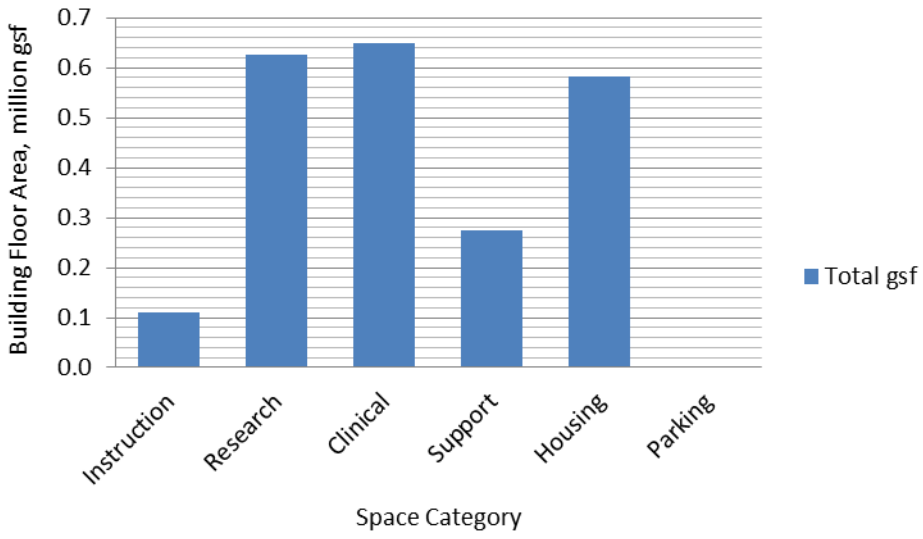
Support

Support space need is projected to be about 284,300 gsf. This growth reflects plans to expand child care, retail, recreation and fitness and conference space.[9]

Housing

The projected growth of 637,200 gsf for housing is based on the potential capacity for new housing at Mission Bay and non-residential uses that could be converted to housing at Parnassus Heights.

Figure 4 summarizes, by space category, the additional 2.43 million gsf projected space need in this LRDP. Although a major portion of the projected space need would be accommodated in new buildings on campus sites or in new off-site leases, some of it would be met through a combination of better utilization of existing vacant or underutilized space, converting existing space to other uses to meet changing priorities (e.g., converting office space at Parnassus Heights to housing and backfilling Moffitt Hospital after 2030 with hospital support and other uses), or consolidating functions or leases.



SOURCE: UCSF, 2013

Figure 4
UCSF Projected Additional Space Need by Major Category in 2035 (GSF)

[9] Some of this space need was determined by applying multipliers to base space needs (e.g., research), or by assuming a constant ratio to the amount of existing space (e.g., logistics).

Total Space at LRDP Buildout

As noted above, UCSF's projected need for additional space through the LRDP horizon is 2.43 million gsf in addition to the 1.13 million gsf of building space currently under construction. The projects identified in the LRDP would provide up to 2.76 million gsf at LRDP buildout. Although a major portion of the projected space need would be accommodated in new buildings on campus sites, some of it would be met through a combination of better utilization of existing vacant or underutilized space, reinvestment in existing sites, converting existing space to other uses to meet changing priorities (e.g., converting office space at the Parnassus Heights campus site to housing and backfilling Moffitt Hospital after 2030 with hospital support and other uses), or consolidating functions or leases.

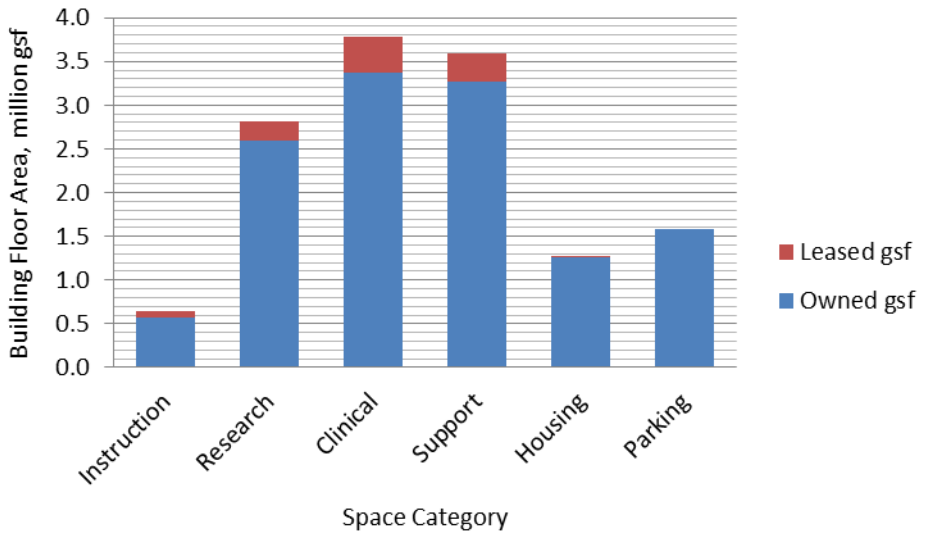
If all projects in the LRDP are implemented, total UCSF owned and leased space across all UCSF sites would be about 12.14 million gsf by 2035, an increase of about 3.90 million gsf over 2013. Of the 3.90 million gsf, 1.13 million gsf of building space is under construction, therefore growth under the LRDP by 2035 would be 2.76 million gsf. The overall space planned through 2035 exceeds the projected space need because the following assumptions are included in the total space:

- The total owned space includes the Phase 2 Medical Center at Mission Bay, which was addressed in Amendment #3 to the 1996 LRDP. While it is not planned to be built until after 2035, it is included in this EIR for a conservative analysis.

- While UCSF's near-term strategy is to consolidate leases into owned space to improve operational efficiency and to reduce operational costs, for the purposes of the LRDP and the EIR analysis, it is assumed that UCSF's total lease portfolio would remain at about one million gsf over the LRDP planning horizon. This will account for fluctuations that will likely occur depending on a variety of factors, which could include community health care needs, growth and expansion in clinical and research programs and other demands and constraints.

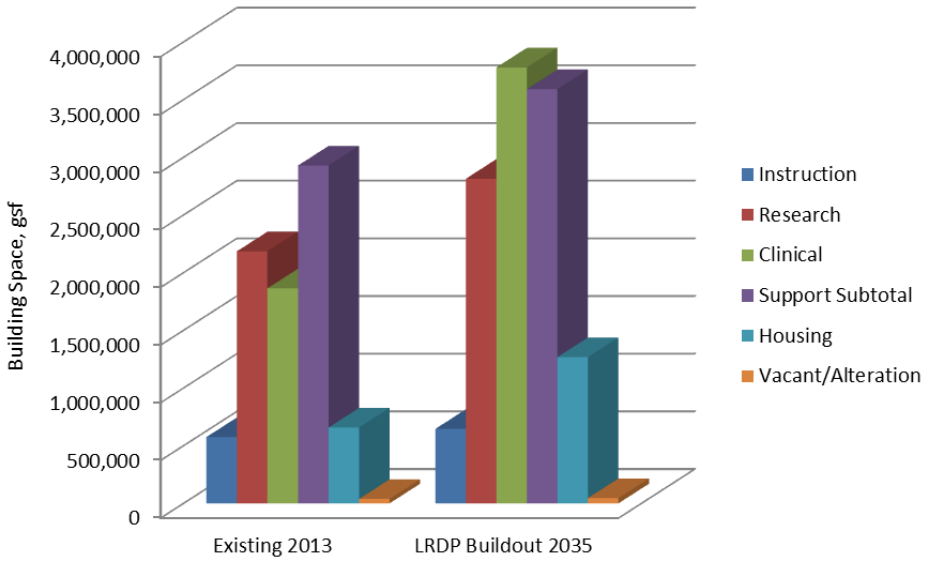
- Maximum development options were studied and developed at the Mission Center and Mount Zion campus sites. It was determined that by maximizing development capacity at these campus sites, a total of 357,300 gsf of new medical office and/or research building(s) could be developed to accommodate future programs that have not yet been identified with needs for geographic proximity to those locations. For purposes of the EIR, these maximum development options will be analyzed at the program-level and are assumed to occur by 2035.

The distribution of total projected space at LRDP buildout is shown in **Figure 5** below. **Figures 6** and **7** compare the existing and future distributions of building space by use category.



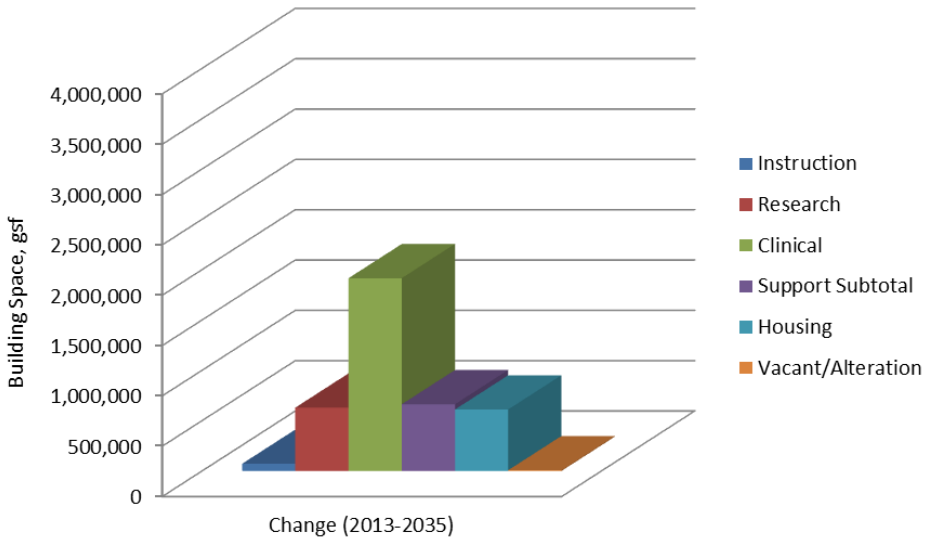
SOURCE: UCSF, 2013

Figure 5
UCSF Projected Total Space at All Sites at LRDP Buildout in 2035 (GSF)



SOURCE: UCSF, Sept. 2013

Figure 6
Total UCSF Building Space by Use Category Existing and LRDP Buildout



SOURCE: UCSF, Sept. 2013

Figure 7
Change in UCSF Building Space by Use Category
Existing to LRDP Buildout

The summary of existing and total projected gsf at LRDP buildout by 2035 is shown below in **Table 1**. By 2035, UCSF's total space will be about 12.14 million gsf, an increase of about 47% from existing conditions. The total space across all campus sites would increase by 3.90 million gsf. Of the 3.90 million gsf, 1.13 million gsf is under construction, therefore growth under the LRDP by 2035 would be 2.76 million gsf.

TABLE 1
SUMMARY OF TOTAL UCSF EXISTING, LRDP BUILDOUT 2035 GSF AND NET CHANGE

Type of Space	Existing 2013[1,2] Total gsf	LRDP Buildout 2035 Total gsf	Change in gsf from existing (2013-2035)[3]
Instruction	574,900	645,700	70,800
Research	2,185,400	2,814,400	629,000
Clinical	1,864,600	3,779,300	1,914,700
Support			
Academic Support	415,500	538,700	123,200
Academic/Campus Admin	1,725,800	2,035,500	309,700
Campus Community	391,700	470,600	78,900
Logistics	395,600	546,100	150,500
Support Subtotal	2,928,600	3,590,900	662,300
Housing	657,500	1,268,400	610,900
Vacant/Alteration	38,100	45,900	7,800
Total	**8,249,100**	**12,144,600**	**3,895,500**

1 Existing as of September 2013
2 Excluding 1,584,300 gsf of structured parking (653,700 gsf at Parnassus Heights; 177,400 gsf at Mount Zion; 654,800 gsf at Mission Bay; and 107,400 at Laurel Heights)
3 Zero net change of total leased space assumed from 2013 to 2035

Current and Projected Population

The estimated UCSF population across all sites in 2011-12 and upon full implementation of the LRDP proposals by 2035 are shown below in **Table 2**. The total population across all campus sites would increase by 16,770, of which 14,200 is associated with the 2.76 million gsf growth proposed by the LRDP.

TABLE 2
CURRENT AND PROJECTED UCSF POPULATION

	Current (2011-2012)	Projected Population at LRDP Buildout (2035)
Students[1]	4,450	5,390
Faculty[2]	3,170	4,130
Staff[3]	16,440	26,230
Unpaid Faculty[4]	4,920	5,340
Postdoctoral Scholars[5]	1,550	1,550
Patients[6]	3,010	5,190
Visitors[7]	4,890	7,360
Total	**38,420**	**55,190**

1 Students as of Fall 2011; includes all Residents
2 Does not include volunteer faculty and community health providers
3 Full-time equivalent staff as of Fall 2012
4 Majority of unpaid faculty not physically present on campus daily
5 Includes clinical fellows
6 Average daily inpatient population and outpatient visits to ambulatory care clinics, private practice physicians, dental clinics and other referred visits.
7 Includes visitors to patients, faculty, students and staff; conference center visitors; participants in continuing education and recreation programs; volunteers; children at child care facilities; and vendors.

2.6 Campus-wide Programs

The following campus-wide programs are part of an ongoing planning process conducted by UCSF for the LRDP. Revisions and/or additions to these programs may be made during the LRDP planning process.

Transportation Demand Management Program

To minimize traffic generated by UCSF current and planned facilities, UCSF proposes to implement more robust Transportation Demand Management (TDM) measures. These include enhancing the City CarShare and UCSF's carpool programs, expanding bicycle parking and access to showers and lockers, promoting ridesharing participation, and, with new campus development, enhancing the shuttle system. UCSF would regularly monitor UCSF-generated traffic to ensure that traffic volumes do not increase beyond what is projected in the EIR.

Climate Action Plan and Greenhouse Gas Reduction Strategy

The University of California is committed to responsible stewardship of resources and to demonstrating leadership in sustainable practices. To that end, The Regents have adopted a

detailed policy on Sustainable Practices.[10] As part of implementing the policy, UCSF is required to develop a long-term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the California Global Warming Solutions Act of 2006 (AB32).

As an intermediate target, UCSF also has the goal of reducing GHG emissions to 2000 levels by 2014; and intends to achieve climate neutrality[11] as soon as possible after achieving the 2014 and 2020 reduction targets.[12] UCSF GHG emissions reduction goals pertain to emissions of the six Kyoto greenhouse gasses originating from sources specified in the American College and University Presidents Climate Commitment.[13] The Regents Policy specifies that these goals will be pursued while maintaining the primary research and education mission of the University.

As part of the LRDP, UCSF is updating its portfolio of GHG reduction strategies. These strategies include the following: campus infrastructure improvements, renewable energy facilities construction, renewable energy purchase, equipment retrofits, operational energy efficiencies, and measures that can be applied to individual projects with the goal of incrementally reducing UCSF's overall GHG emissions over the LRDP horizon. UCSF has prepared and previously published comprehensive emissions inventories covering Scope 1 and 2 for the 1990 baseline[14], 2000 interim year, current year (2011) and future projections (2014 and 2020). UCSF reported total emissions of 81,950 metric tons of carbon dioxide equivalents (CO_2e) in 1990; 142,616 metric tons CO_2e in 2000; and 149,215 metric tons CO_2e in 2011. UCSF's emissions make up about 2.8% of the City of San Francisco's estimated total emissions of 5.3 million metric tons of CO_2e/year.

The California Air Resource Board (CARB) has proposed an efficiency threshold of 4.6 metric tons of CO_2e /year per service population (residents plus employees) for the State in order to meet the year 2020 goal of AB 32. UCSF per capita emissions are currently 5.5 metric tons CO_2e/year.

UCSF currently has one facility – the Parnassus Central Utility Plant – that is subject to Cap-and-Trade rules under AB 32. UCSF has pre-purchased Cap-and Trade allowances for this facility for future years. UCSF has also committed to purchasing additional offsets to meet its 2014 interim Sustainable Practices policy goal. Despite the addition of significant space and population over the life of the LRDP, UCSF anticipates meeting its 2020 emissions goals.

10 http://policy.ucop.edu/doc/3100155
11 Climate neutrality is defined as the University having a net zero impact on the Earth's climate, and will be achieved by minimizing GHG emissions as much as possible and using carbon offsets or other measures to mitigate the remaining GHG emissions (UCSF Climate Action Plan, December 2009).
12 CA Executive Order S-3-05 calls for reducing GHG emissions to 80% below 1990 levels by 2050.
13 The six greenhouse gases identified in the Kyoto Protocol/ACUPCC are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons.
14 Scope 1 (Direct Emissions), includes stationary combustion such as boilers, hydrofluorocarbon (HFC) refrigerant use, or combustion of fuels in UCSF-owned vehicles; Scope 2 (Indirect Emissions) includes purchased electricity for leased facilities (UCSF Climate Action Plan, December 2009).

2.7 Campus Site Locations and Proposed Physical Development Plans

The following development plans are part of an ongoing planning process conducted by UCSF for the LRDP. Revisions and/or additions to these programs may be made during the LRDP planning process.

Parnassus Heights

The Parnassus Heights campus site is the oldest and largest of the UCSF campus sites, occupying about 107 acres of land at the base of Mount Sutro in the Inner Sunset mixed-use neighborhood. The campus site is bounded by Carl and Irving Streets to the north, Fifth Avenue to the west and Clarendon Avenue, Christopher Drive and Crestmont Drive to the south. The eastern boundary is bordered by the Cole Valley neighborhood and the City's Interior Greenbelt Natural Area. UCSF's facilities are concentrated at the north end of the campus site where Moffitt Long Hospital, the four professional schools, clinics, research, auxiliary services, housing, parking and other support uses are located. The 61-acre Mount Sutro Open Space Reserve (Reserve) occupies the central and southern portion of the campus site, up to 400 feet in elevation above Parnassus Avenue. The Reserve is designated by The Regents as permanent open space and is available for public use. Adjacent to the Reserve are three small office buildings, the Environmental Health and Safety incinerator building, the Aldea San Miguel (Aldea) apartment complex and a community center.

Parnassus Heights is the primary UCSF campus site for providing didactic education, a role that is expected to continue through the 20+ year planning horizon of the LRDP. The population of the campus site consists of students, faculty and staff, patients, visitors and residents of UCSF housing. The total population of Parnassus Heights is not expected to grow substantially over the life of the LRDP. Changes in population, however, will reflect changes in the types and uses of space at the site. Approximately 80% of UCSF's 4,450 total students are educated at Parnassus Heights and the majority of the future projected growth in UCSF enrollment is projected to occur here. An additional 600+ students per year could be educated at Parnassus Heights. There are currently over 8,300 UCSF faculty and staff employed at the Parnassus Heights campus site, which is not expected to increase under the LRDP. UCSF housing at Parnassus Heights is currently home to over 560 residents. This number could grow to 750 residents with the future conversion of buildings at Parnassus Heights into housing. Over 256,000 outpatient visits per year are currently seen at clinics at Parnassus Heights. Depending on the future mix of services, this number could grow to 340,000 outpatient visits per year during the life of the LRDP.

As discussed previously, in the 1976 Regents' Resolution, The Regents designated Mount Sutro as a permanent open space reserve; defined campus boundaries to prohibit further property acquisition (by purchase, condemnation or gift) and leasing of private residential properties outside this area by UCSF; directed that the houses acquired and occupied by UCSF on Third Avenue, Fifth Avenue Parnassus Avenue, Irving Street and Kirkham Street be returned to residential use, and that some be sold; and adopted the "space ceiling" within the newly designated campus site boundaries.

The space ceiling limit of 3.55 million gsf of building space (excluding residential uses in UCSF-owned "Avenue Houses" on Third, Fourth, Fifth and Parnassus Avenues and Kirkham and Irving Streets) was adopted for UCSF development at the Parnassus Heights campus site. Currently, space applicable to the space ceiling at the Parnassus Heights campus site is approximately 8.2% above the space ceiling limit. The LRDP identifies strategies to reduce the space ceiling overage over the life of the LRDP.

With the goal of reducing the space ceiling overage, the strategy proposed by the LRDP involves: 1) converting some existing office space (UC Hall and Millberry Union towers) to residential use, which with the exception of housing at the Aldea housing complex, is excluded from the space ceiling; and 2) demolishing a number of buildings and either moving occupants and programs to other campus sites or absorbing them into other buildings at Parnassus Heights.

UCSF will also implement additional Transportation Demand Management measures beyond those that have already been implemented to further help reduce traffic impacts on neighbors. In addition, high-volume clinics may be relocated to other campus sites. Many of these actions are proposed for implementation before the new hospital addition would be built by 2030. The proposed hospital addition is the only new building proposed at the Parnassus Heights campus site during the LRDP planning period, as it is driven by a State mandate to address seismically vulnerable buildings in compliance with SB 1953 by 2030. UCSF currently plans to comply with this legislation by decommissioning Moffitt Hospital for acute care use and constructing a new addition physically connected to Long Hospital (which does comply with SB 1953) after demolishing the Langley Porter Psychiatric Institute building.

Because UCSF proposes to backfill Moffitt Hospital with outpatient facilities, hospital support and other campus uses after the new hospital addition is constructed, it would increase space at the Parnassus Heights campus site and other actions would be considered to offset the net new space both before and after the hospital addition is built.

In accordance with the 1976 Regents' Resolution, which was intended to limit environmental impacts such as traffic and parking impacts on the neighborhoods surrounding the Parnassus Heights campus, UCSF has no plans to acquire or lease additional residential property within the area bounded by Golden Gate Park, Oak Street, Ninth Avenue, Clayton Street and Clarendon Avenue.

The following LRDP proposals at the Parnassus Heights campus site would be evaluated in this EIR at the project level (as illustrated in **Figure 8**):

> **Renovate and reuse of UC Hall.** Built in 1917, UC Hall is the oldest building on the Parnassus Heights campus site. It has been determined to be potentially eligible for the California Register of Historical Resources (CRHR) and the National Register of Historic Places (NRHP). This seven-story building is located on the west end of the campus site on Parnassus Avenue. It contains approximately 147,000 gsf. UC Hall was slated for demolition in the 1996 LRDP. However, UCSF now proposes to retain, seismically retrofit, renovate and reuse UC Hall by 2019. The top three floors would be used as housing, with

SOURCE: UCSF

UCSF Long Range Development Plan Initial Study

Figure 8
Parnassus Heights

up to 136 beds in 73 units. Initially, the three full floors below the housing would be used as faculty offices; these floors would be converted to housing (up to 75 beds in 69 units) after Moffitt Hospital is decommissioned and renovated and is available for other uses including the offices displaced from these three floors of UC Hall. UCSF retained the firm of Page & Turnbull, an architectural firm specializing in historic preservation, to make preliminary recommendations regarding alterations to the exterior of UC Hall that would be consistent with the Secretary of the Interior's Standards for Rehabilitation. UCSF would follow those recommendations to ensure that, in carrying out the renovation project, the Secretary of the Interior's Standards for Rehabilitation are met.

Implement cushioning actions. As part of the planning effort for renovating and reusing UC Hall, UCSF worked with the community to arrive at a number of actions to help cushion UCSF's impacts on neighbors and to respond to some of their requests. These actions include 1) building a new trail from Koret Way to Medical Center Way that would connect with a new trail that is proposed into the Mount Sutro Reserve (and discussed below), 2) enhancing connectivity to the Reserve's trail system from neighborhoods to the west and north of the campus site, 3) improving the Fifth and Kirkham intersection for traffic calming and pedestrian safety, 4) developing more off-street loading and parking to reduce congestion on Parnassus Avenue and 5) providing more all-day parking behind buildings on the west end of campus in lieu of short-term parking that generates traffic throughout the day.

Demolish five small buildings. In order to reduce the space ceiling overage, the 1996 LRDP proposed to demolish seven small buildings, five of which have not yet been scheduled for demolition: Surge, Woods, Medical Research 4, Laboratory of Radiobiology and the Proctor Foundation building (735 Parnassus Avenue has been demolished; 374 Parnassus will soon be demolished). Together, these five buildings contain about 55,600 gsf. The Medical Research 4 and the Laboratory of Radiobiology buildings would be demolished by 2016; the demolition of the Surge and Woods buildings would follow within the next several years. Because the Proctor Foundation building was constructed with funds donated by the Proctor family for use by the foundation for its clinical, research and teaching functions, UCSF is obligated to provide the Proctor Foundation with comparable replacement space or funds to construct equivalent new space. Such obligations must be met before the building is vacated and demolished; therefore, demolition of the Proctor Foundation building is likely to occur toward the end of the LRDP horizon. None of the small buildings is potentially eligible for the CRHR or the NRHP, with the exception of the Surge building, which was constructed in 1966 and would likely be eligible for the CRHR and NRHP when it reaches 50 years of age in 2016.[15] The Surge and Woods building sites would be restored to open space and incorporated into the Reserve, though their existing parking areas would remain. The Laboratory of Radiobiology and Medical Research 4 sites would be developed to provide additional surface parking and possibly new loading dock space for delivery vehicles. The Medical Research 4 site may also be developed with expanded outdoor play yard space for the nearby Kirkham Child Care Center. The Proctor Foundation site and 735 Parnassus Avenue site, where a small building was recently removed, may be developed with housing if they are not developed as open space.

15 Carey & Company, Inc., *UCSF Historic Resources Survey*, February 8, 2011, p. 49.

Construct retaining wall. Landslides have occurred along the northern slope of the Reserve just south of the Regeneration Medicine Building. UCSF proposes to construct a retaining wall to shore up the hillside to prevent future landslides.

Demolish three older Aldea buildings. The Aldea student housing complex is located in the southern portion of the Parnassus Heights campus site adjacent to the Reserve. Single students and student families live in nine buildings that were rebuilt in 1998 and three original buildings that were renovated in 2009 for interim occupancy. Based on an agreement between UCSF and the UCSF Community Advisory Group (CAG), the three older buildings (165 Johnstone, 175 Johnstone and 105 Behr) are planned for demolition by 2024, which would result in the demolition of 42 units totaling 27, 700 gsf. The sites would be restored to open space; 0.5 acres of that space would be added to the Reserve per prior agreements. While the space ceiling excludes campus housing on Third, Fourth, Fifth and Parnassus Avenues and on Kirkham and Irving Streets, the Aldea housing complex is counted toward the space ceiling. Under this LRDP, this agreement would be implemented to help reduce the space ceiling overage. In 2010, these three structures were determined to be potentially eligible for the CRHR and the NRHP.

Demolish the Environmental Health & Safety building. This two-story 6,200 gsf building is located south and uphill of the Ray and Dagmar Dolby Regeneration Medicine Building across Medical Center Way on the northern edge of the Reserve. The occupants would be moved into other buildings on the campus site and the building demolished before the construction of the hospital addition. The site would be restored as open space and added to the Reserve, though the existing parking area would remain. The building was constructed in 1971. It was determined to be ineligible for inclusion in the CRHR or the NRHP and is not listed on a local register. Hence, it is not considered to be a historic resource. The adjacent Annex building would remain.

Demolish the Koret Vision Research building. Located behind the Dental Clinics building and UC Hall on Koret Way, this four-story building contains approximately 40,000 gsf. The Koret Vision Research building would be demolished toward the end of the LRDP horizon, after the hospital addition is built and Moffitt Hospital is renovated and can accommodate Koret Vision Research occupants and programs. The demolition would help UCSF reduce the space ceiling overage. The site may be developed with parking or open space. Constructed in 1986, this building will be 49 years old by 2035. It has not yet been evaluated for its historic significance.

Demolish the Langley Porter Psychiatric Institute (LPPI) building and two small support buildings. LPPI is located on the east side of the campus site on Parnassus Avenue and Medical Center Way. The seven-story 107,000 gsf LPPI building houses psychiatric inpatient and outpatient uses, as well as instruction, research and administrative space. LPPI and the two small buildings (containing an additional 4,600 gsf) are planned to be demolished in year 2025 to allow for construction of the new hospital addition. The LPPI building, constructed in 1941, and the two small support buildings have been determined to be ineligible for inclusion in the CRHR and the NRHP. They are not identified on any local registers or surveys and are not considered historic resources.

Convert Millberry Union towers from office to residential use. The Millberry Union towers are currently used as office space. UCSF would convert the upper levels to student housing (the original use of the towers) to help reduce the space ceiling overage.

Preliminary studies indicate that up to 83 studio and one-bedroom units could be provided. This conversion would occur toward the end of the LRDP horizon after Moffitt Hospital is decommissioned and renovated, so that current occupants of the Millberry Union towers could be relocated into the vacated Moffitt building. The ground floor uses of Millberry Union and the levels below, which are mostly retail with a small amount of office and outpatient space, would not change.

Implement Parnassus Avenue Streetscape Plan. With the renovation of the Clinical Sciences and UC Hall buildings, and possibly new faculty housing near the Fifth and Parnassus Avenue intersection, there would be opportunities to begin implementing the proposed Parnassus Avenue Streetscape Plan. This plan calls for improvements that: make crossing the street safer and more convenient for pedestrians; reorganize and improve transit and UCSF shuttle operations; create more usable outdoor space; strengthen UCSF's identity; and enhance the public realm. Improvements would include new paving, street furniture, lighting and street trees, as well as sidewalk and crosswalk widening and more defined campus gateways at either end of the street as it passes through the campus site, incorporating the new entrance way to align with the future hospital addition. The improvements would occur in phases starting on the south side of Parnassus Avenue at the west end at Fifth Avenue, through the campus core and along the front of the hospital addition to Medical Center Way.

Renovate Saunders Court. As part of the seismic renovation of Clinical Sciences, Saunders Court would undergo changes to improve its functionality for general use and special events, as well as to make it more attractive and interesting. Improvements would include an expansion of the pavement, seating and tables at the north end to accommodate more people without compromising pedestrian movement between Medical Sciences and School of Nursing buildings, a new diagonal walkway with historic information about UCSF that would cut through the center of the courtyard, conversion of part of the lawn to a different surface material, new plants and features that mitigate windy conditions and provide access for the disabled and for fire trucks. The project would also improve connectivity between Parnassus Avenue and Saunders Court through Clinical Sciences.

Create New Trails in the Mount Sutro Reserve. To enhance and improve access throughout the Reserve for the enjoyment of visitors three new trails are proposed in the Mount Sutro Reserve: 1) a trail on the north side of the Reserve connecting the Historic Trail to the campus, allowing for ease of access to/from the campus; 2) a trail connecting the South Ridge and Quarry Road Trails to Christopher Drive, allowing for easier public access from the south side of the Reserve; and 3) an extension of this new trail to Clarendon Avenue and to trails to the Interior Greenbelt (on City-owned land) and southeast of the Reserve. The proposed trail alignments are approximate and have not yet been designed. Creating these new trails will require minimal vegetation removal, minor amounts of grading and new trail markers.

Relocate and expand utility lines and replacement of gas and fuel storage tanks. UCSF is planning to relocate and expand medical gas storage tanks in the vicinity of Medical Center Way near the hospital. In addition, existing underground diesel fuel storage tanks in Medical Center Way and underground lines connecting the tanks to Long Hospital must be replaced to meet State and local codes. Current plans anticipate replacement of these tanks underground.

For program level components, UCSF would determine the appropriate level of environmental review when more detailed plans become available. The following LRDP proposals at the Parnassus Heights campus site would be evaluated in this EIR at the program level:

Renovate and reuse of Moffitt Hospital with non-acute care uses. The decommissioned Moffitt Hospital would be renovated and reused for outpatient, hospital support and office uses. The existing circular driveway along Parnassus Avenue, which would no longer be needed for patient drop-off and pick-up, would be reused for other purposes such as commercial loading, shuttle loading or open space.

Construct a new hospital addition building on the LPPI site. To comply with the requirements of Senate Bill 1953, an addition to Long Hospital would be constructed on the LPPI site. Construction would take about four years, ending by 2030. The addition would contain up to 140 beds in approximately 308,000 gsf. The hospital addition would be seven stories or about 110 feet in height, excluding rooftop mechanical equipment which could add up to an additional 17 feet. The building has not yet been designed, but it would be set back from Parnassus Avenue with a landscaped strip to provide a passenger drop-off/pick-up, parking and loading loop that would exit directly across from Hillway Avenue. The upper portion of the building would step back from the lower portion to minimize shading on Parnassus Avenue and to create a more attractive appearance and better human scale when viewed from the public street. Additional loading space may be created at the back of the building. The corner of the building would be designed to be architecturally prominent as the eastern gateway to the campus site.

Mission Bay

The 56.4 acre UCSF Mission Bay campus site is generally bounded by Mission Bay Boulevard South to the north, Owens Street to the west, Mariposa Street to the south and Third Street to the east. The campus site is in the Mission Bay neighborhood north of the Potrero Hill and Dogpatch neighborhoods. It is approximately 3.8 miles east of the Parnassus Height campus site and 3.6 miles southeast of the Mount Zion campus site.

The population of the Mission Bay campus site consists of students, faculty and staff, patients, visitors and residents of UCSF housing. Reflecting the growth in space, the total population of Mission Bay is expected to grow substantially over the life of the LRDP. There are currently over 3,500 UCSF faculty and staff employed at the Mission Bay campus site. With the construction of the LRDP proposals, this number could grow to 12,500 in the future. UCSF housing at Mission Bay is currently home to over 900 residents. This number could grow to 1,800 residents in the future through the construction of additional campus housing. A total of 70,000 outpatient visits per year are currently seen at clinics at Mission Bay. This number is projected to grow to 450,000 outpatient visits per year during the life of the LRDP, primarily due to the Medical Center at Mission Bay.

As described below, new construction totaling approximately 1.13 million gsf is underway at the Mission Bay campus site and is scheduled for completion in 2015. Approximately 1.45 million gsf of new space is proposed under the LRDP, all of which would be located north of 16th Street. In addition, the Phase 2 Medical Center and cancer outpatient building are assumed to be constructed prior to 2035. These two projects combined are approximately 918,000 gsf.

Under the 1996 LRDP, the 42.3-acre portion of the campus north of Sixteenth Street was entitled for 2.65 million gsf for instruction, research and support uses. As UCSF's primary location for basic science research, it is home to programs in biological sciences, biochemistry and biophysics, cellular and molecular pharmacology, the Center for Brain Development, the Cardiovascular Research Institute, and the Neurosciences Center, among others. Of the 2.65 million gsf entitlement, 1.93 million gsf has been fully built in six research buildings, a campus community center, and 430 units of housing in four separate buildings, representing 73% of the 1996 LRDP approved entitlement.

Mission Hall, a faculty office building of 264,800 gsf, is currently under construction at the northeast corner of Fourth and 16th Streets. Upon its completion in 2015, the total development on the portion of the campus site north of 16th Street will be 2.20 million gsf, or about 82% of the 1996 LRDP development entitlement. Approximately 463,700 gsf of the existing entitlement remains available for future development. Existing built space at this campus site has been developed at a higher density than originally anticipated so the remaining undeveloped land north of 16th Street has additional development capacity.

Future development at the Mission Bay campus site north of 16th Street would be driven by increasing demand for program space, as well as by the need to provide housing for more of the campus population and to decant space for those who currently work in leased space or space that is otherwise vacated. As the population of the campus grows over time, a third parking structure and campus life improvements would also be necessary, such as a permanent facility for child care, additional retail and outdoor recreation and fitness facilities and other open space.

The *2011 Mission Bay Phase 2 Study* evaluated options for developing the remainder of the campus site north of 16th Street. These options reflected various building capacities and heights, and the amount of parking that each would require. One option illustrated how the site would be developed under the existing amount of entitlement; the other options showed potential development scenarios in excess of the current entitlement limit. These options served as the basis from which the preferred plan emerged in considering the projected need for space at this campus site. It was determined that an additional 752,000 gsf was needed at Mission Bay for instruction and research, plus a small amount for child care, recreation and fitness and police services uses, and that the maximum capacity for housing on Block 15 was another 398,700 gsf. The combination of the remaining amount of existing entitlement of 463,700 gsf under the current LRDP with a proposed increase of 991,800 gsf under the new LRDP, for a total of 1.45 million gsf, would provide more than enough space to meet all of this projected need through 2035.

Under the proposed LRDP, the development entitlement for Mission Bay north of 16th Street would increase from 2.65 million gsf to 3.64 million gsf. Although housing was not included in the original campus master plan or entitlement for the Mission Bay campus site, 808,800 gsf of the total entitlement would be devoted to housing (410,100 gsf of existing housing on Block 20 and 398,700 gsf of proposed new housing on Block 15).

In 2007, UCSF acquired additional land south of 16th Street for a new Medical Center with a maximum capacity of 1.79 million gsf on 14 acres. Phase 1 of the Medical Center at Mission Bay

is currently under construction and will open in 2015 on the east side of the site. Phase 1 includes a 289-bed women's, children and cancer hospital of 625,600 gsf, a 207,400 gsf medical building and a 36,000 gsf energy center, for a total of 869,000 gsf. Over 1,000 parking spaces will be provided in a surface lot and existing garage.

Phase 2 of the Medical Center at Mission Bay is planned as a 261-bed hospital with additional outpatient space, totaling 793,500 gsf. Phase 2 is planned to be built at some point after 2035 on the west side of the site, but it is assumed to be completed by 2035 for a conservative analysis of potential impacts in the EIR. A 124,500 gsf cancer outpatient building is also anticipated to be constructed prior to 2035 as part of the Phase 1 entitlement, which would bring the total for Phase 1 to 993,500 gsf.

The preferred development on each block at Mission Bay campus site is summarized below and shown on **Figure 9**. The following LRDP proposals at the Mission Bay campus site would be evaluated in this EIR at the project level:

> **Block 15.** A housing complex consisting of up to 668 beds in 523 units and totaling 398,700 gsf is proposed to be built on Block 15. The complex would be comprised of four or fewer buildings with an internal courtyard. The buildings would range from 55 feet in height along Mission Bay Boulevard South, 85 feet along Sixth Street and Nelson Rising Lane and up to 120 feet along Fifth Street. The complex could include an 18,000 gsf child care center. If child care is located off-site, approximately 12 additional units could be added to the housing program on Block 15. In addition, approximately 1,500 assignable square feet could be considered on this block (or Block 23) for UCSF police services.

For program level components, UCSF would determine the appropriate level of environmental review when more detailed plans become available. The following LRDP proposals at the Mission Bay campus site would be evaluated in this EIR at the program level:

> **Development of remaining entitlement.** Under the existing entitlement for the Mission Bay campus site north of 16th Street, 463,700 gsf of remaining entitlement may be developed by 2035 for additional instruction, clinical, research, support and residential space. Blocks that may be developed or further developed include 15, 16, 18, 23 and 25. On the campus south of 16th Street, Phase 2 of the Medical Center at Mission Bay, comprised of 793,500 gsf, is planned. As discussed above, Phase 2 is not likely to be completed by 2035, but is assumed to be completed by 2035 for purposes of the EIR analysis. While remaining entitlement north and south of 16th Street has been analyzed previously at a programmatic level and is part of the 1996 LRDP as amended, the remaining entitlement is being carried forward into the 2014 LRDP.
>
> **Development with an increase in entitlement north of 16th Street.** An additional 991,800 gsf may be developed by 2035. Buildings may be developed for additional instruction, clinical, research, support and residential space. Blocks that may be developed or further developed include 15, 16, 18, 23 and 25.

SOURCE: UCSF

UCSF Long Range Development Plan Initial Study

Figure 9
Mission Bay

Block 16. One research and/or office building and a central utility plant totaling approximately 289,000 gsf, or alternatively two research buildings totaling up to 377,400 gsf may be built on Block 16. The current plan is to build a 53,000 gsf central utility plant, but the funding for this facility may not be realized, or may not be available soon enough to be cost effective if too many buildings that it would have served are already built, each with their own utility systems, by the time funding for the central plant becomes available. The height of the buildings would be similar in height to other research buildings on the campus site, but would have a setback of 30 feet at the 55-foot height along Mission Bay Boulevard South in accordance with the Mission Bay Campus Master Plan and Design Guidelines. Building footprint configurations would be flexible, but the building on the east side of the block must preserve and respond to the north gateway area. If the central utility plant is constructed, a centralized Environmental Health & Safety facility could be located within the building, along with a Facilities Management landscape yard between the two buildings. Trucks would enter from Nelson Rising Lane and exit onto Mission Bay Boulevard South if the City agrees to this proposal.

Block 18. An office and/or research building (possibly with clinics) with up to 193,000 gsf in a building up to 160 feet in height could be built on this block. To the east of it, a separate or attached eleven-story (110 feet in height) parking garage with approximately 1,540 spaces could be built. The ground floor of the garage would be sized to accommodate about 60 UCSF shuttles. Garage entrances/exits would be on Nelson Rising Lane and mid-block on Owens Street to avoid conflicts with Gene Friend Way, which is a pedestrian corridor. A full-size, multi-purpose sports field would be developed on the eastern portion of the block, providing outdoor recreation and fitness space between the existing community center and future housing. Pedestrian connectivity through the block and to and from the garage would be facilitated in the layout of the facilities and landscape yard, if feasible.

Block 23. An 85-foot tall 232,200 gsf research building would be constructed on the western side of the block in an "L" shape configuration along Fourth Street and the plaza, across from Koret Quad. This building may also contain clinics, offices and retail uses, as well as police space not provided on the Block 15 site with the housing project. A south-oriented courtyard would also be developed on the block between the existing Third Street Garage and the new building. This building would relate to the public street, plaza and Koret Quad at the ground level with transparent facades, active uses and accessibility features.

Block 25. A research/office building, possibly with clinics and retail uses, would be developed on the eastern side of the block. All or a portion of the building may be constructed up to 160 feet in height and may contain up to 323,300 gsf. With its visually prominent location at the southeast corner of the research campus along Third and 16th Streets, it would be an architecturally important building that would be designed with sensitivity to the public realm.

Mount Zion

The UCSF Mount Zion campus site is approximately 7.6 acres on six contiguous city blocks in the Western Addition neighborhood of San Francisco. The campus site is generally bounded by Pine Street to the north, Scott Street to the east, Post Street to the south and Broderick to the west. It is located approximately 1.5 miles northeast of the Parnassus Heights campus site and one mile east of the Laurel Heights campus site.

The Mount Zion campus site is located in a mixed-use neighborhood commercial district. Most buildings along Divisadero Street consist of residential and office uses above ground floor retail. In the vicinity of the campus site there are several private medical office buildings that are not affiliated with UCSF. Kaiser Medical Center is located on Geary Boulevard, one block to the southwest. Residential uses predominate to the north and west, and directly across Scott Street to the east of the main block containing the hospital.

The Mount Zion campus site has 776,300 gsf of owned space and 45,300 gsf of leased space within ¼ mile, for a total of 821,600 gsf. The hospital is located on the main block, with the entrance on Divisadero Street between Post and Sutter Streets. It provides 90 licensed inpatient beds, of which 50 currently are in use. Mount Zion is also the home of the Helen Diller Comprehensive Cancer Center, Women's Health Center, Center of Excellence in Women's Health in Northern California, the Osher Center for Integrative Medicine, Pain Management Center, Sleep Disorders Center, Dialysis Center and other outpatient programs. 1,800 UCSF faculty and staff are located at the Mount Zion campus site.

To support these programs, UCSF owns and operates three parking garages and one parking lot with a total of 454 parking spaces. Other garages, lots and street parking are available nearby. Because parking in the vicinity is in high demand, patients and essential healthcare providers are given priority access to parking under UCSF's control.

The Mount Zion campus site was identified as an outpatient hub in the *2005 LRDP Amendment #2* (approved by The Regents on March 17, 2005), which discussed a plan for replacing UCSF's inpatient facilities at this site and reconfiguring clinical space among campus sites. Accordingly, development at the Mount Zion campus site would be driven by the demand for outpatient space, in addition to addressing seismically compromised buildings. Inpatient functions at the Mount Zion campus site will move to Mission Bay with the opening of the Medical Center at Mission Bay in 2015. The hospital at the Mount Zion campus site will be repurposed as an ambulatory care center with ambulatory surgery. Vacated space will be backfilled with growth of the cancer program, expansion of outpatient treatments, new clinics and support spaces.

Approximately 75,500 gsf of additional outpatient space would be needed at the Mount Zion campus site through 2035. In addition, it is anticipated that some clinical programs at the Parnassus Heights campus site would eventually be relocated to the Mount Zion campus site and nearby leased space would be consolidated into owned space in one or more new buildings on the main block. If UCSF were to dispose of the Laurel Heights facility, the relocation of the child care center at Laurel Heights would require further study, but could be moved to the Mount Zion campus site or elsewhere. In total, approximately 257,300 gsf of new program space would be required at the Mount Zion campus site through 2035. This space would be developed on the main block as there are no plans to acquire additional property in the vicinity or expand the campus boundary. The LRDP proposes to demolish three buildings totaling approximately 85,000 gsf. The new office/research building would be approximately 257,300 gsf, resulting in a net increase at the Mount Zion campus site of about 172,300 gsf.

Specific LRDP proposals at the Mount Zion campus site that would be evaluated at the project level include (shown on **Figure 10**):

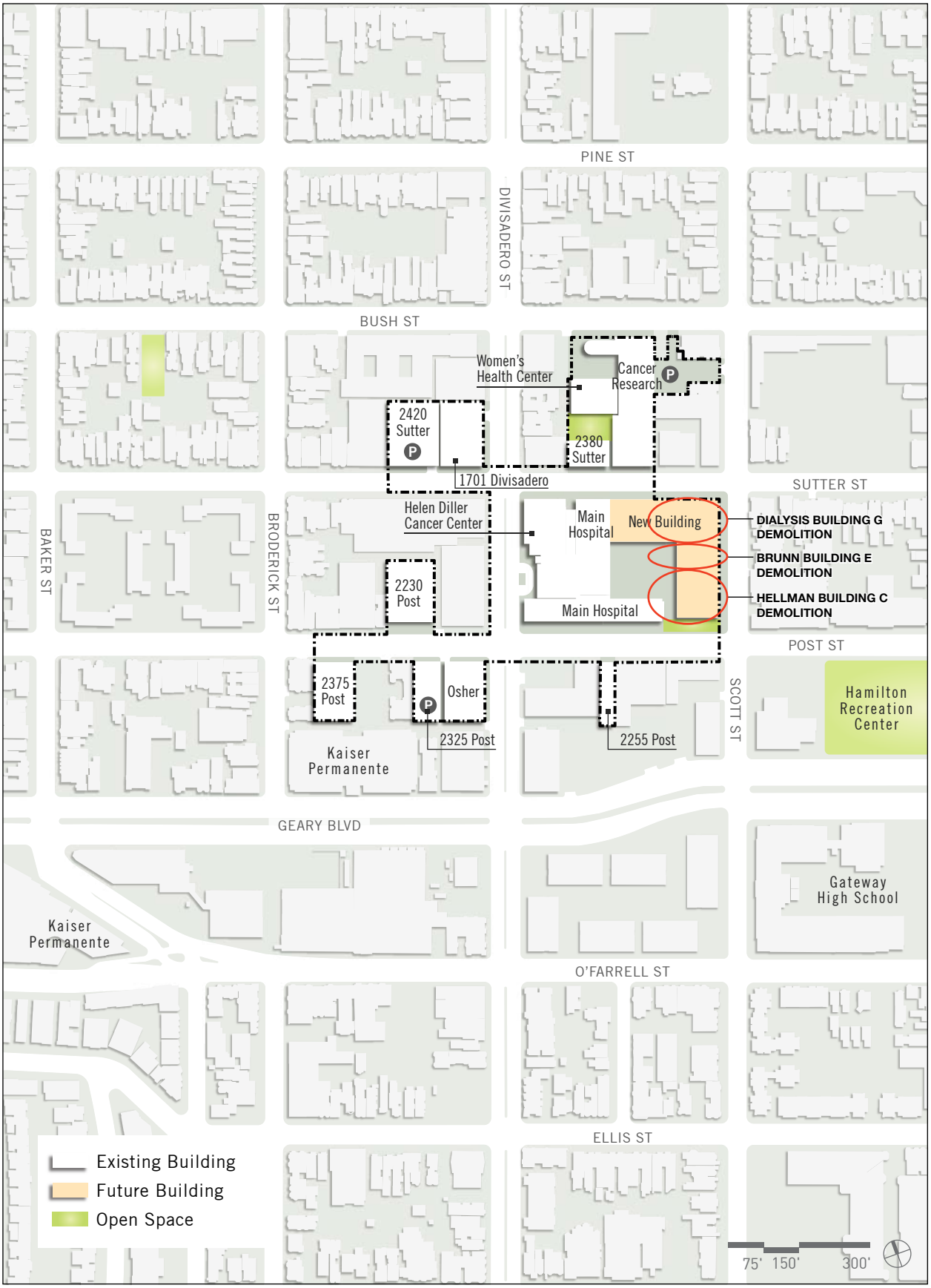
Renovate and reuse the existing hospital. The inpatient facilities at the Mount Zion campus site are provided in two interconnected buildings. Neither building will meet SB 1953 requirements through 2030, so both will require decommissioning as inpatient facilities by this date. With the opening of the Medical Center at Mission Bay in 2015, the inpatient uses at the Mount Zion campus site will be relocated to the Mission Bay campus site and the inpatient buildings will subsequently be repurposed for outpatient use.

Demolish the Hellman, Harold Brunn Institute and the Dialysis Center buildings. These three buildings are located on the east side of the main block along Scott Street between Sutter and Post Streets. The Hellman building is seismically compromised. UCSF would demolish all three buildings, but not necessarily at the same time, and the occupants and programs would be relocated into the repurposed hospital buildings or located elsewhere. Demolition of the Hellman building would likely occur in 2016-2017. In 2003, the Hellman building was determined to be potentially eligible for the CRHR. The Harold Brunn Institute and Dialysis Center buildings are not eligible for the NRHP or CRHR.

The following LRDP proposals at the Mount Zion campus site would be evaluated in this EIR at the program level. For program level components, UCSF would determine the appropriate level of environmental review when more detailed plans become available.

Construct a new medical office and/or research building(s) and additional parking. One or more buildings (or a phased building) would be built on the east side of the main block where the Hellman, Harold Brunn Institute and Dialysis Center buildings are currently located. UCSF conducted a capacity study to evaluate options and to determine how much space could be developed on this portion of the block, given the program target of an additional 257,300 gsf, the need for a central open space area, parking and loading requirements and the City's height and bulk limits that UCSF strives to meet. The study determined that the full program could be met, but only if the City's bulk limits were exceeded and parking was located underground or off the block. A new building along Scott Street could be built up to 65 feet with a 20-foot step back at 40 feet in height to lower the building scale at the street level. It could be set back from Post Street to align with the existing hospital building for a grander landscaped entrance. Building space on Sutter Street could be up to 105 feet in height with a 20-foot setback along Sutter and Scott Streets. This building would comply with the City's height limit, but not the bulk limit. Up to 185 parking spaces could be constructed in two levels underground, if not developed off-site. Streetscape improvements would be made along the affected street frontages.

While it is uncertain when the new building would be developed during the LRDP horizon, if all 257,300 gsf were to be built, it would represent a 21% increase over the total existing UCSF owned and leased buildings at the Mount Zion campus site.



SOURCE: UCSF

UCSF Long Range Development Plan Initial Study

Figure 10
Mount Zion

Mission Center

The three-acre Mission Center campus site is in the northeast portion of San Francisco's mixed use Mission District, located on the southern half of the block bounded by 14th, Harrison, 15th and Folsom Streets. It has only one building that is six stories tall and contains 291,000 gsf. The building fronts on Folsom Street, but the main entrance is adjacent to the 207-space parking lot, which can be accessed from Harrison and 15th Streets. Mission Center is approximately three miles east of the Parnassus Heights campus site, 1.25 miles west of the Mission Bay campus site and one mile northeast of San Francisco General Hospital.

Approximately 800 employees work in the building in various departments including campus police, documents, media and mail, information technology services, the finance services center and the controller's office. The building contains a small amount of research and other administrative functions.

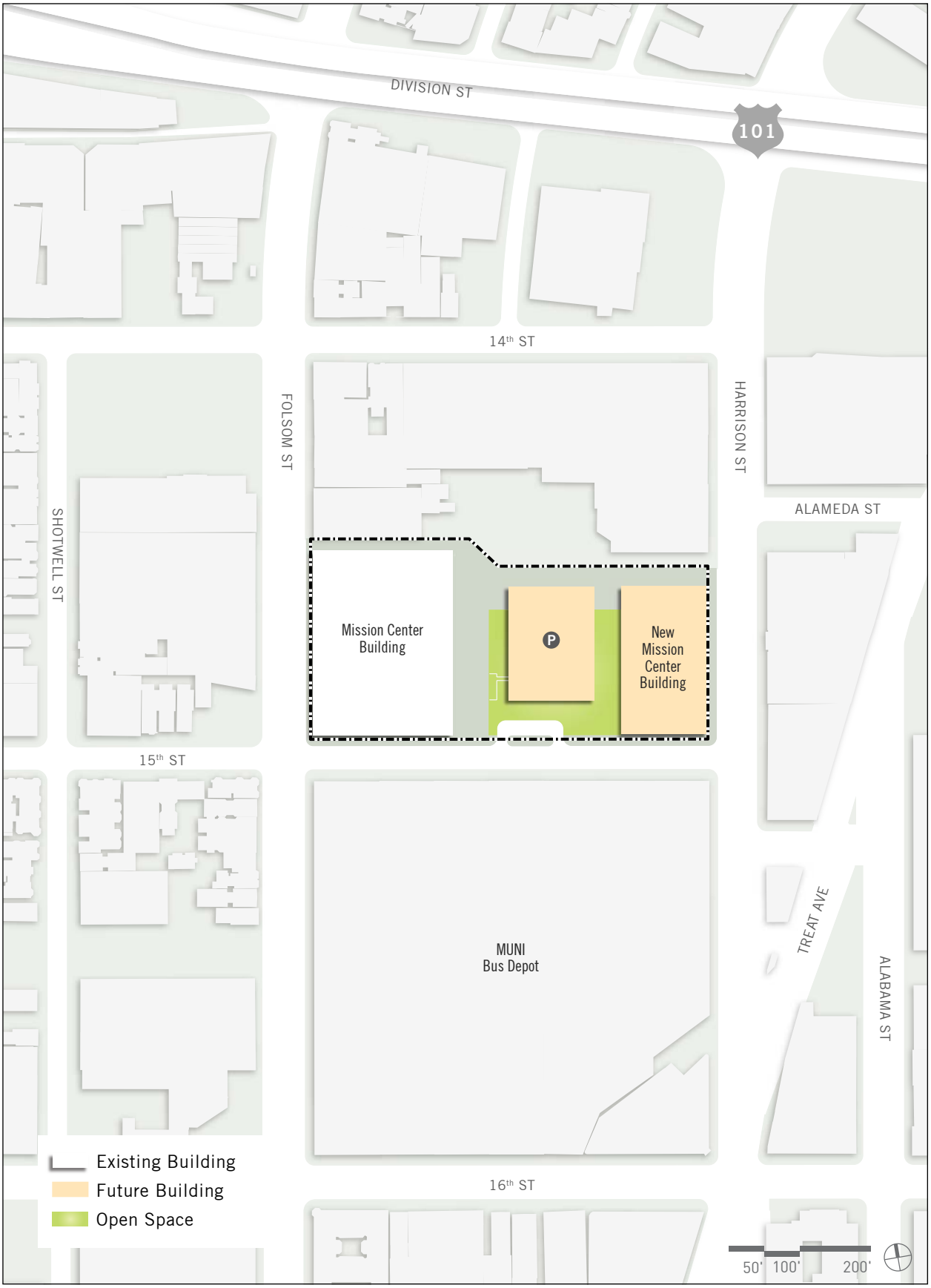
The existing building will remain, and no changes in use are planned. UCSF performed a study to evaluate options for further developing the site should UCSF determine that more program space is needed at this campus site, although no such need is currently anticipated. The capacity study analyzed the potential size and location of a new building and parking structure, and took into consideration urban design elements that would preserve the existing outdoor plaza, create additional open space, enhance the public realm and improve shuttle circulation, while also respecting the City's height and bulk limits.

The study determined that it would be preferable to build a parking structure first, followed by a building with program space, rather than an integrated structure so that some parking on the site would always be available. Because UCSF has no current need for additional space at this campus site, for planning purposes a new building would be no greater than the City's height limit of 55 feet, which would allow for a four-story building up to 100,000 gsf. To support this space, a five-story, 95,600 gsf garage with up to 294 parking spaces would be built between the existing and new buildings. Additional open space with a southern exposure would be developed between the buildings. The shuttle stop would be relocated next to this open space, just off 15th Street where up to two street parking spaces would be removed. Vehicular access into the garage would be limited to Harrison Street. Development of this new building would occur only if needed in the future when funding becomes available. This LRDP proposal will be evaluated in the EIR at a program level. **Figure 11** shows the proposed development at Mission Center.

Other Campus Sites and Affiliations

Laurel Heights

The 10.3 acre Laurel Heights campus site is located at 3333 California Street. The campus site is located on the block bounded by California, Presidio, Euclid and Laurel Streets. The main building is approximately 350,000 gsf with three below-grade floors of offices and parking, and four above-grade floors of office space. A one-story annex building with 13,000 gsf is located at the corner of California and Laurel Streets. There are 210 parking spaces in the underground garage and 333 at ground level, for a total of 543 parking spaces.



SOURCE: UCSF

UCSF Long Range Development Plan Initial Study

Figure 11
Mission Center

The campus site is in the Laurel Heights neighborhood adjacent to the Presidio Heights neighborhood. The Jewish Community Center of San Francisco is located directly across California Street to the north. The California campus of the California Pacific Medical Center is a half mile to the west. The Laurel Heights campus site is approximately two miles northeast of the Parnassus Heights campus site and about one mile west of the Mount Zion campus site.

The Laurel Heights buildings were constructed in several phases between 1955 and 1966 but were not acquired by UCSF until 1985. There are approximately 1,200 employees at this campus site, which is the primary location of UCSF's social, behavioral and policy science research. A number of academic and campus administrative departments are located there along with food services, a conference center and a child care center.

In order to improve programmatic adjacencies and operational efficiencies, UCSF is reviewing its use of the Laurel Heights campus site. While no near-term changes are currently contemplated, a substantial investment of capital to maintain and extend its useful life is required. The cost-benefit of committing financial resources to this site for this purpose is being studied. As part of the study, UCSF is exploring opportunities for relocating occupants from the Laurel Heights campus to other major campus sites.

In December 2012, UCSF issued a Request for Qualifications to solicit and evaluate potential interest for developing the campus site. If selected, the developer will be responsible for developing a plan for the site, working with the community, complying with CEQA (with the City as the lead agency under CEQA), and securing all necessary City entitlements. It should be noted that no change in use is currently proposed at the Laurel Heights campus site and therefore is not analyzed in the EIR for the LRDP.

Buchanan Dental Center

The Buchanan Dental Center is operated by UCSF's School of Dentistry. It is located at 100 Buchanan Street, approximately two miles east of the Parnassus Heights campus site. The facility is located on a 0.6-acre parcel within the boundaries of a 5.4-acre parcel that was formerly owned by UC Berkley and used as UC Berkeley Extension's San Francisco campus. The Buchanan Dental Center is served by on-site parking at this site. UC Berkeley vacated the site in 2003. A private developer has proposed a redevelopment project, 55 Laguna, on the remainder of the parcel, which will include 330 units of market-rate housing and 110 units for low-income seniors, retail uses and a community center. Construction for this project is anticipated to begin in fall of 2014.

The two-story, 18,200 gsf clinic building was constructed in 1979. The building contains dental laboratories, treatment and exam rooms, offices and a classroom. There are approximately 25 UCSF personnel employed at the clinic. These academic and clinical care programs will continue under the new LRDP as they exist today. Fifty-one parking spaces in the new development would be deeded to the University for use in connection with the Dental Center.

654 Minnesota Street

Located just south of the Mission Bay campus site, the three-story 654 Minnesota Street building contains 65,000 gsf. The building and its associated parking lot are located on the south end of the block bounded by Indiana, 19th and Minnesota Streets in the Dogpatch neighborhood, two blocks south of the Medical Center at Mission Bay. UCSF purchased the building in 2005. The building is home to Capital Programs, Campus Planning, Facilities Management, Real Estate Services, Financial and Administrative Services (FAS), Financial Service Center, School of Medical Information Services Unit and Campus Police. There are approximately 200 UCSF personnel employed in the building. Programs and uses at 654 Minnesota Street will continue at existing levels under the new LRDP.

Hunters Point

The 3.8-acre Hunters Point site is located at 900 Palou Avenue, adjacent to the former Hunters Point Naval Shipyard in the Bayview/Hunters Point neighborhood. It is approximately 3.2 miles south of the Mission Bay campus site. The Hunters Point site contains two single-story buildings that total approximately 17,700 gsf. The property is used exclusively as an animal care facility, with approximately 14 UCSF personnel. The surrounding land use is primarily industrial with a pocket of residential north and above the low-lying site. The City of San Francisco approved the Candlestick-Hunters Point Shipyard Development Plan, an extensive mixed-use redevelopment plan for the surrounding area that would include housing, retail, office, commercial, industrial and open space uses. Relocation and disposition of Hunters Point functions is being considered as part of the strategy to consolidate remote sites.

Oyster Point

The 5.7-acre Oyster Point site is located at 616 Forbes Boulevard in the City of South San Francisco. This property houses UCSF's Materials Management warehouse, which provides distribution, storage and mail services and has an adjacent parking lot. The building contains approximately 138,000 gsf. There are approximately 42 UCSF personnel employed at the Oyster Point facility. Surrounding land uses include industrial, research, office and distribution. Several biotech companies, such as Genentech, are located in close proximity to the site. UCSF continues to evaluate sites for centralized receiving to potentially reduce the number of deliveries to each campus site. Relocation and disposition of Oyster Point is being considered as part of the strategy to consolidate remote sites.

San Francisco General Hospital

San Francisco General Hospital (SFGH) is an acute-care medical center owned and operated by the City and County of San Francisco. UCSF does not own facilities at SFGH, but through an affiliation agreement with the City, UCSF faculty and physicians provide all of the medical care at SFGH in City-owned buildings. In addition, UCSF faculty conduct research at SFGH. UCSF leases or otherwise occupies space in exchange for services. There are approximately 2,000 UCSF faculty and staff at SFGH.

SFGH is located in the Mission district, bordering the western portion of the Potrero Hill neighborhood. The site is bounded by U.S. Highway 101 to the north and east, 23rd Street to the south and Potrero Avenue to the west. The area immediately surrounding SFGH is residential with some neighborhood-serving commercial activity on the ground floor, especially along 24th Street.

UCSF occupies approximately 262,000 gsf of research labs, office and clinic space on the SFGH campus in ten buildings (Buildings 1, 3, 5, 9, 10, 20, 30, 40, 80/90 and 100). Because the University of California Office of the President considers SFGH to be an adjunct campus to UCSF, it is subject to UC's Policy on Seismic Safety (Policy), which requires that UCSF occupants be located in seismically safe buildings. To comply with the Policy, UCSF intends to relocate its occupants to a new, UCSF-constructed and seismically robust research building of about 175,000 gsf. The building would be constructed on the existing SFGH surface parking lot along 23rd Street, which is located between the existing hospital (SFGH Building 5) and 23rd Street. The building may also accommodate off-site leases. UCSF intends to continue to occupy Building 3, which is seismically safe.

This new research building is in the early stages of conceptual design, and potentially could be five-stories and would be less than 90 feet in height. Parking spaces that would be displaced by the new research building, possibly along with new demand from off-site leases, could be replaced on the SFGH campus. One option being explored is the expansion of the City's parking structure on 23rd Street. The potential expansion would extend the garage footprint toward 24th Street on the surface parking lot of the garage site. The expansion project would be undertaken by the City, as it is located on City property.

Due to the timing of the proposed project, the proposed SFGH Research Building will undergo its own environmental review process, separate from the LRDP EIR. Under the LRDP, UCSF expects to maintain its activities and affiliation at SFGH and no changes in UCSF uses are anticipated at SFGH.

San Francisco Veterans Affairs Medical Center

The San Francisco Veterans Affairs Medical Center (SFVAMC) is owned by the US Department of Veterans Affairs and has been affiliated with UCSF as a teaching hospital for over 50 years. All physicians are jointly recruited by the SFVAMC and UCSF School of Medicine. SFVAMC has 189 residency and fellow positions and 40 allied health professionals. Annually, more than 700 UCSF trainees from 36 programs rotate through the SFVAMC. SFVAMC space is not considered in the LRDP because although UCSF faculty are physically located at the SFVAMC site and practice at the SFVAMC, UCSF does not lease or otherwise control any of the space at the SFVAMC. There is close cooperation between UCSF and SFVAMC regarding facilities needs and uses.

The 29-acre SFVAMC Fort Miley campus is located in the northwest area of the City adjacent to the Outer Richmond District neighborhood. It is bounded by Clement Street and Seal Rock Drive and the outer Richmond District neighborhood to the south, and otherwise by the National Park Service's Golden Gate National Recreation Area (GGNRA).

The SFVAMC completed its LRDP in June 2012 and the Draft LRDP EIR in August 2012. The SFVAMC identified a need for retrofitting existing buildings to meet the most recent seismic safety requirements and two alternatives, which include the buildout at Fort Miley and an unidentified location in the Mission Bay area, which would provide an additional 589,000 gsf of medical space in two phases to meet projected needs over the next 20 years.

The SFVAMC's LRDP was developed to meet its particular requirements and is thus separate from the UCSF LRDP, and the two planning documents are unrelated. The US Veterans Affairs Department and its local medical center administration will be implementing SFVAMC's LRDP. UCSF expects to maintain its activities as an affiliated institution at the SFVAMC, and UCSF uses at the SFVAMC are not anticipated to change under the LRDP.

UCSF Fresno Medical Education and Research Program

UCSF established a regional medical education program in Fresno in 1975 to provide training for doctors and other health care professionals in the Central San Joaquin Valley. The program was created with support from the California Legislature and the Veterans Administration to address the shortage of physicians practicing in California's San Joaquin Valley and to increase access to continuing medical education in the region. UCSF Fresno provides medical education and physician training programs through community and university partnership. Training for residents and in some programs, fellows, is available in: emergency medicine, family practice, general surgery, internal medicine, obstetrics/gynecology, pediatrics, psychiatry and surgical critical care. As a regional medical campus, UCSF Fresno carries out its training and patient care through a network of affiliation agreements with a number of hospitals in the area, including the Community Healthcare Network (Clovis Community Medical Center, Fresno Heart & Surgical Hospital and University Medical Center), Veterans Affairs Medical Center, Children's Hospital Central California, Saint Agnes Medical Center and Kaiser Permanente, as well as several community hospitals and other specialized facilities.

Located on 3.02 acres, the three-story, 82,000 gsf UCSF Fresno Center for Medical Education and Research Building opened in 2004. The building serves as the hub of medical education and research and includes clinical skills lab, standardized patient center, digital medical library, virtual classrooms and research facilities. UCSF expects to continue its current academic, research and clinical activities at Fresno and UCSF uses are not anticipated to change under the LRDP.

Leased Sites

UCSF leases approximately 1.03 million gsf in San Francisco. By 2014, approximately 200,000 gsf of lease space is expected to be consolidated into UCSF owned space. Beyond 2015, UCSF hopes to continue to reduce its lease portfolio by an additional 470,000 gsf. There is approximately 350,000 gsf of space in community-based leases that will need to remain at their current locations to serve local clinical populations. While UCSF's near-term strategy is to consolidate leases to improve operational efficiency, and when possible, consolidate leases into owned space, for the purposes of the LRDP, it is assumed that UCSF's total lease portfolio will remain at about one million gsf over the LRDP planning horizon. This will account for fluctuations that will

likely occur due to community health care needs, growth and expansion in clinical and research programs and other demands.

Leases are proposed as the need arises, and typically are not foreseeable far enough in advance to include in the LRDP. UCSF evaluates proposed leases of space on a case-by-case basis to determine the appropriate level of environmental review. In general, such activities have been exempt from environmental review in the vast majority of cases. The following is a summary of UCSF's major leased sites that are greater than 10,000 gsf and lay beyond a quarter of a mile from UCSF's three major campus sites. Other leased sites are not addressed in the LRDP.

China Basin

UCSF leases approximately 187,000 gsf at 185 Berry Street between Third and Fourth Streets in the China Basin building. It is located one block west of the Giant's ballpark and one block south of the Fourth and King Street Caltrain Station. The UCSF Imaging Center, Department of Epidemiology and Biostatistics and several other research, academic and campus administration units are located in this building. UCSF plans to remain at China Basin in the near-term, but may eventually move occupants into owned space at Mission Bay as part of its lease consolidation strategy.

2300 Harrison Street

UCSF leases approximately 65,500 gsf at 2300 Harrison Street in a building at the southwest corner of 19th and Harrison Streets in the Mission District. The building is occupied by Medical Center administrative support units. UCSF would likely vacate this property when the lease expires at the end of 2013 and relocate occupants into owned space at various campus sites as part of UCSF's lease consolidation strategy.

250 Executive Park Boulevard

UCSF leases approximately 42,400 gsf at 250 Executive Park Boulevard. This building is located in the Bayview Candlestick Park area off U.S. Highway 101 near the San Francisco County line. Executive Park is part of a privately-owned mixed-use development. The space leased by UCSF is used by the Medical Center's information technology center. UCSF plans to remain at 250 Executive Park in the near-term, but will determine if the uses should be consolidated into owned space as part of its long-term lease consolidation strategy.

3330 and 3360 Geary Boulevard

UCSF leases approximately 6,400 gsf and 19,300 gsf at 3330 and 3360 Geary Boulevard, respectively, totaling 25,700 gsf. These buildings are located on Geary Boulevard between Parker and Commonwealth Streets. The space is occupied by Medical Center administrative support units. For now, UCSF will remain at these locations, but will assess if the occupants should be moved into owned space as part of UCSF's lease consolidation strategy.

220 Montgomery Street

UCSF leases approximately 8,300 gsf at 220 Montgomery Street in downtown San Francisco where the Office of Development and Alumni Relationships is located. UCSF will continue to lease space at this location until 2017, but then will determine if the lease should be renewed or if occupants should be consolidated into owned space at Mission Bay as part of UCSF's lease consolidation strategy.

50 Beale Street

UCSF leases approximately 57,400 gsf at 50 Beale Street in downtown San Francisco for Global Health Sciences and the Center for AIDS Prevention Study. UCSF will continue to lease space at this location in the near-term. It is anticipated that some of the occupants will relocate to Mission Hall on the Mission Bay campus site when it opens in 2015 and that others will move to other owned space at Mission Bay or to leased space in the China Basin building.

1930 Market Street

UCSF Alliance Health Project Center is located at 1930 Market Street on the north side of the street between Guerrero Street and Duboce Avenue in the Upper Market neighborhood. UCSF leases approximately 14,800 gsf in this one-story building. It is a community based clinic and counseling center, also known as the AIDS Health Center, affiliated with the Department of Psychiatry at UCSF, San Francisco General Hospital and the UCSF AIDS Research Institute. UCSF plans to remain at this location.

982 Mission Street

UCSF leases approximately 24,800 gsf at 982 Mission Street in the South of Market district for the Citywide and Community Focus Center, which is affiliated with UCSF and SFGH Department of Psychiatry programs. The center provides outpatient psychiatric care, crisis intervention, therapy and clinical case management services. No changes are planned at this location.

2727 Mariposa Street

Affiliated with SFGH, the UCSF Trauma Recovery and Treatment Center is located at 2727 Mariposa Street at Bryant Street in the Mission District. UCSF leases approximately 12,000 gsf in this mixed-use building and has no plans to relocate.

2.8 Projects and Activities Not Included in the LRDP EIR

The following is a list of projects and activities that are not included in the LRDP EIR.

Parnassus Heights

Mount Sutro Management Project

The Draft EIR for the Mount Sutro Management Project was issued on January 18, 2013. The proposal would implement a number of management activities in the Mount Sutro Open Space Reserve. These management activities include thinning the forest, native plant restoration and enhancement, conversion planting (removal of non-native trees and plants and conversion to native species) in select areas, and construction of new trails. Because this project is currently underway with its own environmental review, it is not included as part of the LRDP EIR.

New Housing at 735 Parnassus Avenue and 1414 Fifth Avenue

UCSF is currently conducting a feasibility analysis for constructing five units of housing on the 1414 Fifth Avenue site and up to 40 units on the former site of 735 Parnassus for a total of up to 45 units and about 48,400 gsf in an L-shape configuration around the Faculty Alumni House. Any development proposal on this site would require a separate project-level environmental review and community participation process, separate from this LRDP EIR process. However, development capacity for this possible project is included in the overall LRDP growth at the Parnassus Heights campus site.

Mission Bay

UCSF issued a second Request for Qualifications to identify opportunities for acquisition of a site for office use near UCSF's Mission Bay campus. The site would serve as a consolidation location for both owned and leased properties, as many of the leases will expire in coming years and UCSF hopes to reduce its overall lease portfolio. UCSF plans to engage the community in acquisition of any space in accordance with the UCSF Mission Bay Planning Principles. Given that the campus does not currently have a specific proposal for a new Mission Bay site, this potential lease consolidation and site is being considered separately from the LRDP EIR.

Block 14 of the Mission Bay campus site is currently reserved for use by the San Francisco Unified School District (SFUSD) as a public school site. Per the agreements through which the Mission Bay campus site was acquired by The Regents, the SFUSD has until 2027 to request conveyance of the 2.4-acre Block 14 for use as a school site. If the SFUSD does not request Block 14 during that timeframe, UCSF may then develop Block 14 for its own use after the necessary planning, environmental review and amendment of the LRDP.

Laurel Heights

As described previously, UCSF is reviewing its use of the Laurel Heights campus site. No near-term changes are currently proposed at the Laurel Heights campus site as a part of the LRDP.

UCSF is exploring opportunities for relocating occupants from the Laurel Heights campus to other major campus sites. No change in use is currently proposed at the Laurel Heights campus site thus it will not be studied in the EIR.

SFGH

As described previously, UCSF intends to vacate seismically compromised buildings at SFGH and construct a new research building of about 175,000 gsf on the existing parking lot along 23rd Street. Due to the timing of this proposed project, the proposed SFGH Research Building will undergo its own UCSF environmental review process, separate from the LRDP EIR.

Under the LRDP, UCSF expects to maintain its activities and affiliation at SFGH and no changes in UCSF uses are anticipated at SFGH.

2.9 Discretionary Approvals

Action by The Regents (including any Regents-delegated committee or official):

Upon certification of the EIR, The Regents or its designee will consider whether to approve the proposed Long Range Development Plan, as well as any individual projects that are brought forth for approval.

Action by Other Agencies:

There are no responsible agencies that have approval authority over the proposed Long Range Development Plan.

There are no responsible agencies that have approval authority over the proposed projects, with the exception of certain activities that are proposed to occur within the public right-of-way. The Parnassus Avenue Streetscape Plan contains various proposals that would occur within the public right-of-way and that would require approval by the San Francisco Municipal Transportation Agency (MTA) and encroachment permits from the Department of Public Works (DPW). In addition, a cushioning action related to the renovation and reuse of UC Hall would involve traffic-calming measures at the intersection of Fifth Avenue and Kirkham Street. Such activities would also require review and approval by DPW and MTA.

3. Purpose of the Initial Study

Section 21080.09(b) of the Public Resources Code requires that approval of a campus LRDP be supported by an EIR. UCSF will prepare an EIR for the 2014 UCSF Long Range Development Plan in compliance with this requirement. As identified in Section 15063(c) of the CEQA Guidelines, the purpose of this Initial Study is to: (1) inform responsible agencies and the public of the nature of the proposed project and its location, (2) identify impacts that will clearly not result or will clearly be less than significant and therefore will not be discussed in the EIR, and (3) provide a general description of the topics intended to be addressed in the EIR.

The environmental factors checked below could be potentially affected by implementation of the 2014 LRDP and/or by cumulative impacts resulting from implementation of the 2014 LRDP in conjunction with other expected developments. These factors will be evaluated in the 2014 LRDP EIR.

☒ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology and Soils
☒ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☒ Hydrology and Water Quality
☒ Land Use/Planning	☐ Mineral Resources	☒ Noise
☒ Population and Housing	☒ Public Services	☒ Recreation
☒ Transportation and Traffic	☒ Utilities and Service Systems	☒ Mandatory Findings of Significance

4. Determination

On the basis of the initial evaluation that follows:

☐ I find that proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Signature — Date: 9/23/13

Diane C. Wong
Printed Name — For

5. Evaluation of Environmental Effects

Appendix G of the CEQA Guidelines provides a suggested format to use when preparing an Initial Study. The Environmental Checklist used in this document adopts a different format while still addressing the Appendix G checklist questions for each environmental issue area.

The attached Environmental Checklist identifies potential environmental effects that will be analyzed in the 2014 LRDP EIR. The effect may be a less-than-significant impact that will be addressed to provide a more comprehensive analysis; an impact for which further analysis is necessary or desirable before a determination about significance can be made; an impact that is potentially significant but may be reduced to a less-than-significant level with the adoption of mitigation measures; or an impact that may be significant and unavoidable.

The EIR will address effects in a program-level analysis for the 2014 LRDP and in a cumulative-level analysis for potential effects associated with growth under the 2014 LRDP and other known and reasonably foreseeable growth in the region. The 2014 LRDP EIR will also include project-specific analyses of effects, or in some cases will not be required to address effects, for proposed projects at Parnassus Heights, Mission Bay and Mount Zion campus sites.

If implementation of the 2014 LRDP, or any of the individual projects or programs proposed under the LRDP, would clearly result in no impact or result in a less-than-significant impact under CEQA criteria, no analysis beyond that provided in this Initial Study is necessary.

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Key to the Environmental Checklist Headings

	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
Organization of Headings and Key to the 2014 LRDP projects and programs in the Checklist. *In the Initial Study Checklist that follows, the 2014 LRDP projects and programs are considered first by location, as campus-wide (2014 LRDP) or by each campus site.* *Campus-wide or by campus site, the projects and programs with similar environmental characteristics and effects are further grouped into subsidiary columns of this Checklist.* *For convenience, a short title is used to designate that group of projects or programs throughout this Initial Study.* *The names of the projects and programs in the group are listed in this table as bullet items under each short title.* *These bullet items provide a comprehensive list of the LRDP elements, which are described in detail in Section 2.5, Projected Growth, Section 2.6, Campus-wide Programs and Section 2.7, Campus Site Locations and Proposed Physical Development Plans.*	***Land Use, Population, Space Needs,& CAP (Program)*** • Land Use Plan • Population Changes • Space Needs • Transportation Demand Management • Greenhouse Gas Reduction Strategy	***Demolish 13 Existing Buildings (Project)*** • Surge • Woods • Medical Research 4 • Laboratory of Radiobiology • Proctor Foundation • 165 Johnstone • 175 Johnstone • 105 Behr • Environmental Health & Safety • Koret Vision Research • Langley Porter Psychiatric Institute (LPPI) • LPPI support buildings (2)	***Renovate UC Hall (Project)*** • UC Hall	***Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*** • Medical gas storage tanks • Diesel fuel storage tanks • Retaining walls • Parnassus Avenue Streetscape • Saunders Court renovation • Mount Sutro Reserve trails	***Construct Replacement Hospital (Program)*** • Replacement hospital	***Renovate Moffitt & Millberry Tower (Program)*** • Moffitt Hospital • Millberry Union towers	***Remaining & Increased Entitlement (Program)*** • Block 15 • Block 16 • Block 18 • Block 23 • Block 25 • Phase 2 Medical Center	***New Housing (Project)*** • Block 15	***Demolish Hellman, Brunn & Dialysis (Project)*** • Hellman • Harold Brunn Institute • Dialysis Center	***Renovate Main Hospital (Program)*** • Main Hospital	***Construct Office / Research Building (Program)*** • New building & parking facility	***Construct Office Building (Program)*** • New building & parking facility	***No Proposed Projects or Programs*** • None

5.1 Aesthetics

		2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
Issues (and Supporting Information Sources):		*Land Use, Population, Space Needs,& CAP (Program)*	*Demolish 13 Existing Buildings (Project)*	*Renovate UC Hall (Project)*	*Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*	*Construct Replacement Hospital (Program)*	*Renovate Moffitt & Millberry Tower (Program)*	*Remaining & Increased Entitlement (Program)*	*New Housing (Project)*	*Demolish Hellman, Brunn & Dialysis (Project)*	*Renovate Main Hospital (Program)*	*Construct Office / Research Building (Program)*	*Construct Office Building (Program)*	*No Proposed Projects or Programs*
Would the project:														
a)	Have a substantial adverse effect on a scenic vista?	--	--	--	--	☒	--	☒	☒	--	--	--	--	--
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	--	--	--	--	--	--	--	--	--	--	--	--	--
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	--	--	--	☒	☒	--	☒	☒	--	--	☒	☒	--
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	--	☒	--	☒	☒	--	☒	☒	☒	--	☒	☒	--
e)	Exceed the LRDP EIR significance standard by substantially reducing sunlight or significantly increasing shadows in public open space areas, or by increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code?	--	☒	--	--	☒	--	☒	☒	--	--	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

Aesthetics

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. A scenic vista is defined as a public view from existing parks, plazas, roadways, or other public areas. Impacts on views from private property are not considered significant. UCSF typically imposes mitigation to minimize light and glare from new buildings through building orientation, use of landscaping and choice of primary façade materials; as well as requiring exterior lighting to be directed downward.

San Francisco Planning Code Section 295 generally prohibits development above a height of 40 feet that would cause significant new shadow on open space under the jurisdiction of the San Francisco Recreation and Park Commission between 1 hour after sunrise and 1 hour before sunset, at any time of the year. A project proposed under the LRDP would have a significant effect if it would result in substantial new shadow on public open space in a manner that would substantially affect use of that area.

Generally, structures less than 100 feet tall are not of sufficient height to alter wind speeds at the ground level. Therefore, detailed wind analysis is typically not required for structures below this height. For projects that warrant detailed analysis, San Francisco Planning Code Section 148 establishes in certain districts of San Francisco wind speed criteria for the comfort and safety of pedestrians. Wind speeds in excess of 26 miles per hour (equivalent wind speed for a single hour of the year) are considered hazardous. Therefore, a project would have a significant effect if it would result in pedestrian-level wind speeds that exceed this hazard level. It is UCSF policy to review proposed construction designs and modify, as needed, proposed new structures such that pedestrian-level wind speeds would not reach hazardous levels.

Discussion of Potential Impacts

a) Have a substantial adverse effect on a scenic vista?

For purposes of this analysis, a scenic vista is defined as a public view from existing parks, plazas, roadways or other public areas, and gateway or panoramic views from areas generally available to the general public. Views from private residences and non-public areas are not considered to be scenic views because they are not available to the general public. Impacts on views from private property are not considered significant.

2014 LRDP

All potential aesthetic effects would occur only as a result of activities at specific campus sites, and only as a result of proposed LRDP programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The Parnassus Heights campus site buildings proposed to be demolished are low-rise structures, including the Langley Porter Psychiatric Institute (LPPI) building, and are generally obscured from public views by surrounding buildings and/or trees. UC Hall, Moffitt Hospital and Millberry Tower, the three major buildings proposed to be renovated, are prominent structures whose existing facades will not be materially changed by renovation. Thus, the demolitions and the renovations would have no effect on a scenic vista.

The LPPI building is a four-story low-rise structure near the corner of Parnassus and Medical Center Way. Although the demolition of the existing LPPI would alter the view of that prominent site on the north slope of Mount Sutro, its loss would not adversely affect the scenic vista of the Parnassus Heights campus site. The demolition of the LPPI building would be followed by the construction of the high-rise replacement hospital on that site. The high-rise replacement hospital will be adjacent to and visible from Parnassus Avenue, and due to the combination of the elevation of the hillside site and the height of the proposed high-rise hospital, will also be visible from a number of distant public view locations. The 2014 LRDP EIR will consider the potential effects of the proposed high-rise Parnassus Heights replacement hospital on scenic vistas.

The proposed utilities and the retaining wall would be visible from Medical Center Way, a campus street. The Parnassus Avenue streetscape improvements are intended to improve the appearance and function of Parnassus Avenue. None of these projects has the potential to have a substantial adverse impact on views or scenic vistas.

Mission Bay

The Mission Bay campus site is located in a developing portion of San Francisco surrounded by a mix of biomedical, institutional, office and residential uses.

The impacts on views of development under the 2014 LRDP would be less than significant with the applied measures, such as protecting view corridors, creating open space and developing the UCSF site in a manner that is compatible with the surrounding area and consistent with local plans and policies. The 2014 LRDP's proposed program and project at Mission Bay would adhere to all policies addressing visual resources contained in the 1996 LRDP as amended, including the protection of scenic view corridors.

Views of the Bay from the Mission Bay campus site would continue to be available along east-west roadway corridors after development anticipated under the LRDP is complete. The impact and its mitigations will be discussed in the 2014 LRDP EIR.

Mount Zion

The Mount Zion campus site is located in a mixed-use neighborhood commercial district. Most buildings along Divisadero Street have residential and office uses above ground floor retail. In the vicinity are several private medical office buildings not affiliated with UCSF. Kaiser Medical Center is located on Geary Boulevard, one block southwest. Residential uses predominate to the north and west, and directly across Scott Street, east of the main block. The hospital is located on

the main block of the Mount Zion campus site, which is also the home of a number of outpatient programs.

Demolition of the seismically poor buildings, together with the construction of a new office/research building on the main block at Mount Zion will be the visible parts of the changes proposed in the 2014 LRDP; renovation and reuse of the hospital will have no visual effect.

The project site and surrounding area are on land that is relatively flat, and offer no scenic vistas. The program to renovate Mount Zion hospital and projects to demolish the Hellman, Brunn and Dialysis buildings at Mount Zion will have no effect on a scenic vista and will not be considered further in the EIR. Likewise, the office/research building project, while potentially taller than the existing structures on the site, would not affect a scenic vista as none exists on the site or when viewed from other public areas nearby.

Mission Center

The three-acre Mission Center campus site is in the northeast portion of San Francisco's Mission District, located on the southern half of the block bounded by 14th, Harrison, 15th and Folsom Streets. It has only one six-story building, which fronts Folsom Street but may be entered as well from the 207-space parking lot. The existing building would remain, and no changes in use are planned.

The LRDP considers options for further developing the site should UCSF decide more program space is needed at this campus site, although no such need is currently anticipated. The capacity study analyzed the potential size and location of a new building and parking structure, and took into consideration urban design elements that would preserve the existing outdoor plaza, create additional open space, enhance the public realm and improve shuttle circulation, while also considering the city's height and bulk limits.

The project site and surrounding area are on land that is relatively flat and offer no scenic vistas. As such, proposed development on this site would have no effect on a scenic vista.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no state-designated scenic highways in the vicinity of the UCSF campus sites at Parnassus Heights, Mount Zion, Mission Bay, or Mission Center. There could be no impact on such scenic resources at these sites.

The LRDP proposes no programs or projects for other UCSF campus sites, although some sites are being considered for closure and consolidation in the long-term. There would be no effect on scenic resources at other UCSF campus sites.

No further analysis is required.

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c) Substantially degrade the existing visual character or quality of the site and its surroundings?

2014 LRDP

All of the potential effects on visual character or quality occur only as a result of development and activities that would occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects at the appropriate campus sites.

Parnassus Heights

Impacts on visual character or quality due to the replacement hospital program and the streetscape project will be analyzed in the 2014 LRDP EIR. Other projects at Parnassus Heights will have no effect on visual character/quality and will not be considered further in the EIR.

Mission Bay

Impacts on visual character or quality due to the remaining and increased entitlement program and the new housing project at Mission Bay campus site will be analyzed in the 2014 LRDP EIR.

Mount Zion

Effects of the office/research building project at Mount Zion on visual character or quality will be analyzed in the 2014 LRDP EIR. The program to renovate Mount Zion hospital and the projects to demolish the Hellman, Brunn and Dialysis buildings at Mount Zion will not substantially degrade the existing visual character or quality of the site or their surroundings and will not be considered further in the EIR.

Mission Center

The visual effect of the program to construct an office building and garage at Mission Center will be analyzed in the 2014 LRDP EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

2014 LRDP

All of the potential effects on light and glare occur only as a result of development and activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

Light and glare impacts associated with the replacement hospital program and the streetscape project will be analyzed in the 2014 LRDP EIR, as will the effects of light or glare for construction and demolition activities. The analysis will consider whether night work or night lighting of worksites would be required for any reason. If so, then the analysis will consider the potential to create light and glare. Other projects at Parnassus Heights will have no effect and will not be considered further in the EIR.

Mission Bay

Light and glare impacts associated with the remaining and increased entitlement program and the new housing project at Mission Bay campus site will be analyzed in the 2014 LRDP EIR.

Mount Zion

Light and glare impacts associated with the office/research building project at Mount Zion will be analyzed in the 2014 LRDP EIR, as will the effects of light or glare for demolition activities. The program to renovate the main hospital at Mount Zion will have no effect on light and glare and will not be considered further in the EIR.

Mission Center

Light and glare impacts associated with the program to construct an office building and garage at Mission Center will be analyzed in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under

current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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e) Exceed the LRDP EIR significance standard by substantially reducing sunlight or significantly increasing shadows in public open space areas, or by increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code?

2014 LRDP

All of the potential effects occur only as a result of development and activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The project to renovate UC Hall and the program to renovate Moffitt Hospital and Millberry Tower at Parnassus Heights will have no effect on sunlight, shadow, or wind and will not be considered further in the 2014 LRDP EIR.

The potential to adversely affect winds and shadowing will be analyzed in the 2014 LRDP EIR for the project to demolish 13 existing buildings and the program for the construction of the replacement hospital, because the removal of buildings could open new paths for winds to reach pedestrian areas, while placement of a large new building could intercept and redirect local winds into pedestrian areas. The infrastructure projects at Parnassus Heights will have less than significant effects on wind and shadow and will not be considered further in the EIR.

Mission Bay

The potential to adversely affect winds and shadowing will be analyzed in the 2014 LRDP EIR for the remaining and increased entitlement program and the new housing project at Mission Bay campus site.

Mount Zion

Hamilton Recreation Center playground and athletic courts are located across Post and Scott Streets from the main block of the Mount Zion campus site and could be affected by shadow from the office/research building project. The potential for shadow and wind effects at Mount Zion will be analyzed in the 2014 LRDP EIR. The program to renovate Mount Zion Hospital will have no effect on shadow or wind and will not be considered further in the EIR.

Mission Center

The program to construct an office building and garage at the Mission Center campus site will be analyzed in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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5.2 Agriculture and Forest Resources

		2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
Issues (and Supporting Information Sources):		*Land Use, Population, Space Needs,& CAP (Program)*	*Demolish 13 Existing Buildings (Project)*	*Renovate UC Hall (Project)*	*Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*	*Construct Replacement Hospital (Program)*	*Renovate Moffitt & Millberry Tower (Program)*	*Remaining & Increased Entitlement (Program)*	*New Housing (Project)*	*Demolish Hellman, Brunn & Dialysis (Project)*	*Renovate Main Hospital (Program)*	*Construct Office / Research Building (Program)*	*Construct Office Building (Program)*	*No Proposed Projects or Programs*
Would the project:														
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	--	--	--	--	--	--	--	--	--	--	--	--	--
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	--	--	--	--	--	--	--	--	--	--	--	--	--
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)?	--	--	--	--	--	--	--	--	--	--	--	--	--
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	--	--	--	--	--	--	--	--	--	--	--	--	--
e)	Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	--	--	--	--	--	--	--	--	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Agriculture and Forest Resources

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

No UCSF campus site contains agricultural uses. No significant impacts to agriculture could occur. Therefore, no further study of agriculture is necessary and this topic will not be analyzed in the EIR.

---

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

The 2014 LRDP does not propose rezoning, loss of forest land, or conversion of forest land to non-forest use. No significant impacts on forest land would occur. Therefore, no further study of forest resources is necessary and this topic will not be analyzed in the EIR.

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5.3 Air Quality

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**													
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation (e.g., induce mobile source carbon monoxide (CO) emissions that would cause a violation of the CO ambient air quality standard)?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
e) Create objectionable odors affecting a substantial number of people?	--	--	--	--	--	--	--	--	--	--	--	--	--
f) Exceed the LRDP EIR standard of significance by exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than 10 cancer cases per 1 million people exposed in a lifetime; or (2) for acute or chronic effects, result in concentrations of toxic air contaminant emissions with a Hazard Index of 1.0 or greater.	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Air Quality

Standards of Significance

The impact questions above constitute the significance standards for air quality. The proposed project is located in the City and County of San Francisco, which is within the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is the agency with jurisdiction over air quality within the Air Basin. In June 2010, the BAAQMD published significance thresholds in the *BAAQMD CEQA Air Quality Guidelines*[16] (updated in 2011 and hereinafter BAAQMD CEQA Guidelines) to assist lead agencies in evaluating the significance of a project's individual and cumulative impacts on local air quality. Projects that do not result in emissions of air pollutants that exceed the BAAQMD CEQA Guidelines thresholds would not be considered as having a significant impact on the attainment of air quality goals and would therefore be consistent with the current air quality plan.

The significance thresholds contained in the BAAQMD CEQA Guidelines were challenged by the California Building Industry Association. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the Air District had failed to comply with CEQA when it adopted the thresholds contained in the BAAQMD CEQA Guidelines. The court found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the District to set aside the thresholds and cease disseminating them until the District had complied with CEQA. However, on August 13, 2013 the California Court of Appeals issued a full reversal of the judgment. In a published ruling, the Court directed that the Superior Court to vacate the writ of mandate issued in March 2012. BAAQMD has not formally re-instated the thresholds or otherwise responded to this Appellate Court reversal at this time.

In the interim, BAAQMD had chosen not to make a recommendation on the use of the 2010 significance thresholds to determine the significance of air quality impacts; instead, the BAAQMD recommends that the lead agency should "determine appropriate air quality thresholds of significance based on substantial evidence in the record."[17] The Alameda County Superior Court did not rule on or question the adequacy of the evidentiary basis supporting the significance thresholds that were contained in the BAAQMD CEQA Guidelines and the BAAQMD-recommended impact assessment methodologies. Therefore, each lead agency has the discretion to use the significance thresholds and methodology for analyzing air quality impacts under CEQA based on the evidence and technical studies supporting the BAAQMD CEQA Guidelines or other evidence.

The University has examined the information in the BAAQMD CEQA Guidelines and other information and determined that it will use the significance thresholds provided in the BAAQMD CEQA Guidelines to evaluate the air quality impacts that could potentially result from a project's criteria pollutant and toxic air contaminants (TAC) emissions. **Table 3**, BAAQMD CEQA Significance Thresholds, below, presents the significance thresholds for criteria pollutants as contained in the 2011 BAAQMD CEQA Guidelines.

16 Bay Area Air Quality Management District, *BAAQMD CEQA Air Quality Guidelines*, Updated May 2011.
17 Bay Area Air Quality Management District, http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx, Accessed July 9, 2013.

TABLE 3
BAAQMD CEQA SIGNIFICANCE THRESHOLDS

	2011 Construction-Related Thresholds of Significance	2011 Operational Thresholds of Significance	
	Maximum Daily Emissions (pounds/day)	Maximum Daily Emissions (pounds/day)	Annual Emissions (tons/year)
Criteria Pollutants and Precursors (Regional)			
ROG	54	54	10
NO_x	54	54	10
PM_{10} (Particulate Matter Exhaust)	82	82	15
$PM_{2.5}$ (Particulate Matter Exhaust)	54	54	10
$PM_{10}/PM_{2.5}$ (Fugitive Dust)	Best Management Practices	None	None
Criteria Air Pollutants and Precursors (Local)			
CO	–	9.0 ppm (8-hour average) concentration 20.0 ppm (1-hour average) concentration	
Risks and Hazards			
Siting a New Source or Receptor (Individual Project)	Cancer Risk: >10 in a million Non-Cancer Hazard Index: >1.0 $PM_{2.5}$ Level: >0.3 µg/m^3 annual average		
Siting a New Receptor (cumulative)	Cancer Risk: >100 in a million Non-Cancer Hazard Index: >10.0 $PM_{2.5}$ Level: >0.8 µg/m^3 annual average		

SOURCE: BAAQMD, 2011.

The average daily emissions thresholds for particulate matter and ozone precursors in Table 3 are based on emission rates of 10 tons per year for ROG, NO_X and $PM_{2.5}$ and 15 tons per year for PM_{10}. These values are derived from the federal New Source Review Significant Emission Rate and BAAQMD Offset Requirement limits and apply the federal BAAQMD Offset Requirements to ozone precursors for which the San Francisco Bay Area Air Basin is designated as a non-attainment area. This is judged to be an appropriate approach to prevent further deterioration of ambient air quality and thus has nexus and proportionality to prevent regionally cumulative significant impacts. Consequently, these values are applicable to all facilities emitting criteria pollutants in California, and similar thresholds are in use in many other air districts in California. Based on the above substantial evidence, the threshold emission rates in Table 3 will be used to evaluate the air quality impacts of the proposed projects and programs.

In addition to the thresholds above, the project-level cancer (10 in 1 million chance) and non-cancer (hazard index of 1) risk thresholds from the BAAQMD CEQA Guidelines have also been retained by the University to evaluate the proposed project's TAC impacts. These values were established in the Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program as thresholds for determining the priority of a facility emitting TACs. A facility with a cancer risk of at least 10 in 1 million or a non-cancer risk index greater than 1.0 would be considered a "high-level" facility and subject to reporting requirements under the Air Toxics "Hot Spots" Program.

These threshold values are commonly used by air districts throughout the state, including the South Coast Air Quality Management District, the Sacramento Metropolitan Air Quality Management District, the San Joaquin Valley Air Pollution Control District, as well as many others. Based on the above substantial evidence, the project-level cancer and non-cancer risk thresholds will be used to evaluate the project's TAC impacts.

BAAQMD also identified a concentration-based threshold for fine particulate matter ($PM_{2.5}$) in its 2011 CEQA Guidelines. This threshold is an increase in annual average $PM_{2.5}$ concentration of 0.3 micrograms per cubic meter ($\mu g/m^3$) and is based on the U.S. EPA staff-proposed Significant Impact level (SIL) for $PM_{2.5}$.

Finally, compliance with the *Clean Air Plan* will provide evidence that Long Range Development Projects (LRDP) projects do not contribute to cumulative ozone impacts. The most recently adopted air quality plan in the San Francisco Bay Area Air Basin is the *2010 Clean Air Plan*. The *2010 Clean Air Plan* is a roadmap showing how the San Francisco Bay Area will achieve compliance with the state 1-hour ozone standard as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies and others. The *2010 Clean Air Plan* also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the state 1-hour ozone standard. In this, the *2010 Clean Air Plan* replaces the *2005 Ozone Strategy*. Under the BAAQMD updated 2012 methodology, a determination of consistency with the most recently adopted Clean Air Plan, currently the 2010 Clean Air Plan, must demonstrate that a plan or project supports the primary goals of the Clean Air Plan, includes applicable control measures of the Clean Air Plan, and would not disrupt or hinder implementation of any control measures of the Clean Air Plan.

CEQA Checklist Discussion Items

In the following discussions of the CEQA Checklist items, the LRDP programs and projects are grouped into categories with similar air quality effects, in order to focus on characterizing the effect and determining the most suitable measure to mitigate potential impacts. These categories are used in Section 5.3 discussions, rather than discussing the programs and projects only by campus site, as is done for most other Checklist item discussions.

The proposed LRDP programs and projects include certain types of activities that would affect air quality in different ways. These general types of activities include:

- Building Demolitions, including the project to demolish 13 existing buildings at various locations at the Parnassus Heights campus site, and the project to demolish the Hellman, Brunn and Dialysis buildings at the Mount Zion campus site.
- Building Renovations, including the project to renovate UC Hall and the program to renovate Moffitt Hospital and Millberry Tower at the Parnassus Heights campus site, and the program to renovate the Main Hospital at the Mount Zion campus site.

- Building and Infrastructure Construction, including the program to construct the Replacement Hospital and the project to install utilities and retaining walls, and make open space improvements to Saunders Court and streetscape improvements to Parnassus Avenue at the Parnassus Heights campus site, the program to construct the buildings that comprise the remaining and increased entitlement and new housing at the Mission Bay campus site, the program to construct an Office / Research Building at the Mount Zion campus site, and the program to construct an Office Building and garage at the Mission Center campus site.
- Operation of the new and renovated buildings and facilities.
- The development and implementation of policies and programs, such as the greenhouse gas (GHG) reduction strategy, that affect design, construction and use of UCSF's facilities, the resultant use of energy and resources, and the air emissions that result.

Discussion of Potential Impacts

a) Conflict with or obstruct implementation of the applicable air quality plan?

2014 LRDP

BAAQMD guidance indicates that any project (i.e., project or plan) that does not support the three primary goals of the Clean Air Plan would not be considered consistent with the Clean Air Plan. Specifically, if approval of a project would not result in significant and unavoidable air quality impacts after application of all feasible mitigation, the project may be considered consistent with the Clean Air Plan.

Consequently, it will be necessary to determine whether all the elements of the 2014 LRDP would cumulatively result in emissions that would be significant and unavoidable after application of mitigation measures. Quantitative analysis of all project elements will be conducted as part of the analysis for the LRDP EIR.

Parnassus Heights, Mission Bay, Mount Zion and Mission Center

The demolition of buildings at the Parnassus Heights and Mount Zion campus sites would result in emissions of particulate matter and ozone precursors that could result in a potential conflict with the primary goals of the BAAQMD 2010 Clean Air Plan. Emissions associated with operation and construction of the replacement hospital at Parnassus Heights; 1.45 million gsf of development and the Phase 2 hospital at Mission Bay; and proposed buildings at Mount Zion and Mission Center would be assessed. Other renovations and improvements would also contribute to emissions. Quantitative analysis of all emissions will be conducted as part of the analysis for the LRDP EIR and will be used to determine if these elements would result in a potential conflict with the primary goals of the 2010 Clean Air Plan.

Other UCSF Campus Sites

The LRDP proposes no programs or projects for other UCSF campus sites, although some sites are being considered for closure and consolidation in the long-term. Potential actions at other campus sites are not anticipated to result in emissions or conflicts with the 2010 Clean Air Plan.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation (e.g., induce mobile source carbon monoxide (CO) emissions that would cause a violation of the CO ambient air quality standard)?

2014 LRDP

The UCSF campus sites are primarily located in the San Francisco Bay Area Air Basin, a non-attainment zone for ozone and airborne particulate matter. The 2014 LRDP EIR will examine the potential for vehicle and stationary source emissions under the 2014 LRDP (including emissions associated with all project elements at each of the campus sites within the Air Basin) to violate state and federal air quality standards or to contribute to existing air quality violations.

Parnassus Heights, Mission Bay, Mount Zion and Mission Center

The demolition of existing buildings at the Parnassus Heights and Mount Zion campus sites will result in emissions of particulate matter and ozone precursors that could result in particulate matter and ozone precursor emissions above the stated thresholds. Emissions associated with operation and construction of the replacement hospital at Parnassus Heights; 1.45 million gsf of development and the Phase 2 hospital at Mission Bay; and proposed buildings at Mount Zion and Mission Center would be assessed. Other renovations and improvements would also contribute to emissions. Quantitative analysis of all emissions will be conducted as part of the analysis for the LRDP EIR and will be used to determine if these elements would result in a violation of air quality standards or contribute to existing violations.

Other UCSF Campus Sites

The LRDP proposes no programs or projects for other UCSF campus sites. Possible actions at other campus sites are not anticipated to result in a violation of air quality standards or contribute to existing violations.

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c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

2014 LRDP

The UCSF campus is located in the San Francisco Bay Area Air Basin, a non-attainment zone for ozone and airborne particulate matter. The 2014 LRDP EIR will examine the potential for vehicle and stationary source emissions under the 2014 LRDP (including emissions associated with the all project elements at each of the campuses) to result in a cumulatively considerable contribution of particulate matter or ozone precursors.

Parnassus Heights, Mission Bay, Mount Zion and Mission Center

The demolition of existing buildings at the Parnassus Heights and Mount Zion campus sites will result in emissions of particulate matter and ozone precursors that could result in particulate

matter and ozone precursor emissions above thresholds established to attain air quality standards. Emissions associated with operation and construction of the replacement hospital at Parnassus Heights and the Phase 2 hospital at Mission Bay could also exceed BAAQMD thresholds as the size (square footage) of the proposed building exceeds the size-based screening criteria for hospital uses contained in the BAAQMD's 2011 CEQA Guidelines for both operational and construction-related emissions. Emissions associated with operation and construction of 1.45 million gsf of development and the Phase 2 hospital at Mission Bay, and proposed buildings at Mount Zion and Mission Center would be assessed. Other renovations and improvements would also contribute to emissions. Quantitative analysis of all emissions will be conducted as part of the analysis for the LRDP EIR and will be used to determine if these elements would result in a cumulatively considerable contribution of particulate matter or ozone precursors.

Other UCSF Campus Sites

The LRDP proposes no programs or projects for other UCSF campus sites. Possible actions at other campus sites are not anticipated to result in a cumulatively considerable contribution of particulate matter or ozone precursors.

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d) Expose sensitive receptors to substantial pollutant concentrations?

2014 LRDP

The BAAQMD CEQA Guidelines identify sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals and residential areas. Sensitive receptors on UCSF campuses include student and faculty/staff housing, child care centers, and hospitals. The 2014 LRDP would result in increased construction, traffic, and operations, which would increase emissions of localized pollutants including carbon monoxide and particulate matter. The EIR will include an analysis of increased carbon monoxide concentrations under the 2014 LRDP (including emissions associated with the all project elements at each of the campuses) at locations near sensitive receptors. If the program-level evaluation in the EIR identifies potential conflicts between the specific projects and sensitive receptors, the project-specific analyses would include additional analysis. Localized fine particulate matter ($PM_{2.5}$) concentration contributions will be estimated for the maximally exposed receptor.

Parnassus Heights, Mission Bay, Mount Zion and Mission Center

The demolition of existing buildings at the Parnassus Heights and Mount Zion campus sites will result in emissions of fine particulate matter ($PM_{2.5}$) that would be mitigated through the implementation of *Basic Construction Mitigation Measures* and applicable air toxic control measures (ATCM) for all construction. The University implements these measures on all applicable projects. Construction of the replacement hospital at Parnassus Heights as well as other proposed development at Mission Bay, Mount Zion and Mission Center also would result in

emissions of $PM_{2.5}$ that would be addressed through these measures. Localized $PM_{2.5}$ concentration contributions will be estimated in the LRDP EIR for the maximally exposed receptor at Parnassus Heights, Mission Bay, Mount Zion and Mission Center. In addition, proposed housing at Parnassus Heights and Mission Bay would be considered new sensitive receptors.

Other UCSF Campus Sites

Other UCSF sites are being considered for closure and consolidation in the long-term and are not anticipated to result in localized exposure risks to sensitive receptors.

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e) Create objectionable odors affecting a substantial number of people?

The proposed LRDP would not include development of the types of land uses identified by BAAQMD as typically associated with odor issues, such as wastewater treatment plants, landfills, composting facilities, refineries, or chemical plants (BAAQMD, 2012). As the 2014 LRDP would not result in development at any campus site that would be a potential source of odors, this topic will not be evaluated further in the EIR.

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f) Exceed the LRDP EIR standard of significance by exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than 10 cancer cases per 1 million people exposed in a lifetime; or (2) for acute or chronic effects, result in concentrations of toxic air contaminant emissions with a Hazard Index of 1.0 or greater.

2014 LRDP

Sensitive receptors on UCSF campuses include student and faculty/staff housing, child care centers and hospitals. The 2014 LRDP would result in increased construction, traffic and operations, which would increase emissions of localized pollutants, including carbon monoxide, toxic air contaminants and particulate matter. The EIR will include a detailed analysis of increased pollutant concentrations under the 2014 LRDP (including emissions associated with the project elements at each campus site) and potential effects on sensitive receptors. If the program-level evaluation in the 2014 LRDP EIR identifies potential conflicts between the specific projects and sensitive receptors, the project-specific analyses would include additional analysis.

Parnassus Heights, Mission Bay, Mount Zion and Mission Center

The demolition of existing building at the Parnassus Heights and Mount Zion campus sites will result in emissions of diesel particulate matter (DPM), a known carcinogen. Resulting concentrations of DPM could increase cancer risks at both on-site and off-site sensitive receptors. Construction of the replacement hospital at Parnassus Heights as well as other proposed development at Mission Bay, Mount Zion and Mission Center also could expose sensitive receptors to DPM emissions. A quantitative health risk analysis of all emissions, including

emergency generators and the Central Utility Plant at Mission Bay will be conducted as part of the analysis for the LRDP EIR and will be used to determine if these elements would result in significant health risks or hazards. Additionally, potential exposure impacts to proposed new residential housing at Parnassus Heights and Mission Bay from existing sources will also be addressed in the health risk assessment conducted for the 2014 LRDP EIR.

Other UCSF Campus Sites

Other UCSF sites are being considered for closure and consolidation in the long-term and are not anticipated to result in emissions that would result in significant health risks or hazards.

5.4 Biological Resources

		2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
Issues (and Supporting Information Sources):		*Land Use, Population, Space Needs,& CAP (Program)*	*Demolish 13 Existing Buildings (Project)*	*Renovate UC Hall (Project)*	*Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*	*Construct Replacement Hospital (Program)*	*Renovate Moffitt & Millberry Tower (Program)*	*Remaining & Increased Entitlement (Program)*	*New Housing (Project)*	*Demolish Hellman, Brunn & Dialysis (Project)*	*Renovate Main Hospital (Program)*	*Construct Office / Research Building (Program)*	*Construct Office Building (Program)*	*No Proposed Projects or Programs*
Would the project:														
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	--	☒	--	☒	--	--	--	--	--	--	--	--	--
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	--	--	--	--	--	--	--	--	--	--	--	--	--
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	--	--	--	--	--	--	--	--	--	--	--	--	--
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	--	☒	--	☒	☒	--	--	--	--	--	--	--	--
e)	Conflict with any applicable policies protecting biological resources?	--	--	--	--	--	--	--	--	--	--	--	--	--
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	--	--	--	--	--	--	--	--	--	--	--	--	--
g)	Exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance?	--	--	--	--	--	--	--	--	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Biological Resources

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

2014 LRDP

The majority of projects described under the 2014 LRDP will occur at already developed sites within an urban setting and without the presence of sensitive species or desirable habitat. The California Natural Diversity Database (CNDDB) documents 76 special status plant and wildlife species within the San Francisco North and San Francisco South U.S. Geological Survey (USGS) quadrangles, which include all UCSF campus sites for which the 2014 LRDP proposes programs or projects. Most of the species identified within these quadrangles are associated with specific habitat types, such as dunes, valley foothill grasslands, chaparral, coastal prairie, coastal bluff scrub, marshes and swamps. None of these habitats is present at the 2014 LRDP campus sites. Site-specific effects of the 2014 LRDP are considered under individual campus sites.

Parnassus Heights

Development at Parnassus Heights would not have a substantial adverse effect either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife[18] (CDFW) or U.S. Fish and Wildlife Service (USFWS). The CNDDB database documents five special status species within one mile of the project sites, however none is expected to occur within the project footprint due to lack of suitable habitat and lack of historic presence. These species include San Francisco gum plant (*Grindelia hirsutula* var. *maritima*), blue coast gilia (*Gilia capitata* ssp. *congesta*), coastal triquetrella (*Triquetrella californica*), California red-legged frog (*Rana draytonii*) and western red bat (*Lasiurus blossevillii*).

Demolition of 13 buildings as well as construction of retaining walls adjacent the Regeneration Medicine building have the potential to adversely affect nesting birds in the adjacent Mount Sutro Open Space Reserve, approximately 82% of which is comprised of mature eucalyptus (*Eucalyptus* sp.) forest as well as oak (*Quescus* sp.) woodlands and a dense understory of English ivy (*Hedra helix*) and Himalayan Blackberry (*Rubus armeniacus*). Trees and buildings in and around the project area provide suitable habitats for breeding birds. Most native, breeding birds

[18] The California Department of Fish and Game (CDFG) changed its name on January 1, 2013 to The California Department of Fish and Wildlife (CDFW). In this document, references to literature published by CDFW prior to Jan. 1, 2013 are cited as 'CDFG, [year]'. The agency is otherwise referred to by its new name, CDFW. CDFG Code remains as such and is referred to as "Code".

are protected under Section 3503 of the CDFG Code (Code), and raptors are protected under Section 3503.5 of the Code. In addition, both Section 3513 of the Code and the Federal Migratory Bird Treaty Act (16 U.S. Code, Sec. 703 Supp. I, 1989) prohibit the killing, possession, or trading of migratory birds. Finally, Section 3800 of the Code prohibits the taking of non-game birds, which are defined as birds occurring naturally in California that are neither game birds nor fully protected species. This potential impact will be analyzed and discussed further in the EIR.

Mission Bay

Development at Mission Bay campus site would not have a substantial adverse effect either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. The CNDDB database documents no sensitive species within one mile of the campus site and sensitive species habitat in the vicinity of the campus is associated with the San Francisco Bay and/or the Mission Bay China channel. Development at Mission Bay campus site would not be located on or near aquatic habitat or directly affect aquatic habitat and water-dependent, special-status species that may be present in the Mission Bay China Basin channel; thus no significant impacts on biological resources would occur. Mission Bay development will not be analyzed further under this significance criterion in the EIR.

Mount Zion

Development at Mount Zion would not have a substantial adverse effect either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. The project sites are contained within an already developed, urban setting, which lacks desirable habitat for special status species. The CNDDB database documents three special status species within one mile of the Mount Zion project sites: Franciscan manzanita (*Arctostaphylos franciscana*), Presidio Manzanita (*Arctostaphaylos Montana* ssp. *ravenii*) and Marin western flax (*Hesperolinon congestum*). None of these species are expected to occur at Mount Zion due to lack of suitable habitat and lack of historic presence; thus no significant impacts on biological resources would occur. The programs and project at Mount Zion will not be analyzed further under this significance criterion in the EIR.

Mission Center

Potential development at Mission Center includes construction of a new additional building and parking garage. This potential development would not have a substantial adverse effect either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. The site is contained within an already developed, urban setting, which lacks desirable habitat for special status species; thus no significant impacts on biological resources. Mission Center development will not be analyzed further under this significance criterion in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?

2014 LRDP

The majority of projects described under the 2014 LRDP would occur at already developed sites within an urban setting. Small areas of oak woodland, eucalyptus forest, montane hardwood, non-native annul grassland, lacustine, riparian and freshwater emergent wetland habitat, are present within the City of San Francisco but not at or in the vicinity of the LRDP campus sites for which the 2014 LRDP proposes programs or projects. Site-specific effects of the 2014 LRDP are considered under individual campus sites.

Parnassus Heights

Development at Parnassus Heights would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS because no riparian habitat or other sensitive natural community is mapped or identified within the campus site. Portions of the Parnassus Heights development would be adjacent to the Mount Sutro Open Space Reserve; however, the reserve is largely comprised of non-native eucalyptus forest with a non-native understory. No development is planned within the reserve or in undeveloped areas that would affect sensitive habitat; thus, there are no significant impacts on riparian or sensitive habitats. Development at Parnassus Heights will not be analyzed further under this significance criterion in the EIR.

Mission Bay

The Mission Bay campus site is contained within an urban setting and development on the existing campus site would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS because no riparian habitat or other sensitive natural community is mapped or identified within the campus site. The program and the project would not affect the adjacent China Basin Water Channel or the San Francisco Bay; thus, there are no significant impacts on riparian or sensitive habitats. Development at Mission Bay campus site will not be analyzed further under this significance criterion in the EIR.

Mount Zion and Mission Center

The Mount Zion and Mission Center campus sites are contained within an urban setting and will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS because no riparian habitat or other sensitive natural community is mapped or identified within these campus sites. Development at these campus sites will not be analyzed further under this significance criterion in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

2014 LRDP

The majority of projects described under the 2014 LRDP would occur at already developed sites within an urban setting. Some federally protected wetlands are present within the City of San Francisco but not at or in the vicinity of the LRDP campus sites for which the 2014 LRDP proposes programs or projects. Site-specific effects of the 2014 LRDP are considered under individual campus sites.

Parnassus Heights

Development at Parnassus Heights would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means because there are no jurisdictional or non-jurisdictional wetlands mapped or identified at Parnassus Heights. While some development would occur adjacent the Mount Sutro Open Space Reserve, no federally protected wetlands exist within the Reserve. No impact would occur and proposed development at Parnassus Heights will not be analyzed further under this significance criterion in the EIR.

Mission Bay

Development on the Mission Bay campus site would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means because there are no jurisdictional or non-jurisdictional wetlands

mapped or identified in the project footprint. Proposed development will not affect the adjacent China Basin Water Channel, an estuarine, deep water wetland, or the San Francisco Bay; thus there are no significant impacts on riparian or sensitive habitats. The Mission Bay campus site will not be analyzed further under this significance criterion in the EIR.

Mount Zion and Mission Center

Development at the Mount Zion and Mission Center campus sites would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means because there are no jurisdictional or non-jurisdictional wetlands mapped or identified at these campus sites. The Mount Zion and Mission Center campus sites will not be analyzed further under this significance criterion in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

2014 LRDP

The City of San Francisco and the San Francisco Bay exists along the Pacific Flyway, a main north-south travel corridor for migrating birds extending from Alaska to Patagonia. Birds frequently stopover in desirable habitat within the City or on the Bay waters throughout migration. Development at the UCSF campus sites for which the 2014 LRDP proposes programs or projects is not expected to disrupt migrating birds or interfere with the movement of any native resident or migratory fish or other wildlife species or with established native resident or migratory corridors or nursery sites as the majority of projects described under the 2014 LRDP would occur at already developed sites within an urban setting and not in desirable habitat. Site-specific effects of the 2014 LRDP are considered under individual campus sites.

Parnassus Heights

Parnassus Heights is located adjacent to the Mount Sutro Open Space Reserve, which is desirable habitat for resident and migrating birds moving along the Pacific Flyway due to its expanse of mature trees and dense understory isolated within an urban setting. Development at the Parnassus Heights campus site is not expected to impact migrating birds as projects that could affect habitat will likely occur outside of bird-nesting season. No additional migratory corridors or wildlife

nursery sites exist within the project area. However, because effects of LRDP programs and projects on habitat cannot be ruled out, this topic will be studied in the EIR.

Mission Bay

The Mission Bay campus site is located adjacent to the San Francisco Bay, which is considered desirable habitat for resident and migratory birds moving along the Pacific Flyway. Development on the Mission Bay campus site is not expected to impact migrating birds as projects would occur on previously developed land with no desirable habitat. No impact would occur and this criterion will not be analyzed further under this significance criterion in the EIR.

Mount Zion and Mission Center

Development at the Mount Zion and Mission Center campus sites is not expected to interfere with the movement of any native resident or migratory fish or other wildlife species or with established native resident or migratory corridors or nursery sites as the sites are already developed, within an urban setting, and are not located in desirable habitat. Development at the Mount Zion and Mission Center campus sites will not be analyzed further under this significance criterion in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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e) Conflict with any applicable policies protecting biological resources?

Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation, including City of San Francisco General Plan policies regarding the protection of urban biological resources. City of San Francisco Planning Code Section 139, Standards for Bird-Safe Buildings, was adopted by the City in 2011. Section 139 focuses on buildings that create location-specific hazards and building feature-related hazards to birds. Location-specific hazards apply to buildings in, or within 300 feet of and having a direct line of sight to, an Urban Bird Refuge, such as "open spaces two acres and larger dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, or wetlands, or open water." Section 139 requires that 90% of glazing in the "Bird Collision Zone" (60 feet above grade, plus 60 feet above an adjacent vegetated roof 2 acres or larger) be treated (fritted, stenciled, frosted, or covered with netting, screens, grids, or bird-visible UV patterns). Lighting must also be minimized, and any wind generators must comply with Planning Department requirements. Although UCSF is not subject to the standards described under this section, UCSF will strive to be consistent with the standards, where feasible.

Conflicts with biological resource policies will not be analyzed in the EIR.

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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?

There are no adopted habitat conservation plans, natural community conservation plans, or other applicable habitat conservation plan that would be applicable to the 2014 LRDP or any of the individual projects or programs proposed under the LRDP. No impact would occur and this criterion will not be analyzed in the EIR.

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g) Exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance?

The San Francisco Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code) was enacted to ensure the protection of trees on private land within and adjacent to public areas. The City of San Francisco currently considers street trees, significant trees, and landmark trees as protected. Significant trees are trees within 10 feet of the public right-of-way and are either 20 feet or greater in height, 15 feet or greater in canopy width, or 12 inches or greater in trunk diameter at 4.5 feet above grade. Landmark trees are trees that have received special designation by the San Francisco Board of Supervisors due to species rareness, size, age, structure, ecological contribution, or historical and cultural importance.

2014 LRDP

The majority of projects described under the 2014 LRDP will occur at already developed sites within an urban setting and without impact to street trees, significant trees, or landmark trees. Site-specific effects of the 2014 LRDP are considered under individual campus sites.

Parnassus Heights

The LRDP programs and projects at the Parnassus Heights campus site are not expected to affect protected trees. The Parnassus Heights campus site will not be analyzed further under this significance criterion in the EIR.

Mission Bay

Development at the Mission Bay campus site would not impact protected trees as none are present. The Mission Bay campus site will not be analyzed further under this significance criterion in the EIR.

Mount Zion and Mission Center

Development at the Mount Zion and Mission Center campus sites is not expected to impact protected trees as the sites are already developed, with few street trees, and no landmark or

significant trees are present. While the removal of protected trees on private land is not prohibited under the ordinance described above, a permit would be required from the Department of Public Works. Development at these campus sites will not be analyzed further under this significance criterion in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

References

California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) species occurrences for the *San Francisco North* and *San Francisco South* U.S. Geographical Survey (USGS) 7.5-minute topographic quadrangles, Commercial Version, July 2013.

United States Fish and Wildlife Service (USFWS), Federally Endangered and Threatened Species List for the *San Francisco North* and *San Francisco South* USGS 7.5-minute topographic quadrangles, July 2013.

California Native Plant Society Electronic Inventory (CNPS), July 2013.

USFWS National Wetlands Inventory, online version, July 2013.

University of California San Francisco (UCSF), *UCSF Long Range Development Plan Final EIR*, City of San Francisco, prepared by EIP Associates, January 1997.

UCSF, *Draft EIR for the UCSF Mount Sutro Management Project*, City of San Francisco, prepared by UCSF Financial and Administrative Services Planning, January 2013.

5.5 Cultural Resources

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	--	☒	☒	☒	--	☒	--	--	☒	--	--	☒	--
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	--	--	--	☒	☒	--	☒	☒	--	--	☒	☒	--
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	--	--	--	☒	☒	--	☒	☒	--	--	☒	☒	--
d) Disturb any human remains, including those interred outside of formal cemeteries?	--	--	--	☒	☒	--	☒	☒	--	--	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Cultural Resources

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. The significance criteria standards for impacts are further explained and defined below.

Public Resources Code (PRC), Section 5020.1 and *CEQA Guidelines* Section 15064.5(b)(1) define a significant impact to historical resources as one that would materially impair the significance of an historical resource. According to *CEQA Guidelines* Section 15064.5(b)(2), material impairment of a resource's historic significance could result if the project would:

- Demolish or materially alter in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historic Resources; or
- Demolish or materially alter in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to local ordinance or resolution (PRC Section 5020.1[k]), or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g) unless a preponderance of evidence establishes that the resource is not historically or culturally significant; or
- Demolish or materially alter in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility

Generally, a project that follows the Secretary of the Interior's guidelines will be considered mitigated to a less than significant level, according to *CEQA Guidelines* Section 15064.5(b)(3).

CEQA Guidelines Section 15064.5(c) applies to effects on archaeological sites. Effects on non-unique archaeological resources are not considered significant. Regarding unique archaeological resources, lead agencies may require that reasonable efforts be made to permit such resources to be preserved in place or left in an undisturbed state. To the extent that unique archaeological resources are not preserved in place or not left undisturbed, mitigation measures to protect such resources are required (PRC Section 21083.2[c]). In addition, mitigation measures may be imposed to make provisions for archaeological sites accidentally discovered during construction. With the imposition of mitigation measures, effects on archaeological resources generally would be reduced to a level of non-significance.

Several sections of the Public Resources Code protect paleontological resources. Public Resources Code Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted permission.

Under State law, human remains and associated burial items may be significant resources in two ways: they may be significant to descendent communities for patrimonial, cultural, lineage and religious reasons and human remains may also be important to the scientific community, such as

archaeologists, epidemiologists and physical anthropologists. The specific stake of some descendent groups in ancestral burials is a matter of law for some groups, such as Native Americans (*CEQA Guidelines* Section 15064.5 [d], PRC Section 5097.98). In other cases, the concerns of the associated descendent group regarding appropriate treatment and disposition of discovered human burials may become known only through outreach. Beliefs concerning appropriate treatment, study and disposition of human remains and associated burial items may be inconsistent and even conflictual between descendent and scientific communities. CEQA and other State regulations concerning Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects to human remains within the contexts of their value to both descendents communities and the scientific community:

- When an initial study identifies the existence or probable likelihood that a project would impact Native American human remains, the lead agency is to contact and work with the appropriate Native American representatives identified through the Native American Heritage Commission (NAHC) to develop an agreement for the treatment and disposal of the human remains and any associated burial items (*CEQA Guidelines* Section 15064.5 (d), PRC Section 5097.98).
- If human remains are accidentally discovered, the county coroner must be contacted. If the county coroner determines that the human remains are Native American, the coroner must contact the NAHC within 24 hours. The NAHC must identify the most likely descendant (MLD) to provide for the opportunity to make recommendations for the treatment and disposal of the human remains and associated burial items. If the MLD fails to make recommendations within 48 hours of notification or the project applicant rejects the recommendations of the MLD, the Native American human remains and associated burial items must be reburied in a location not subject to future disturbance within the project site (PRC Section 5097.98).
- If potentially affected human remains/burial may have scientific significance, whether or not having significance to Native Americans or other descendent communities, then under CEQA, the appropriate mitigation of effect may require the recovery of the scientific information of the remains/burial through identification, evaluation, data recovery, analysis and interpretation (*CEQA Guidelines* Section 15064.5[c][2]).

Discussion of Potential Impacts

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

2014 LRDP

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed LRDP programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The Parnassus Heights campus site is the oldest of the UCSF campus sites, having begun in 1896 as the Affiliated Colleges, and contains numerous buildings and structures that are listed in, or are eligible for listing in, the California Register of Historical Resources (CRHR). The proposed

project at Parnassus Heights would demolish 13 buildings and structures in furtherance of the space ceiling program, would include various open space projects, as well as utilities and infrastructure projects. Other buildings on the campus would be altered and renovated for new uses. All of these actions have the potential to demolish or materially alter in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR. Some of the buildings and structures proposed for demolition at the Parnassus Heights campus site have been previously evaluated and determined ineligible for listing in the CRHR,[19] and will not be further addressed in the EIR, while others are currently unevaluated (i.e., their historic status is unknown), or were evaluated over 10 years ago, and would require further analysis in the EIR. **Table 4**, below, provides breakdown of those LRDP actions at Parnassus Heights which will be addressed in the EIR, and those which will have no further discussion.

Mission Bay

Mission Bay is a recently-developed campus which contains no buildings or structures listed in or eligible for listing in the CRHR. Blocks 15, 16, 18, 23 and 25B at Mission Bay campus site are undeveloped lots, and proposed construction of buildings under the remaining and increased entitlements or for new housing at this location would have no potential to impact historic resources. As such, construction at Mission Bay will not be addressed in EIR.

Mount Zion

There are three projects at Mount Zion which have the potential to impact historic resources. This includes demolition of three buildings; Hellman, the Harold Brunn Institute and the Dialysis Center Buildings. Built in 1913, Hellman is the oldest building at the Mount Zion campus site. This building was evaluated in 2003 and determined eligible for listing in the CRHR, and as such, it is considered a historic resource for CEQA purposes.[20] Proposed demolition of this structure will be addressed in EIR. Historic American Building Survey (HABS) documentation of the Hellman Building was previously completed by Page & Turnbull in 2006.[21]

The Harold Brunn Institute and the Dialysis Center buildings, built in 1914 and 1962, respectively, were evaluated in 2003 and were determined ineligible for listing in the CRHR.[22] Although this evaluation was completed 10 years ago, a reconnaissance-level pedestrian survey by an ESA architectural historian in July, 2013, found no physical changes to the buildings or other information which would indicate a change in their original significance determination. As these buildings are not considered historic resources, their demolition would have no significant impact to historic resources, and these actions will not be addressed further in the EIR.

19 Carey & Company, Inc., *UCSF Historic Resources Survey*, February 8, 2011.
20 Architectural Resources Group, *Historical Resources Evaluation, UCSF Mount Zion Campus, San Francisco, California*, June, 2003.
21 Page & Turnbull, *Historic American Building Survey Documentation, Hellman Building, 2200 Post Street, University of California Mount Zion Hospital & Medical Center, San Francisco, California*, prepared for University of California San Francisco Campus Planning, October 11, 2006.
22 Architectural Resources Group, *Historical Resources Evaluation, UCSF Mount Zion Campus, San Francisco, California*, June, 2003.

TABLE 4
PARNASSUS HEIGHTS CAMPUS PROJECTS TO BE ADDRESSED IN THE EIR

Project Component	Historic Status	To Be Addressed in EIR? (Y/N)
Renovation and Conversion Projects:		
Renovate and reuse UC Hall for residential use	Built in 1917. Determined eligible in 2003 and again in 2011. Identified as a historic resource. Plans for adaptive reuse, including compliance with the Secretary of the Interior's Standards, will be evaluated in EIR.	Y
Conversion of Millberry Union towers to residential use	Built in 1955. Determined eligible in 2011. A potential historic resource. Conversion project will be addressed in EIR.	Y
Renovate Moffitt Hospital	Built in 1955. Determined ineligible in 2003. Not considered a historic resource. Backfilling Moffitt Hospital after 2030 with hospital support and other uses would have no impact on historic resources. This project will not be addressed further in the EIR.	N
Demolition of 13 structures in furtherance of the space ceiling policy:		
Surge	Built in 1966. Determined eligible in 2011. Considered a historic resource. Demolition will be addressed in EIR	Y
Woods	Built in 1962. Determined ineligible in 2011. Not considered a historic Resource. Demolition will not be addressed further in EIR	N
Medical Research 4	Built in 1944, remodeled 1960. Determined ineligible in 2003. Building will be reevaluated, and demolition will be addressed in EIR	Y
Laboratory of Radiobiology	Built in 1949-78. Evaluated in 2003 and determined ineligible, but will be reevaluated and addressed in EIR	Y
Three buildings at the Aldea Housing complex	Built in 1960. Determined eligible in 2011. Considered historic resources. Demolition will be addressed in EIR	Y
Koret Vision Research building	Built in 1986. Will not reach 50 yr age threshold old by 2035, and is not be considered a historic resource. Demolition will not be addressed further in EIR.	N
Environmental Health and Safety (EH&S) office building	Built in 1971. Determined ineligible in 2011. Not considered a historic resource. Demolition will not be addressed further in EIR.	N
Proctor Foundation building	Built in 1956. Determined ineligible in 2003, but will be reevaluated and addressed in EIR	Y
Langley Porter Psychiatric Institute (LPPI) building	Built in 1941. Determined ineligible in 2003, but will be reevaluated and addressed in EIR.	Y
Two LPPI support structures	Built in 1964 and 1979. Determined ineligible in 2011. Not considered historic resources. Demolition of these buildings will not be addressed further in the EIR	N

Construction of the office/research building, or renovation and reuse of the existing hospital, built in the mid-1960s and expanded and renovated numerous times in the last 30 years, would have no impacts to historic resources. As such, the new construction and the renovation and reuse will not be addressed further in the EIR.

Mission Center

The Mission Center Building was constructed in 1928, and was determined eligible for listing in the CRHR.[23] Under the LRDP, the Mission Center Building would remain, however, potential new construction would occur in the adjacent parking lot. Potential impacts of the adjacent new construction on this building, as well as the historic district as a whole, will be addressed in the EIR.

Other UCSF Campus Sites

None of the buildings at the other UCSF Campus sites have been identified as historic resources in previous studies, with the exception of the Laurel Heights Building at 3333 California Street. Built between 1955 and 1966, this building was determined eligible for listing in CRHR an excellent example of mid-century Modernism and the International Style (Carey & Co, 2011). No near-term changes are currently proposed at Laurel Heights. UCSF is exploring long-term opportunities for relocating Laurel Heights functions and disposing of the site as part of its site consolidation strategy. As described in the Project Description of this Initial Study, any private developer of the Laurel Heights campus site will comply separately with CEQA with the City as the lead agency at the time that this future project is proposed. Therefore, this potential action is not included as part of the LRDP, and will not be addressed in the EIR.

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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed LRDP programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites. Preliminary research suggests that the Parnassus Heights and Mount Zion campus sites have a low archaeological sensitivity and/or there is substantial modern ground disturbance that would have destroyed any possible remains, however the potential for uncovering archaeological resources cannot be entirely discounted. Preliminary research suggests that the Mission Bay and Mission Center campus sites have a high sensitivity to contain significant archaeological deposits and/or features from both prehistoric and historic-period use and occupation. The 2014 LRDP EIR will analyze effects resulting from these programs and projects at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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[23] City of San Francisco, *Showplace Square/Northeast Mission Historic Resource Survey*, www.sf-planning.org/index.aspx?page=2666.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

2014 LRDP

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites. Preliminary research suggests there may be the potential for the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites to contain paleontological resources. The EIR will analyze effects resulting from programs and projects at these campus sites.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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d) Disturb any human remains, including those interred outside of formal cemeteries?

2014 LRDP

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites. Preliminary research suggests that the Parnassus Heights and Mount Zion campus sites have a low sensitivity for the discovery of human remains and/or there is substantial modern ground disturbance that would have destroyed any possible remains, however the potential for uncovering human remains cannot be entirely discounted. Preliminary research suggests that the Mission Bay and Mission Center campus sites have a high sensitivity for the discovery of both prehistoric and historic-period human remains. The 2014 LRDP EIR will analyze effects resulting from these programs and projects at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

5.6 Geology, Soils and Seismicity

	2014 LRDP	*Parnassus Heights*					*Mission Bay*		*Mount Zion*			*Mission Center*	*Other UCSF Campus Sites*
Issues (and Supporting Information Sources):	*Land Use, Population, Space Needs,& CAP (Program)*	*Demolish 13 Existing Buildings (Project)*	*Renovate UC Hall (Project)*	*Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*	*Construct Replacement Hospital (Program)*	*Renovate Moffitt & Millberry Tower (Program)*	*Remaining & Increased Entitlement (Program)*	*New Housing (Project)*	*Demolish Hellman, Brunn & Dialysis (Project)*	*Renovate Main Hospital (Program)*	*Construct Office / Research Building (Program)*	*Construct Office Building (Program)*	*No Proposed Projects or Programs*
Would the project:													
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:													
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
ii) Strong seismic ground shaking?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
iii) Seismic-related ground failure, including liquefaction?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
iv) Landslides?	--	☒	☒	☒	☒	--	--	--	--	--	--	--	--
b) Result in substantial soil erosion or the loss of topsoil?	--	☒	☒	☒	☒	--	☒	☒	☒	--	☒	☒	--
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) (California Building Code), creating substantial risks to life or property?	--	--	--	--	--	--	--	--	--	--	--	--	--
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	--	--	--	--	--	--	--	--	--	--	--	--	--
f) Exceed the LRDP EIR standard of significance by exposing people to structural hazards in an existing building rated Level V (Poor), or Level VI (Very Poor), under the University's seismic performance rating system, or substantial nonstructural hazards?	--	--	☒	--	--	☒	--	--	--	☒	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Geology, Soils and Seismicity

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a.i) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

2014 LRDP

The San Francisco Bay Area contains both active and potentially active faults and is considered a region of high seismic activity. The nearest known active fault is the San Andreas fault, which near San Francisco trends offshore north of Colma, and continues northwest through the Pacific Ocean approximately six miles due west of the Golden Gate Bridge. Multiple other active faults are located within 50 miles of the city, including the Calaveras, Hayward and San Gregorio faults. The San Andreas Fault system has been the source of numerous moderate to large magnitude historical earthquakes that caused strong ground shaking in the project area, including the 1906 San Francisco and 1989 Loma Prieta earthquakes. Future strong ground shaking from nearby large-magnitude earthquakes is a virtual certainty and should be a consideration in the design of the new project facilities and components. The current version of the California Building Code (CBC) is the 2007 edition, which is based on the 2006 International Building Code, with the incorporation of additional requirements for seismic design of structures. The guiding principle (Basic Policy) of the UC Seismic Safety Policy is "to acquire, build, maintain, and rehabilitate buildings and other facilities which provide an acceptable level of earthquake safety." With adherence to the UC Seismic Safety Policy, any new or renovated structures would be designed and constructed to current seismic standards.

All of the potential effects from fault rupture occur only as a result of activities that occur at specific campus sites, as a result of proposed LRDP programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The Parnassus Heights campus site is located on a bedrock outcrop of the Franciscan Complex, a mix of chert, greenstone, meta-sandstone and shale. The campus is not within an Alquist-Priolo Special Studies zone, but it is subject to ground shaking in the event of an earthquake. The proposed demolition, construction, utilities/retaining walls/streetscaping work and renovation activities at the Parnassus Heights campus site could expose persons or structures to loss, injury, or death due to rupture of a known earthquake fault. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from fault rupture.

Mission Bay

The Mission Bay campus site is underlain by a mélange of native alluvium, dune sands and weathered rocks of the Franciscan Complex as well as artificial fill that was placed at the site around the turn of the 20th century. The campus site is not within an Alquist-Priolo Special Studies zone, but it is subject to ground shaking in the event of an earthquake. Proposed entitlement and housing development activities at the Mission Bay campus site could expose persons or structures to loss, injury, or death due to rupture of a known earthquake fault. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from fault rupture.

Mount Zion

The Mount Zion campus site is underlain by sands and sandstones of the Franciscan Complex. The campus site is not within an Alquist-Priolo Special Studies zone, but it is subject to ground shaking in the event of an earthquake. Proposed demolition, renovation and construction activities at the Mount Zion campus site could expose persons or structures to loss, injury, or death due to rupture of a known earthquake fault. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from fault rupture.

Mission Center

The Mission Center campus site is underlain by sands and sandstones of the Franciscan Complex. The campus site is not within an Alquist-Priolo Special Studies zone, but it is subject to ground shaking in the event of an earthquake. Proposed construction activities at the Mission Center campus site could expose persons or structures to loss, injury, or death due to rupture of a known earthquake fault. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from fault rupture.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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a.ii) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

See a.i), above. The entire City of San Francisco, including Parnassus Heights, Mission Bay, Mount Zion and Mission Center are located in an area with a high probability of exceeding peak horizontal ground motion, as mapped by the CGS Probabilistic Seismic Hazard Assessment (CGS 2008). Proposed activities at the campus sites could put people or structures at risk of loss, injury,

or death involving strong seismic ground shaking. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from strong seismic ground shaking.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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a.iii) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

2014 LRDP

Liquefaction is the process by which saturated, generally unconsolidated soils behave in a semi-solid or liquid manner due to seismic activity. All of the potential effects due to liquefaction occur only as a result of activities that occur at specific campus sites, as a result of LRDP proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The CGS has mapped the Parnassus Heights campus site as having a low risk of liquefaction from seismic ground shaking. Nevertheless, the campus site is located within the City's Special Geologic Area for potential ground failure hazards. Proposed entitlement and housing development activities at the Parnassus Heights campus site could affect exposure of persons or structures to loss, injury, or death due to seismic-related ground failure, including liquefaction. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from seismic-related ground failure.

Mission Bay

The CGS has mapped the Mission Bay campus site as having a moderate to high risk of liquefaction from seismic ground shaking, and the campus is located within the City's Special Geologic Area for potential ground failure hazards. Proposed entitlement and housing development activities at the Mission Bay campus site could affect exposure of persons or structures to loss, injury, or death due to seismic-related ground failure, including liquefaction. As the Mission Bay campus site has developed, UCSF has been implementing a long-term program of surcharging to reduce the potential for any land subsidence or potential for liquefaction. Proposed development at Mission Bay, and the surrounding area adjacent to these areas, would likely be surcharged before any future construction. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from seismic-related ground failure and liquefaction.

Mount Zion

The CGS has mapped the Mount Zion campus site as having a moderate risk of liquefaction from seismic ground shaking. Proposed demolition, renovation and construction activities at the Mount Zion campus site could affect exposure of persons or structures to loss, injury, or death due to seismic-related ground failure, including liquefaction. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from seismic-related ground failure and liquefaction.

Mission Center

The CGS has mapped the Mission Center campus site as having a moderate to high risk of liquefaction from seismic ground shaking, and the building is located within the City's Special Geologic Area for potential ground failure hazards. Proposed construction activities at the Mission Center campus site could affect exposure of persons or structures to loss, injury, or death due to seismic-related ground failure, including liquefaction. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from seismic-related ground failure and liquefaction.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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a.iv) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

2014 LRDP

Landslides occur when slopes suddenly move from a stable to unstable condition, and can be triggered by a broad range of conditions including seismic activity, surface water runoff, groundwater conditions, and more. All of the potential effects due to landslides occur only as a result of activities that occur at specific campus sites, as a result of proposed LRDP programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The Parnassus Heights campus site is located within the City's Special Geologic Area for potential ground failure hazards and the CGS Seismic Hazard Zone for landslides. The proposed demolition, construction, utilities/retaining walls/streetscaping work, and renovation activities at the Parnassus Heights campus site could affect exposure of persons or structures to loss, injury, or death due to landslides. The 2014 LRDP EIR will assess the potential for substantial adverse effects resulting from landslides.

Mission Bay, Mount Zion and Mission Center

The remaining UCSF campuses are not mapped in hazard zones for landslides. There are no proposed projects or programs at these sites that could affect the potential for substantial adverse effects resulting from landslides. No impact would occur and this criterion will not be analyzed in the EIR for these campus sites.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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b) Result in substantial soil erosion or the loss of topsoil?

See Section 5.9, Hydrology and Water Quality, below. The proposed demolition, construction and utilities/retaining walls/streetscaping work at the Parnassus Heights campus site as well as development activities at the Mission Bay, Mount Zion, and Mission Center campus sites could potentially generate surface water runoff that could lead to substantial soil erosion or the loss of topsoil. Section 5.9 discusses the Stormwater Pollution Prevention Programs (SWPPPs) and Best Management Practices (BMPs) aimed at minimizing or preventing erosion and loss of topsoil. The 2014 LRDP EIR will assess the potential for substantial soil erosion and loss of topsoil from proposed activities.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

See a), above. The UCSF campus sites, particularly Parnassus Heights and Mission Bay, are located on geologic units and soils that could become unstable as a result of proposed activities. The 2014 LRDP EIR will assess the potential for substantial harm resulting from geologic and soil instability, including on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) (California Building Code), creating substantial risks to life or property?

Expansive soils are defined as those that shrink when dry and swell when moist; they typically contain a high proportion of clay particles. In general, soils in San Francisco are not expansive, and past geotechnical investigations at the UCSF campus sites have not revealed the presence of expansive soils. As described above, the University requires all new facilities to adhere to the current CBC, which includes detailed provisions to ensure that the design of new facilities is appropriate to site soil conditions, including requirements to address expansive and otherwise problematic soils. With adherence to the CBC, impacts related to site soil conditions due to proposed 2014 LRDP activities – including but not limited to expansive soils, if any are present – would be less than significant.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The 2014 LRDP does not propose any activities that would require the utilization of septic systems or alternative wastewater disposal systems. Therefore, there are no anticipated adverse effects from wastewater disposal associated with any of the programs or projects proposed by the 2014 LRDP and this criterion will not be analyzed in the EIR.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated

buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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f) Exceed the LRDP EIR standard of significance by exposing people to structural hazards in an existing building rated Level V (Poor), or Level VI (Very Poor), under the University's seismic performance rating system, or substantial nonstructural hazards?

2014 LRDP

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights and Mount Zion

Proposed renovations of UC Hall, Moffitt Hospital and Millberry Union towers at Parnassus Heights, and the main hospital at Mount Zion, would be analyzed in the EIR for this criterion.

Other UCSF Campus Sites

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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5.7 Greenhouse Gas Emissions

	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
Issues (and Supporting Information Sources):	*Land Use, Population, Space Needs,& CAP (Program)*	*Demolish 13 Existing Buildings (Project)*	*Renovate UC Hall (Project)*	*Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*	*Construct Replacement Hospital (Program)*	*Renovate Moffitt & Millberry Tower (Program)*	*Remaining & Increased Entitlement (Program)*	*New Housing (Project)*	*Demolish Hellman, Brunn & Dialysis (Project)*	*Renovate Main Hospital (Program)*	*Construct Office / Research Building (Program)*	*Construct Office Building (Program)*	*No Proposed Projects or Programs*
Would the project:													
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Greenhouse Gas Emissions

Standards of Significance

The BAAQMD has published significance thresholds in the *BAAQMD CEQA Air Quality Guidelines*[24] in order to identify projects that would individually and cumulatively have significant impact on local air quality. Proposed projects that do not exceed the thresholds would not be considered as having a significant impact on the attainment of air quality goals and would therefore be consistent with the current air quality plan. The guidelines also provide guidance and significance thresholds for evaluating the impact of a project's greenhouse gas (GHG) emissions.

Significance thresholds established by the BAAQMD for GHG emissions are listed below in **Table 5**, Summary of BAAQMD GHG CEQA Significance Thresholds.

TABLE 5
SUMMARY OF BAAQMD GHG CEQA SIGNIFICANCE THRESHOLDS

	2011 Construction-Related Thresholds of Significance	2011 Operational Thresholds of Significance
		Annual Emissions (Metric tons CO_2e/year)
Greenhouse Gases		
Project Level Bright line Threshold	N.A.	1,100
Project Level Efficiency Threshold	N.A.	4.6 per service population
Plan Level Efficiency Threshold	N.A.	6.6 per service population
Stationary Source Threshold	N.A.	10,000

SOURCE: BAAQMD, 2011.

The guidelines recommend only quantifying and reporting GHG emissions from construction activities, and do not provide significance thresholds. Operational emissions may be compared to an absolute threshold of 1,100 metric tons of carbon dioxide equivalents per year (CO_2e/yr) or an efficiency standard of 4.6 metric tons CO_2e/yr for each Service Person (residents plus employees) associated with the proposed project. A third option is compliance with a qualified GHG reduction strategy. A qualified GHG reduction strategy is an element of the proposed 2014 LRDP. For stationary-source projects, the threshold is 10,000 metric tons CO_2e/yr. Stationary-source projects include land uses that accommodate processes and equipment, such as a back-up diesel generator, that would emit GHG emissions and require a BAAQMD permit to operate.

As discussed above in Section 5.2, *Air Quality*, these BAAQMD thresholds are in dispute and are not being recommended for use by the BAAQMD. However, the University has examined the information in the District's guidelines and other evidence and has determined that it will use the District's efficiency threshold to evaluate the impacts of the proposed project. The overall

[24] Bay Area Air Quality Management District, *BAAQMD CEQA Air Quality Guidelines*, Updated May 2011.

regulatory basis for greenhouse gas emission control in California is Assembly Bill 32 (AB 32), which was signed into law in 2006. AB 32 requires overall greenhouse gas emissions rates in California to be reduced to match 1990 emission rates by the year 2020. The responsibility for meeting these goals lies with the local air districts, including the BAAQMD. Accordingly, the BAAQMD developed the thresholds presented in Table 5 to meet the requirements of AB 32 using the emissions sources and growth projections for the Bay Area. Based on land use GHG emissions targets and population and employment projections, the GHG threshold of 4.6 metric tons CO_2e/yr for each Service Person represents an emission rate at which the Bay Area would meet its AB 32 goals. As the technical work supporting the thresholds has not been challenged in the court decision on the validity of the thresholds, it is assumed that the thresholds are still relevant for demonstrating compliance with AB 32 and thus a suitable measure of significance for the proposed 2014 LRDP.

Further, other air districts in California have proposed similar efficiency thresholds, specifically the South Coast Air Quality Management District and the Monterey Bay Unified Air Pollution Control District. The South Coast Air Quality Management District has draft CEQA guidelines for greenhouse gases that include an efficiency threshold of 4.8 metric tons CO_2e/yr per Service Person. The Monterey Bay Unified Air Pollution Control District has proposed and is currently considering an efficiency threshold of 6.6 metric tons CO_2e/yr per Service Person for long-range development plans and 4.6 metric tons CO_2e/yr per Service Person for land use development projects. Therefore, there is substantial evidence to support the use of the efficiency threshold of 6.6 metric tons CO_2e/yr per Service Person for the LRDP at the Plan level and 4.6 metric tons CO_2e/yr per Service Person at the project level for individual elements; these thresholds will be applied to evaluate the GHG emission impacts of the LRDP.

Discussion of Potential Impacts

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

2014 LRDP

The 2014 LRDP EIR will examine the overall Plan-wide incremental increase in vehicle and stationary source GHG emissions with respect to the Plan-level GHG threshold of 6.6 metric tons of CO_2e per year per Service Person.

Parnassus Heights

The demolition of 13 existing buildings at the Parnassus Heights campus site will result in short-term construction-related GHG emissions, which will be quantified in the LRDP EIR. Some of the buildings to be demolished have older air conditioning units with high leakage rates for refrigerants and replacement of these structures would result in a decrease in refrigerant GHG emissions. Emissions associated with operation of the replacement hospital would be assessed. The 2014 LRDP EIR will examine the increase in operational emissions associated with proposed changes at the Parnassus Heights campus site with respect to the project-level GHG threshold of 4.6 metric tons of CO_2e per year for each Service Person potential.

Mission Bay

1.45 million gsf of development may be developed at the Mission Bay campus site by 2035. GHG emissions associated with construction and operation of the Phase 2 hospital could also exceed BAAQMD thresholds based on the size (square footage) of the proposed building that exceeds the size-based screening criteria for hospital uses contained in BAAQMD's 2011 CEQA Guidelines for both operational GHG emissions. The 2014 LRDP EIR will examine the increase in operational emissions associated with proposed changes at the Mission Bay campus site with respect to the project-level GHG threshold of 4.6 metric tons of CO_2e per year for each Service Person potential.

Mount Zion

The demolition of three existing buildings at the Mount Zion campus site will result in temporary construction-related GHG emissions which will be quantified in the 2014 LRDP EIR. Potential development of the Mount Zion campus site would include building(s) of up to approximately 257,300 gsf and up to 185 parking stalls. Quantitative analysis of all emissions will be conducted as part of the analysis for the LRDP EIR and will be used to determine if these elements would result in significant GHG emissions.

Mission Center

Potential development of the Mission Center campus site would include a medical office structure of approximately 100,000 gsf and a 294-stall parking garage. Quantitative analysis of all emissions will be conducted as part of the analysis for the LRDP EIR and will be used to determine if these elements would result in significant GHG emissions.

Other UCSF Campus Sites

No projects or programs are proposed at other UCSF campus sites. There would be no change in GHG emissions.

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b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

2014 LRDP

The 2014 LRDP will include a GHG reduction strategy. The GHG reduction strategy will include measures that can be applied to individual projects, as appropriate, with the goal of limiting and/or incrementally reducing or offsetting the University's GHG emissions over time. The University intends to use the GHG reduction strategy (and the LRDP EIR analysis of the GHG reduction strategy) to provide coverage for the LRDP as a whole and for individual projects that may arise over the course of the LRDP, to the horizon year 2035 and its GHG threshold of 6.6 metric tons of CO_2e per year potential. The LRDP EIR will qualitatively discuss this strategy as a means of demonstrating that individual LRDP projects and programs would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHGs.

Parnassus Heights

The 2014 LRDP EIR will qualitatively discuss how the demolition of 13 existing buildings at Parnassus Heights would be consistent with the UCSF GHG reduction strategy and therefore, would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHGs.

Mission Bay

The 2014 LRDP EIR will qualitatively consider whether the additional Mission Bay development not entitled under the existing LRDP, as well as construction of the new residential project, would be consistent with the UCSF GHG reduction strategy and therefore, would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHGs.

Mount Zion

The 2014 LRDP EIR will qualitatively discuss whether the demolition of three existing buildings at the Mount Zion campus site would be consistent with the UCSF GHG reduction strategy and therefore, would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHGs.

Mission Center

Potential development at Mission Center would include an office building and parking garage. The 2014 LRDP EIR will qualitatively discuss whether this development at Mission Center would be consistent with the UCSF GHG reduction strategy and therefore, would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHGs

Other UCSF Campus Sites

No projects or programs are proposed at other UCSF campus sites. There would be no change in GHG emissions.

5.8 Hazards and Hazardous Materials

		2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
Issues (and Supporting Information Sources):		Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:														
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	--	--	--	--	--	--	--	--	--	--	--	--	--
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	--	--	--	--	--	--	☒	☒	--	--	--	--	--
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	--	☒	--	☒	☒	--	--	--	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Hazards and Hazardous Materials

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

All of the potential effects regarding hazardous materials would occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. The 2014 LRDP EIR will analyze effects resulting from these programs and projects at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

There are no public use airports within two miles of the City of San Francisco. Both San Francisco International Airport and Oakland International Airport are over five miles from the City limit. No impact would occur and this criterion will not be discussed in the EIR.

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f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

The only UCSF campus site within two miles of a private airstrip is Mission Bay. On completion of the current construction, UCSF will operate an active helipad at the UCSF Medical Center at Mission Bay. The proposed facilities that would be closest to this helipad will be the proposed buildings constructed under the remaining and increased entitlement, including the new housing at the Mission Bay campus site. The 2014 LRDP EIR will address operational heliport effects only at the Mission Bay campus site. No impact would occur at other campus sites.

---

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Development under the 2014 LRDP could potentially exceed the UCSF emergency response capabilities, which could impair implementation of its emergency response plan or emergency evacuation plan. The 2014 LRDP EIR will characterize the UCSF emergency response plans and capabilities, and will assess the effects of growth under the LRDP on UCSF's ability to manage emergencies in a campus-wide context as well as specifically related to proposed development at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The Mount Sutro Open Space Reserve Management Plan at Parnassus Heights indicates that, as with any monocultural (i.e. single species) forest, the trees of the reserve are particularly prone to widespread disease and wildfire. The use of heavy construction equipment during demolition and construction activities adjacent to the reserve could increase the risk of fire. This criterion will be evaluated only for the Parnassus Heights campus site in the 2014 LRDP EIR.

References

UCSF, *Draft EIR for the UCSF Mount Sutro Management Project*, City of San Francisco, prepared by UCSF Financial and Administrative Services Planning, January 2013.

5.9 Hydrology and Water Quality

Issues (and Supporting Information Sources):	*2014 LRDP*	*Parnassus Heights*					*Mission Bay*		*Mount Zion*			*Mission Center*	*Other UCSF Campus Sites*
	Land Use, Population, Space Needs,& CAP (Program)	*Demolish 13 Existing Buildings (Project)*	*Renovate UC Hall (Project)*	*Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*	*Construct Replacement Hospital (Program)*	*Renovate Moffitt & Millberry Tower (Program)*	*Remaining & Increased Entitlement (Program)*	*New Housing (Project)*	*Demolish Hellman, Brunn & Dialysis (Project)*	*Renovate Main Hospital (Program)*	*Construct Office / Research Building (Program)*	*Construct Office Building (Program)*	*No Proposed Projects or Programs*
Would the project:													
a) Violate any water quality standards or waste discharge requirements?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	--	--	--	--	--	--	--	--	--	--	--	--	--
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?	--	☒	--	☒	☒	--	☒	☒	☒	--	☒	☒	--
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?	--	☒	--	☒	☒	--	☒	☒	☒	--	☒	☒	--
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	--	☒	--	☒	☒	--	☒	☒	☒	--	☒	☒	--
f) Otherwise substantially degrade water quality?	--	☒	--	☒	☒	--	☒	☒	☒	--	☒	☒	--
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	--	--	--	--	--	--	☒	☒	--	--	--	--	--
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	--	--	--	--	--	--	☒	☒	--	--	--	--	--
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	--	--	--	--	--	--	☒	☒	--	--	--	--	--
j) Inundate by seiche, tsunami, or mudflow?	--	☒	--	☒	☒	--	☒	☒	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Hydrology and Water Quality

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. Standard mitigation includes preparation of a Storm Water Pollution Prevention Plan (SWPP) when required, including Best Management Practices to avoid erosion and minimize sedimentation.

Discussion of Potential Impacts

a) Violate any water quality standards or waste discharge requirements?

2014 LRDP

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed LRDP programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

Surface water runoff from the Parnassus Heights campus site drains into a combined storm drain system that flows to the City's Oceanside Water Pollution Control Plant (OWPCP) at Ocean Beach on the City's western shoreline. OWPCP has a permit from the National Pollutant Discharge Elimination System (NPDES) program administered by the Regional Water Quality Control Board (RWQCB) that regulates discharge from the plant to the Pacific Ocean. The OWPCP meets all the dry- and wet-weather effluent discharge standards described in NPDES Permit No. CA0037681 and State Water Resources Control Board (SWRCB) Water Quality Order No. R2-2009-0062.

The proposed demolitions, construction, utilities/retaining walls/streetscaping work and renovation activities at the Parnassus Heights campus site could potentially generate surface water runoff with elevated levels of sediment and urban contaminants such as oil, grease, metals, pesticides, herbicides and entrained dust. This runoff could violate water quality standards and/or waste discharge requirements established in the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Permit No. CAS000002 and SWRCB Water Quality Order No. 2009-0009-DWQ. Under this permit, the proposed activities at the Parnassus Heights campus site would necessitate development of a Stormwater Pollution Prevention Plan (SWPPP) that establishes Best Management Practices (BMPs) to protect storm water quality. Subsequent amendments to this permit (SWRCB Water Quality Orders No. 2010-0014-DWQ and 2012-0006-DWQ) specify post-construction runoff reduction requirements. The San Francisco Public Utilities Commission (SFPUC), which operates the combined sewer system, has developed a suite of design solutions for construction projects (the *San Francisco Stormwater Design Guidelines*, published in 2009) aimed at achieving compliance with stormwater management requirements; it is expected that work initiated under the LRDP will satisfy these guidelines.

The 2014 LRDP EIR will characterize Parnassus Heights campus site stormwater runoff and wastewater discharge, identify applicable water quality standards and waste discharge requirements, and evaluate the compliance of the 2014 LRDP with applicable standards and/or requirements. The 2014 LRDP EIR will also address the project-specific water quality effects associated with the proposed activities at the Parnassus Heights campus site.

Mission Bay

Unlike the other areas covered in the 2014 LRDP, the Mission Bay campus site has its own storm drain system separate from the combined sewer system in most of the rest of the City. This system is classified as a Municipal Separate Storm Sewer System, more commonly known as an "MS4," and is regulated under a different NPDES General Permit, No. CAS000004, and SWRCB Water Quality Order No. 2003-0005-DWQ.

The proposed remaining and increased entitlement and the housing development activities at the Mission Bay campus site could potentially generate surface water runoff with elevated levels of sediment and urban contaminants such as oil, grease, metals, pesticides, herbicides and entrained dust. This runoff could violate water quality standards and/or waste discharge requirements established in the MS4 Permit as well as the NPDES General Permit for Construction described above. Development at Mission Bay will also necessitate development of an SWPPP with appropriate BMPs; it is also anticipated that the SFPUC *Stormwater Design Guidelines* will be integrated in this location as well.

The 2014 LRDP EIR will characterize Mission Bay stormwater runoff and wastewater discharge, identify applicable water quality standards and waste discharge requirements, and evaluate if the 2014 LRDP would result in violation of applicable standards and/or requirements. The 2014 LRDP EIR will also address the project-specific water quality effects associated with the proposed activities at the Mission Bay campus site.

Mount Zion

Surface water runoff from the Mount Zion campus site drains into a combined storm drain system that flows to the City's Southeast Water Pollution Control Plant.

The 2014 LRDP EIR will characterize Mount Zion campus site stormwater runoff and wastewater discharge, identify applicable water quality standards and waste discharge requirements, and evaluate the compliance of the 2014 LRDP with applicable standards and/or requirements. The 2014 LRDP EIR will also address the project-specific water quality effects associated with the proposed activities at the Mount Zion campus site.

Mission Center

Surface water runoff from the Mission Center campus site drains into a combined storm drain system that flows to the City's Southeast Water Pollution Control Plant.

The 2014 LRDP EIR will characterize Mission Center campus site stormwater runoff and wastewater discharge, identify applicable water quality standards and waste discharge

requirements, and evaluate the compliance of the 2014 LRDP with applicable standards and/or requirements. The 2014 LRDP EIR will also address the project-specific water quality effects associated with the proposed activities at the Mission Center campus site.

Other UCSF Campus Sites

There are no proposed projects or programs at other UCSF campus sites that could violate water quality standards or waste discharge requirements.

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b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

None of the proposed projects under the 2014 LRDP will result in groundwater extraction or otherwise affect groundwater resources. No impact would occur and this criterion will not be discussed in the EIR.

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c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?

2014 LRDP

Implementation of the 2014 LRDP would not alter the course of a stream or river. However, development under the 2014 LRDP would alter drainage patterns of campus sites (during and/or after ground-disturbing activities), which could result in increased potential for erosion or siltation. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The proposed demolition of 13 buildings, utilities/retaining walls/streetscaping work, and replacement hospital construction at Parnassus Heights would change drainage patterns and could potentially result in erosion and siltation off-site. The 2014 LRDP EIR will evaluate potential impacts related to increased erosion and siltation, and address the project-specific effects on drainage patterns and erosion associated with these projects.

The proposed renovation of UC Hall, Moffitt Hospital and the Millberry Union towers would not result in any changes to drainage patterns, and as such will have no impact on erosion or siltation off-site

Mission Bay

The proposed entitlement/housing development at Mission Bay would change drainage patterns and could potentially result in erosion and siltation on- or off-site. The 2014 LRDP EIR will evaluate potential impacts related to increased erosion and siltation, and address the project-specific effects on drainage patterns and erosion associated with these projects.

Mount Zion

The proposed demolition of the Hellman, Brunn and Dialysis buildings as well as the proposed construction of an office/research building would change drainage patterns and could potentially result in erosion and siltation on- or off-site. The 2014 LRDP EIR will evaluate potential impacts related to increased erosion and siltation, and address the project-specific effects on drainage patterns and erosion associated with these projects.

The proposed renovation of the main hospital at Mount Zion would not result in any changes to drainage patterns, and as such will have no impact on erosion or siltation off-site.

Mission Center

The proposed construction of an office building and parking structure at Mission Center would change drainage patterns and could potentially result in erosion and siltation on- or off-site. The 2014 LRDP EIR will evaluate potential impacts related to increased erosion and siltation, and address the project-specific effects on drainage patterns and erosion associated with this project.

Other UCSF Campus Sites

There are no proposed projects or programs at other UCSF campus sites that could change drainage patterns or result in siltation or erosion on- or off-site.

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d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

2014 LRDP

Implementation of the 2014 LRDP would not alter the course of a stream or river. However, development under the 2014 LRDP would alter drainage patterns on campus sites (during and/or after ground disturbing activities), which could increase the potential for flooding on- or off-site. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The 2014 LRDP EIR will evaluate potential impacts of the proposed demolition of 13 buildings, utilities/retaining walls/streetscaping work, and replacement hospital construction at Parnassus Heights related to changed drainage patterns and potential for flooding.

The proposed renovation of UC Hall and Moffitt and Millberry Tower would not result in any changes to drainage patterns, and as such will have no impact on flooding.

Mission Bay

The 2014 LRDP EIR will evaluate potential impacts of the proposed entitlement/housing development at Mission Bay related to changed drainage patterns and flooding.

Mount Zion

The 2014 LRDP EIR will evaluate potential impacts of the proposed demolition of the Hellman, Brunn and Dialysis buildings as well as the proposed construction of an office/research building related to changed drainage patterns and flooding.

The proposed renovation of the main hospital at Mount Zion would not result in any changes to drainage patterns, and as such will have no impact on flooding.

Mission Center

The 2014 LRDP EIR will evaluate potential impacts of the proposed construction of an office building and parking structure at Mission Center related to changed drainage patterns and flooding.

Other UCSF Campus Sites

There are no proposed projects or programs at other UCSF campus sites that could change drainage patterns or result in flooding on- or off-site.

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e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

2014 LRDP

As discussed in Items (a) and (d) above, development under the 2014 LRDP would increase impervious surfaces, which could increase the volume of surface water runoff and increase levels of urban contaminants in stormwater. The 2014 LRDP EIR will evaluate whether the existing/planned drainage system could accommodate increased runoff generated as a result of development under the 2014 LRDP, and it will evaluate potential impacts associated with stormwater pollution. All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The proposed demolition of 13 buildings, utilities/retaining walls/streetscaping work, and replacement hospital construction at Parnassus Heights would could potentially result in

additional sources of polluted runoff during demolition or construction. As discussed in (a) above, the 2014 LRDP EIR will evaluate potential impacts related to water quality and stormwater runoff.

The proposed work at the Parnassus Heights campus site will not result in a net increase of impervious surface area over existing conditions, so there will be no impact to the stormwater drainage system.

Mission Bay

The proposed entitlement and housing development, and the parking structure at the Mission Bay campus site could potentially result in additional sources of polluted runoff during and after construction. In addition, the proposed development would result in a net increase of impervious surface that could increase the volume of surface water runoff. The 2014 LRDP EIR will evaluate whether the existing/planned drainage system could accommodate increased runoff generated as a result of development under the 2014 LRDP, and it will evaluate potential impacts associated with stormwater pollution.

Mount Zion

The proposed demolition, renovation and construction at the Mount Zion campus site could potentially result in additional sources of polluted runoff during and after construction. As discussed in (a) above, the 2014 LRDP EIR will evaluate potential impacts related to water quality and stormwater runoff.

The proposed work at the Mount Zion campus site will not result in a net increase of impervious surface area over existing conditions, so there will be no impact to the stormwater drainage system.

Mission Center

The proposed office building development activities at the Mission Center campus could potentially result in additional sources of polluted runoff during and after construction. In addition, the proposed development would result in a net increase of impervious surface that could increase the volume of surface water runoff. The 2014 LRDP EIR will evaluate whether the existing/planned drainage system could accommodate increased runoff generated as a result of development under the 2014 LRDP, and it will evaluate potential impacts associated with stormwater pollution.

Other UCSF Campus Sites

There are no proposed projects or programs at other UCSF campus sites that could generate additional polluted runoff or change drainage patterns that could affect storm water drainage systems.

f) Otherwise substantially degrade water quality?

2014 LRDP

Potential sources of water quality degradation under the 2014 LRDP are discussed in items (a), (c), and (e) above.

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g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

None of the proposed activities in the 2014 LRDP will place housing with a 100-year flood hazard area as mapped on a current federal Flood Hazard Boundary or Flood Insurance Rate Map**.** The federal Flood Hazard Boundaries and Flood Insurance Rate Maps for San Francisco are currently being revised. The revisions will inform whether proposed development at Mission Bay will place housing within an area that is potentially subject to inundation by sea level rise (SLR). The most recent guidance from the Bay Conservation and Development Commission (BCDC) places discrete portions of the Mission Bay campus site at risk of inundation by 2050 (anticipated sea level rise of 16 inches) and most of the campus at risk by 2100 (55 inches of sea level rise) (BCDC 2009). However, the BCDC estimates are based on older elevation data for the site, prior to 2000 when redevelopment and re-grading of the Mission Bay site was by initiated by UCSF and the overall elevation of the site was raised by several feet. The 2014 LRDP EIR will assess the potential effects of sea level rise and attendant flood hazards on the proposed programs and projects at the Mission Bay campus site.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

See item (g); proposed development of the Mission Bay campus site could put structures in an area subject to inundation by future sea level rise. The 2014 LRDP EIR will assess the potential effects of sea level rise and attendant flood flows on the proposed programs and projects at the Mission Bay campus site.

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i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

See item (g); proposed development of the Mission Bay campus site could expose people or structures to a risk of loss, injury, or death from flooding due to sea level rise and compounding factors such as storms, tsunamis and other events. The 2014 LRDP EIR will assess the potential effects of sea level rise and attendant flood flows on the proposed programs and projects at the Mission Bay campus site.

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j) Inundate by seiche, tsunami, or mudflow?

2014 LRDP

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

Parnassus Heights

The Parnassus Heights campus site is located at the foot of Mount Sutro, a steep-sided hill with shallow soils prone to slope failures and landslides. The proposed demolition of 13 buildings, utilities/retaining walls/streetscaping work, and hospital replacement activities at the Parnassus Heights campus site could potentially put people and structures at risk of inundation by mudflow. The 2014 LRDP EIR will assess the potential impacts of proposed activities on mudflows as well as ground stability and geotechnical conditions (see Section 5.6, above).

Mission Bay

As discussed in item (g), proposed entitlement/housing development at the Mission Bay campus site could put people and structures in the path of seiches and tsunamis within 100 years due to sea level rise. The 2014 LRDP EIR will assess the potential effects of sea level rise and attendant flood hazards on the proposed programs and projects at the Mission Bay campus site.

Mount Zion, Mission Center and Other UCSF Campus Sites

No proposed activities at the Mount Zion, Mission Center, or other UCSF campuses will place people or structures at risk of inundation by seiche, tsunami, or mudflow.

5.10 Land Use and Planning

		2014 LRDP	*Parnassus Heights*					*Mission Bay*		*Mount Zion*			*Mission Center*	*Other UCSF Campus Sites*
Issues (and Supporting Information Sources):		*Land Use, Population, Space Needs,& CAP (Program)*	*Demolish 13 Existing Buildings (Project)*	*Renovate UC Hall (Project)*	*Utilities, Retaining Walls, Saunders Court & Streetscape (Project)*	*Construct Replacement Hospital (Program)*	*Renovate Moffitt & Millberry Tower (Program)*	*Remaining & Increased Entitlement (Program)*	*New Housing (Project)*	*Demolish Hellman, Brunn & Dialysis (Project)*	*Renovate Main Hospital (Program)*	*Construct Office / Research Building (Program)*	*Construct Office Building (Program)*	*No Proposed Projects or Programs*
Would the project:														
a)	Physically divide an established community?	--	--	--	--	--	--	--	--	--	--	--	--	--
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	--	--	--	--	--	--	--	--	--	--	--	--	--
d)	Exceed an LRDP EIR standard of significance by being substantially incompatible with existing land uses, or by substantially conflicting use, density, height and bulk restrictions of local zoning, although UCSF is exempt from such restrictions?	☒	--	☒	--	☒	☒	☒	☒	--	☒	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Land Use and Planning

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. For impact questions b and d, please see below for more explanation of the significance standard. In addition, local land use policies are taken into consideration in UCSF planning efforts.

Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. However, UCSF reviews local land use policies as planning guidelines and as the basis for determining land use and planning impacts under CEQA. Further, UCSF cooperates with local planning agencies in matters of mutual concern. Based on these policies, the LRDP would have a significant adverse land use or planning impact if the proposed LRDP development and uses would:

- substantially conflict with the adopted environmental goals, plans and policies of the local planning jurisdiction;
- substantially conflict with the use designations, height and bulk, and density restrictions of local zoning; or
- be substantially incompatible with existing land uses.

Discussion of Potential Impacts

a) Physically divide an established community?

Implementation of the 2014 LRDP, or any of the individual projects or programs proposed under the LRDP, would have no potential to physically divide an established community. No development outside of established campus properties is proposed, and no incursion into, or division of, surrounding residential communities would occur. The campus sites would remain as distinct educational and medical land uses that are woven into the fabric of the surrounding neighborhoods. Campus boundaries for each campus site would not change as a result of the LRDP. No physical barriers such as roads or other infrastructure that would divide an established community are proposed. No impact would occur and no additional analysis is required.

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b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

The 2014 LRDP would be the applicable land use plan for the campus through 2035. The EIR will evaluate any proposed land use changes for consistency with the LRDP. Land within the City of San Francisco's jurisdiction is subject to plans, policies and zoning controls that regulate future

development proposals and mitigate certain environmental effects. Although UCSF is not under the jurisdiction of the City of San Francisco, the 2014 LRDP EIR will evaluate the potential for growth under the LRDP to directly or indirectly conflict with these policies.

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c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No habitat conservation plan or natural community conservation plan has been adopted that is applicable to the UCSF campus sites. No impact would occur and this topic will not be analyzed in the EIR.

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d) Exceed an LRDP EIR standard of significance by being substantially incompatible with existing land uses, or by substantially conflicting use, density, height and bulk restrictions of local zoning, although UCSF is exempt from such restrictions?

Land within the City of San Francisco's jurisdiction is subject to plans, policies and zoning controls that regulate the timing and location of future development proposals and mitigate certain environmental effects. Although UCSF is not under the City's jurisdiction, the 2014 LRDP EIR will evaluate the potential for growth under the LRDP to directly or indirectly conflict with these plans, policies and zoning controls. Demolition of buildings as well as other infrastructure improvements proposed at Parnassus Heights and Mount Zion would not be incompatible with existing land uses or conflict with building regulations; therefore, no impact would occur and these activities will not be analyzed in the EIR.

5.11 Mineral Resources

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	--	--	--	--	--	--	--	--	--	--	--	--	--
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	--	--	--	--	--	--	--	--	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Mineral Resources

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

None of the UCSF campus sites is located in areas of known mineral resources or would otherwise conflict with mineral resources recovery. No impacts on mineral resources would occur. Therefore, no further study of mineral resources is necessary and this topic will not be analyzed in the EIR.

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5.12 Noise

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	--	--	☒	☒	☒	☒	☒	☒	--	☒	☒	☒	--
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	--	--	--	--	--	--	--	--	--	--	--	--	--
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	--	--	--	--	--	--	--	☒	--	--	--	--	--
g) Exceed an LRDP EIR standard of significance by contributing to an increase in average daily noise levels (Ldn) of 3 dB(A) or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use?	--	--	☒	☒	☒	☒	☒	☒	--	☒	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Noise

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. UCSF voluntarily complies with the City of San Francisco Noise Ordinance and uses the Noise Ordinance as a standard of significance. In addition, UCSF typically imposes as mitigation limits on construction hours that are more restrictive than the City's Noise Ordinance.

Discussion of Potential Impacts

a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?

2014 LRDP

All potential noise effects would occur only as a result of activities that occur at specific campus sites as a result of proposed LRDP programs and projects. These effects will be considered under the individual programs and projects that are listed under the appropriate campus sites.

As a program-level document the LRDP would address land use changes and development. While these changes may result in new noise sources or receptors, the potential noise impacts of these changes would be addressed individually for each project element in the 2014 LRDP EIR.

Parnassus Heights

The demolition of 13 existing buildings, renovation of buildings, and construction of the replacement hospital at the Parnassus Heights campus site will result in temporary construction-related noise. The LRDP will assess the construction-related noise exposure relative to standards of the City of San Francisco Noise Ordinance.

Construction of the replacement hospital would result in replacing some existing mechanical equipment that now serves the existing hospital, which could reduce operating noise levels compared to existing noise levels. The 2014 LRRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards.

Mission Bay

1.45 million gsf may be developed by 2035, including a Block 15 housing complex consisting of up to 668 beds in 523 units and totaling 398,700 gsf. The 2014 LRDP EIR will examine the potential for construction noise to exceed standards of the San Francisco Noise Ordinance. The 2014 LRDP EIR will also assess the land use compatibility of proposed new residential uses to State of California suggested noise standards.

Mount Zion

The demolition of the Hellman, Brunn, and Dialysis buildings and the construction of a new office / research building at the Mount Zion campus site will result in temporary construction

noise that will be addressed in the 2014 LRDP EIR with respect to City of San Francisco noise ordinance standards.

Mission Center

Potential development of the Mission Center site would include an office building of approximately 100,000 gsf and a 294-stall parking garage. Construction would result in temporary construction noise, as well as operating noise, that will be addressed in the 2014 LRDP EIR with respect to City of San Francisco noise ordinance standards.

Other UCSF Campus Sites

No projects or programs are proposed. No noise impacts would result.

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b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

2014 LRDP

As a program-level document the LRDP would address land use changes. Although the Parnassus Heights and Mission Bay campus sites are served by SF Muni light rail vehicles, there are no substantial vibration sources (i.e., "heavy-rail" railways) within 200 feet of planned land use changes. Beyond 200 feet, vibration from rail sources is considered to be unlikely to have a vibration impact on residential and hospital uses.[25] Consequently, vibration impacts of or to the LRDP are considered less than significant and will not be assessed in the 2014 LRDP EIR.

Parnassus Heights

The demolition of 13 existing buildings and construction of the replacement hospital at the Parnassus campus will result in temporary construction-related vibration. The LRDP EIR will assess the construction-related vibration impacts relative to Caltrans standards for building damage and human annoyance.

Construction of the replacement hospital would likely require pile driving. The 2014 LRDP EIR will examine the resultant vibration levels from pile driving proposed modifications relative to Caltrans standards for building damage and human annoyance.

Mission Bay

1.45 million gsf of development may occur by 2035, include a housing complex on Block 15. The 2014 LRDP EIR will examine the potential for construction activities to exceed Caltrans standards for building damage and human annoyance.

[25] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

Mount Zion

The demolition of three existing buildings and construction of one new building at the Mount Zion campus site will result in temporary construction noise that will be addressed in the 2014 LRDP EIR relative to Caltrans standards for building damage and human annoyance.

Mission Center

Potential development of the Mission Center site would include an office structure and parking garage. Construction would likely require pile driving. The 2014 LRRDP EIR will examine the resultant vibration levels from pile driving proposed modifications relative to Caltrans standards for building damage and human annoyance.

Other UCSF Campus Sites

No projects or programs are proposed. No impacts would result.

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c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

2014 LRDP

As a program-level document the LRDP would address land use changes. While these changes may result in new noise sources, the potential noise impacts of these changes would be addressed individually for project elements in the 2014 LRDP EIR.

Parnassus Heights

Operation of the replacement hospital would result in changes to existing rooftop mechanical equipment in the area which could reduce noise from that source relative to existing noise conditions. Localized traffic redistribution may result in increased noise levels along some roadways. The 2014 LRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards and overall increase in ambient noise from traffic.

Mission Bay

The proposed additional development may include a housing complex on Block 15. Localized traffic redistribution may result in increased noise levels along some roadways. The 2014 LRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards and overall increase in ambient noise from traffic.

Mount Zion

The demolition of three existing buildings at the Mount Zion campus site would not result in permanent noise increases. Consequently, permanent noise increases impacts resulting from demolition activities at Mount Zion are considered less than significant and will not be assessed in the 2014 LRDP EIR. Construction of a new building may result in increased noise levels along

some roadways. The 2014 LRRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards and overall increase in ambient noise from traffic.

Mission Center

Potential development of the Mission Center campus site would include an office structure and parking garage. Localized traffic redistribution may result in increased noise levels along some roadways. The 2014 LRRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards and overall increase in ambient noise from traffic.

Other UCSF Campus Sites

No projects or programs are proposed. No impacts would result.

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d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?

2014 LRDP

As a program-level document, the LRDP would address land use changes and development. While these changes may result in temporary construction noise, the potential noise impacts of these changes will be addressed individually for project elements in the 2014 LRDP EIR.

Parnassus Heights

The demolition of 13 existing buildings, renovation of UC Hall, Moffitt Hospital, and the Millberry Union towers, and construction of the replacement hospital will result in temporary construction-related noise at Parnassus Heights. The LRDP will assess the construction-related noise exposure relative to standards of the City of San Francisco Noise Ordinance.

Mission Bay

1.45 million gsf of development would include a housing complex on Block 15. The 2014 LRDP EIR will examine the potential for construction activities to exceed standards of the San Francisco Noise Ordinance.

Mount Zion

The demolition of three existing buildings and construction of one new building at the Mount Zion campus site will result in temporary construction noise that will be addressed in the 2014 LRDP EIR with respect to City of San Francisco noise ordinance standards.

Mission Center

Potential development of the Mission Center site would include an office building and parking garage. Construction would result in temporary construction noise that will be addressed in the 2014 LRDP EIR with respect to City of San Francisco noise ordinance standards.

Other UCSF Campus Sites

No projects or programs are proposed. No impacts would result.

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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

There are no public use airports within two miles of the City of San Francisco. Both San Francisco International Airport and Oakland International Airport are over five miles from the City limit. Consequently there would be a less than significant impact with regard to exposure to excessive noise levels from public use airports and the issue will not be assessed in the 2014 LRDP EIR.

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f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The only UCSF campus within two miles of a private airstrip (helipad) is Mission Bay. UCSF will operate an active helipad at the medical center. The 2014 LRDP EIR will address the operational helicopter noise effects at LRDP-proposed sensitive land uses at the Mission Bay campus site. All other campus sites would have a less than significant impacts due to noise from private air strips.

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g) Exceed an LRDP EIR standard of significance by contributing to an increase in average daily noise levels (Ldn) of 3 dB(A) or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use?

2014 LRDP

As a program-level document the LRDP would address land use changes and development. These changes may result in new noise sources, and the potential noise impacts of these changes will be addressed individually for project elements in the 2014 LRDP EIR.

Parnassus Heights

Operation of the replacement hospital would result in changes to existing mechanical equipment in the area which could reduce noise levels at adjacent land uses. The 2014 LRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards and general plan land use compatibility standards.

Mission Bay

Additional development, some not entitled under the existing LRDP, may be developed by 2035. This would include a housing complex on Block 15. Localized traffic redistribution may result in increased noise levels along some roadways. The 2014 LRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards and general plan land use compatibility standards.

Mount Zion

The demolition of buildings and construction of one new building at Mount Zion would not result in permanent noise increases. Consequently, permanent noise increases at adjacent properties resulting from the LRDP at Mount Zion are considered less than significant and will not be assessed in the 2014 LRDP EIR.

Mission Center

Potential development at the Mission Center campus site includes a medical office structure and parking garage. Localized traffic redistribution may result in increased noise levels along some roadways. The 2014 LRRDP EIR will examine the resultant noise levels from proposed modifications relative to noise ordinance standards and general plan land use compatibility standards.

Other UCSF Campus Sites

No projects or programs are proposed. No impacts would result.

5.13 Population and Housing

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☒	--	--	--	--	--	--	☒	--	--	--	--	--
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	--	--	--	--	--	--	--	--	--	--	--	--	--
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	--	--	--	--	--	--	--	--	--	--	--	--	--
d) Exceed the LRDP EIR standard of significance by creating a demand for housing outside the market area where the facilities or site are located?	☒	--	--	--	--	--	--	--	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Population and Housing

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. Population and housing changes, in and of themselves, are not normally considered to be significant impacts (substantial, adverse impacts on the physical environment) under CEQA, but CEQA does allow inclusion of these effects as indicators of other impacts. Therefore, this section quantifies and describes the magnitude of such potential changes. The potentially significant physical environmental impacts associated with changes in population and housing are analyzed in other sections of this Initial Study (e.g., traffic, public services, air quality).

Discussion of Potential Impacts

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The 2014 LRDP would result in population growth in the San Francisco area through increased employment and student enrollment. The 2014 LRDP would accommodate an increase in population from the current approximately 38,420 to approximately 55,190 by the year 2035. The increase in population will be evaluated in the EIR in a campus-wide context as well as specifically related to proposed residential development at Mission Bay. Population growth at Parnassus Heights would result from partial conversion of UC Hall and Millberry Union towers to residential space. Currently, there are 238 housing units located on the Parnassus Heights campus site. The proposed demolition of three Aldea residential buildings would reduce the total units to 196. Proposed residential conversion at UC Hall and Millberry Union towers would add approximately 227 units at buildout of the LRDP in 2035, resulting in a net increase of 185 units over existing conditions. No housing is proposed at either the Mount Zion or Mission Center campus sites. Therefore, the population growth at Parnassus Heights, Mount Zion and Mission Center would not be substantial and the impact would be less than significant; effects at these campus sites will not be analyzed in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

The proposed projects and programs at Mission Bay, Mount Zion and Mission Center would not displace existing housing or people. No impacts would occur at these campus sites. Three existing short-term residential structures at Parnassus Heights in the Aldea student housing complex are proposed for demolition by 2024. The number of short-term residents displaced at these buildings would not be substantial in comparison to the total population on the Parnassus Heights campus. In addition, the LRDP is proposing to partially convert both UC Hall and the Millberry Union towers to residential use, which would serve as replacement housing for some of the population previously housed in the Aldea buildings. The impact would be less than significant and will not be analyzed in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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d) Exceed the LRDP EIR standard of significance by creating a demand for housing outside the market area where the facilities or site are located?

The 2014 LRDP would result in population growth in the San Francisco area through increased employment and student enrollment. The 2014 LRDP would accommodate an increase in population from the current approximately 38,420 to approximately 55,190 by the year 2035. This anticipated population increase could result in an increased demand for housing in the Bay Area. This criterion will be evaluated in the EIR in a campus-wide context only.

5.14 Public Services

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:													
i) Fire protection?	☒	--	--	--	☒	--	☒	☒	--	--	☒	☒	--
ii) Police protection?	☒	--	--	--	☒	--	☒	☒	--	--	☒	☒	--
iii) Schools?	☒	--	--	--	☒	--	☒	☒	--	--	☒	☒	--
iv) Parks?	☒	--	--	--	--	--	--	--	--	--	--	--	--
v) Other public facilities?	☒	--	--	--	--	--	--	--	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Public Services

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Fire protection?
ii) Police protection?
iii) Schools?
iv) Parks?
v) Other public facilities?

Fire Protection and Emergency Medical Services

The San Francisco Fire Department (SFFD), headquartered at 698 Second Street, provides fire protection and emergency services to the City of San Francisco, as well as to all UCSF facilities within the City. Fire suppression companies are organized into two divisions, which are further divided into nine battalions, located throughout the City (SFFD, 2013). As of 2013, the SFFD consists of 1,500 firefighting and emergency medical field personnel and resources include 44 Engine companies, 19 Truck companies, a dynamically deployed fleet of Ambulances, two Heavy Rescue Squad units, two Fireboats and multiple special purpose units. The Airport Division is comprised of three firefighting stations and seven companies located at the San Francisco International Airport (Talmadge, 2013).

Emergency calls for fire and medical services at UCSF campus sites are routed to the SFFD for dispatching. Response times generally reflect the seriousness of the call. As of 2013, the SFFD has a response time goal for the first arriving unit of 5:00 minutes, while actual response times average 4:52 minutes (Talmadge, 2013).

Police Protection

The UC Police Department (UCPD) provides police protection services for University of California properties and facilities that comprise UCSF. The UCPD is responsible for approximately 60,000 patients, visitors, students, faculty, staff and affiliates. Headquartered at 654 Minnesota Street, the UCPD employs approximately 120.5 authorized staff. UCPD headquarters is approximately 4 miles from Parnassus Heights, 1.2 miles from Mission Bay, and 4.1 miles from Mount Zion. The UCPD also operates a patrol station at both the Parnassus Heights and Mission Bay campus sites.

As of 2012, the service ratio of police personnel to UCSF population is 2.2 sworn police officers per 1,000 persons (UCPD 2012 Crime Reporting). Police officers patrol by car, bicycle and on foot to maintain high-profile, proactive and preventive public safety services (UCPD website, 2013). In 2012, UCSF police responded to 49,883 calls for service and processed 313 arrests (UCPD 2012 Crime Reporting).

The UCPD has a mutual-aid agreement with the San Francisco Police Department (SFPD) to provide cooperative assistance within a 1-mile radius of each UCSF campus site. A memorandum of understanding between the UCPD and the SFPD establishes that UCPD has exclusive jurisdiction over police service on UCSF properties. Depending on the nature of the emergency, the UCPD may request assistance from the SFPD (UCSF, 2005).

Projects implemented under the 2014 LRDP would be required to comply with applicable provisions of the Uniform Building Code with respect to the incorporation of security features in standard building design plans.

Public Schools

The City's public schools are operated by the San Francisco Unified School District (SFUSD). The SFUSD administers 75 elementary schools (grades k-5), 13 middle schools (grade 6-8), 15 high schools (grades 9-12) and 11 charter schools (SFUSD, 2013). Over 55,000 students are educated through the SFUSD, the seventh largest in California.

Parks

Effects on local and regional parks are discussed in Section 5.15, *Recreation*, below.

2014 LRDP

As a program-level document the LRDP would address the overarching topics of land use changes, population increase and space needs. While these changes may result in increased demand on public services, the potential impacts would occur individually for project elements of at each campus site in the 2014 LRDP EIR.

Parnassus Heights

Construction of the replacement hospital may alter demand for public services and therefore will be analyzed in the 2014 LRDP EIR.

The proposed demolition of 13 buildings, renovation of UC Hall, renovation of Moffitt Hospital and the Millberry Union towers, and infrastructure/open space projects would not substantially increase the campus population, and therefore would not contribute to an increased demand for public services. No impact would occur and no further analysis is required.

Mission Bay

Potential effects of the entitlement program and the proposed housing construction project may result in significant impacts on public services near this campus site. Both the program and the project require further analysis with regard to public services in the 2014 LRDP EIR.

Mount Zion

Demolition of the Hellman, Brunn and Dialysis buildings, and the renovation of the main hospital would not contribute to campus population and therefore would have no effect on public services near this campus site. No further analysis is required.

Construction of the proposed office and research building at Mount Zion may result in increased population and resultant demand for public services, particularly fire and police services, at this campus site. The potential impacts of this project on public services will be analyzed in the 2035 LRDP EIR.

Mission Center

Construction of the proposed office and research building at Mission Center may result in an increased demand for public services due to an increased facility size at this campus site. This project's potential impacts to fire and police protection services will be analyzed in the 2014 LRDP EIR

Other UCSF Campus Sites

Implementation of development under the 2014 LRDP would have no effect on public services with regard to other UCSF campus sites, and therefore, will not be analyzed in the 2014 LRDP EIR.

References

Talmadge, Mindy, Public Information Officer, San Francisco Fire Department, personal communication, August 1, 2013.

San Francisco Fire Department, website: http:\\www.sf-fire.org, accessed July 22, 2013.

San Francisco Unified School District, Website: http:\\www.sfusd.edu, accessed online on August 1, 2013.

University of California, San Francisco, Police Department, website: http:\\police.ucsf.edu, accessed July 22, 2013.

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5.15 Recreation

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	--	--	--	--	--	--	☒	☒	--	--	--	--	--
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	--	--	--	☒	--	--	☒	☒	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Recreation

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The potential effects regarding the increased use of parks and other recreational facilities would occur only as a result of LRDP development and activities that occur at specific campus sites, as a result of proposed programs and projects. Population growth at the Parnassus Heights, Mount Zion and Mission Center campus sites would not be substantial; therefore, the demand on existing recreational facilities resulting from an increased population at these campus sites would not result in substantial physical deterioration of such facilities. The impact would be less than significant at these campus sites. The proposed residential development at Mission Bay campus site could result in an increased demand for recreational facilities. This impact will be evaluated in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

The 2014 LRDP proposes new recreational facilities at two campus sites: Parnassus Heights and Mission Bay. No recreational facilities are proposed at Mount Zion or Mission Center. New trails are proposed at Parnassus Heights that would provide access into the Mount Sutro Open Space Reserve in order to increase the connectivity to the Reserve's trail system from neighborhoods to the west and north. At Mission Bay, a multi-sports field is proposed on the eastern portion of Block 18. Construction effects of these facilities at Parnassus Heights and Mission Bay will be evaluated in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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5.16 Transportation and Traffic

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	--	--	--	--	--	--	--	--	--	--	--	--	--
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
e) Result in inadequate emergency access?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
g) Exceed the applicable LRDP EIR standard of significance by causing substantial conflict among autos, bicyclists, pedestrians, and transit vehicles?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Transportation and Traffic

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. Additionally, the following guidelines are used to determine if a significant impact would occur:

Traffic

Signalized Intersections – a significant impact would occur if:

- project traffic causes intersection LOS D or better to deteriorate to LOS E or F
- project traffic causes intersection LOS E to deteriorate to LOS F
- project adds traffic to an intersection that operates at LOS E or F under existing conditions and contributes to the worsening of the average delay per vehicle (an increase in traffic volumes due to the project that is greater than 5% would be considered significant)

Unsignalized Intersections – a significant impact would occur if:

- project traffic causes the LOS at the worst approach to deteriorate from LOS D or better to LOS E or F and Caltrans signal warrants would be met
- project traffic causes Caltrans signal warrants to be met when the worst approach is already operating at LOS E or F
- project adds traffic to an intersection that operates at LOS E or F under existing conditions and contributes to the worsening of the average delay per vehicle (an increase in traffic volumes due to the project that is greater than 5% would be considered significant)

Cumulative – a significant impact would occur if:

- the project would make a considerable contribution to the deterioration of intersection conditions (LOS E or F) under cumulative conditions. A project's contribution would be considerable if the project contribution to cumulative growth would be 5% or greater, and if the project contribution to total traffic volumes on critical movements operating at LOS E or F would be 5% or greater.

Public Transit – a significant impact would occur if:

- project demand for public transit causes the need for development or expansion of mass transit facilities, the development of which would cause significant environmental impacts

Parking

- project-generated parking demand that is not met by the project is not considered significant

Pedestrians/Bikes – a significant impact would occur if:

- the project would cause a substantial conflict among autos, bicyclists, pedestrians and transit vehicles (see g), below)

Discussion of Potential Impacts

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Implementation of the 2014 LRDP would increase both the amount of on-campus building space and the daily population, which would result in increased vehicular traffic on local streets. The EIR will analyze the impact of additional project-related and cumulative traffic on the local street network, including intersection capacity, and effects on pedestrian and bicycle paths, as well as mass transit. Conflicts with an applicable congestion management program will also be analyzed in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Result in inadequate emergency access?

Although the 2014 LRDP does not propose hazardous roadway design features, incompatible uses, or changes to emergency access at any of the campus sites, these criteria will be evaluated in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

g) Exceed the applicable LRDP EIR standard of significance by causing substantial conflict among autos, bicyclists, pedestrians, and transit vehicles?

Implementation of the 2014 LRDP is not anticipated to conflict with policies, plans, or programs supporting alternative transportation on any campus site or within the City of San Francisco.

Similarly, conflicts between various transportation modes are not anticipated under the LRDP. Nonetheless, these topics will be analyzed in the EIR.

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c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The 2014 LRDP will not change existing air traffic volumes or affect existing air traffic patterns that would result in substantial safety risks. Therefore, no further study of air traffic patterns is necessary and this topic will not be analyzed in the EIR.

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5.17 Utilities and Service Systems

		2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
Issues (and Supporting Information Sources):		Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:														
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	--	--	☒	--	☒	☒	☒	☒	--	☒	☒	☒	--
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	--	--	--	☒	☒	--	☒	☒	--	--	☒	☒	--
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	--	--	☒	--	☒	☒	☒	☒	--	☒	☒	☒	--
e)	Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	--	--	☒	--	☒	☒	☒	☒	--	☒	☒	☒	--
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
g)	Comply with applicable federal, state, and local statutes and regulations related to solid waste?	--	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
h)	Result in the wasteful, inefficient and unnecessary consumption of energy (see CEQA Statutes Section 21100(b)(3))?	☒	--	☒	--	☒	☒	☒	☒	--	☒	☒	☒	--
i)	Exceed the LRDP EIR standard of significance by requiring or resulting in the construction of new electrical or natural gas facilities, which would cause significant environmental effects?	--	--	--	--	--	--	☒	--	--	--	--	--	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Utilities and Service Systems

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Potential Impacts

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed LRDP programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

The 2014 LRDP EIR will analyze the potential for growth at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites to exceed the wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

The 2014 LRDP EIR will analyze the potential for changes at the Parnassus Heights campus site or growth at the Mission Bay, Mount Zion and Mission Center campus sites to require or result in the construction of new water or wastewater treatment facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.

Demolition activities as well as other infrastructure improvements proposed at Parnassus Heights and Mount Zion would not require new water or wastewater treatment facilities; therefore, no impact would occur and these topics will not be analyzed in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under

current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

The 2014 LRDP EIR will analyze the potential for changes or growth at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites to require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.

Demolition or renovation activities proposed at Parnassus Heights and Mount Zion would not require new storm water drainage facilities; therefore, no impact would occur and these topics will not be analyzed in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

The 2014 LRDP EIR will analyze the potential for changes or growth at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites to result in the need for new or expanded water entitlements.

Demolition activities as well as other infrastructure improvements proposed at Parnassus Heights and Mount Zion would not require new water supplies; therefore, no impact would occur and these topics will not be analyzed in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

The 2014 LRDP EIR will analyze the potential for changes or growth at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites to result in the need for additional wastewater treatment capacity.

Building demolition as well as other infrastructure improvements proposed at Parnassus Heights and Mount Zion would not require new wastewater treatment capacity; therefore, no impact would occur and these topics will not be analyzed in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?

All of the potential effects occur only as a result of activities that occur at specific campus sites, as a result of proposed programs and projects. These specific effects are considered under the individual programs and projects, listed under the appropriate campus sites.

The 2014 LRDP EIR will analyze the potential for growth, in addition to demolition and renovation activities, at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites to result in the generation of solid waste that would exceed landfill capacity. In

addition, the EIR will evaluate compliance with applicable federal, state and local statutes and regulations related to solid waste disposal.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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h) Result in the wasteful, inefficient and unnecessary consumption of energy (see CEQA Statutes Section 21100(b)(3))?

The 2014 LRDP EIR will analyze the potential for growth under the LRDP to result in the wasteful, inefficient, and unnecessary consumption of energy. The effects will be evaluated in a campus-wide context as well as specifically related to proposed development at the Parnassus Heights, Mission Bay, Mount Zion and Mission Center campus sites.

Demolition activities as well as other infrastructure improvements proposed at Parnassus Heights and Mount Zion would result only in a temporary demand for energy, which would be considered a less than significant effect. No further discussion of these activities regarding energy consumption would be included in the EIR.

No projects or programs are currently proposed at other UCSF campus sites. Under the UCSF long-term consolidation strategy, activity will either be maintained at these locations under current conditions or sites will be vacated and activities absorbed into other university-affiliated buildings. As no development or changes in use are planned for these sites, no impact would occur and this topic will not be analyzed in the EIR.

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i) Exceed the LRDP EIR standard of significance by requiring or resulting in the construction of new electrical or natural gas facilities, which would cause significant environmental effects?

Mission Bay is the only campus site in which a new electrical or natural gas facility is proposed. The potential effects of the proposed central utility plant at Block 16 will be analyzed in the EIR.

5.18 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	2014 LRDP	Parnassus Heights					Mission Bay		Mount Zion			Mission Center	Other UCSF Campus Sites
	Land Use, Population, Space Needs,& CAP (Program)	Demolish 13 Existing Buildings (Project)	Renovate UC Hall (Project)	Utilities, Retaining Walls, Saunders Court & Streetscape (Project)	Construct Replacement Hospital (Program)	Renovate Moffitt & Millberry Tower (Program)	Remaining & Increased Entitlement (Program)	New Housing (Project)	Demolish Hellman, Brunn & Dialysis (Project)	Renovate Main Hospital (Program)	Construct Office / Research Building (Program)	Construct Office Building (Program)	No Proposed Projects or Programs
Would the project:													
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	--

Topics to be analyzed in the 2014 LRDP EIR are indicated: ☒

Topics that do not require additional analysis beyond that provided in the Initial Study are indicated: --

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Mandatory Findings of Significance

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

As indicated in the discussions above, implementation of the 2014 LRDP has the potential to result in significant biological and cultural resource impacts, which could degrade the quality of the environment. The EIR will evaluate whether LRDP implementation will substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

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b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?

The 2014 LRDP estimates that 12.14 million gsf of academic buildings, support facilities, and student housing are required to support a total future enrollment of 5,390 students and an increase in campus-wide daily population to approximately 55,190 by 2035. The EIR will evaluate whether the potential impacts of increased enrollment and additional building square footage associated with implementation of the 2014 LRDP, combined with other current projects and probable future projects and projected regional growth in the surrounding area, would be cumulatively considerable.

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c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

As indicated in the above discussions, implementation of the proposed 2014 LRDP has the potential to result in significant impacts. The EIR will evaluate whether any of those impacts have the potential to result in substantial adverse effects on human beings either directly or indirectly.

APPENDIX B
EIR Scoping Comments

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STATE OF CALIFORNIA
EDMUND G. BROWN JR., *Governor*

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
SAN FRANCISCO, CA 94102
(415) 703-1815

October 22, 2013

Diane Wong
UCSF Campus Planning
654 Minnesota Street
San Francisco, CA 94143

Dear Ms. Wong:

Re: SCH 2013092047 UC Regents UCSF Long Range Development Plan - NOP

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings in California. The Commission Rail Crossings Engineering Section (RCES) is in receipt of the Notice of Preparation (NOP) from the State Clearinghouse for the proposed Regents of the University of California (UC) UCSF Long Range Development Plan project.

The project area is within the proximity of active railroad tracks. RCES recommends that the UC add language to the UCSF Long Range Development Plan, so that any future development adjacent to or near the railroad/light rail right-of-way (ROW) is planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade crossings. This includes considering pedestrian circulation patterns or destinations with respect to railroad ROW and compliance with the Americans with Disabilities Act. Mitigation measures to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade crossings due to increase in traffic volumes and continuous vandal resistant fencing or other appropriate barriers to limit the access of trespassers onto the railroad ROW.

If you have any questions in this matter, please contact me at (415) 703-1815, sm4@cpuc.ca.gov.

Sincerely,

Sia Mozaffari
Utilities Engineer
Rail Crossings Engineering Section
Safety and Enforcement Division

C: State Clearinghouse

UCSF NEIGHBORS
Not affiliated with UC or UCSF

For more information contact us at help@ucsfneighbors.com or Shabbir Imber Safdar (415 683 7526) or Eugene Salazar at santana1732@sbcglobal.net.

Introduction

Please find enclosed selected comments on the EIR study. At a high level, this is a summary of the detail commentary below:

- We strongly object to the way you characterize the 5th Ave and Kirkham St. traffic calming measures. You are portraying them as something done to address the neighbors concerns about UC Hall traffic. This is patently untrue.
- We are concerned that a lack of transparency in the calculation of gross square foot space and population at Parnassus means that you are computing it incorrectly and may be far over the space and population ceiling.
- You have omitted specifying the environmental impact for a number of projects that, when outlined in more detail, may have a significant impact.

If you have any followup questions to these comments, please feel to contact our community through me. Additionally, we would like to see you publish this study for comment one more time before beginning work on the LRDP EIR.

Sincerely,

/s/

Shabbir Imber Safdar
shabbir@ucsfneighbors.com
415-683-7526

Selected comments

2.7 Campus Site Location and Proposed Physical Development Plans

P. 19: Statement made without basis of fact: "The total population of Parnassus Heights is not expected to grow substantially over the life of the LRDP."

Explanation:

> This claim is not borne out by the facts presented or the history of the management of campus. Historically UCSF has failed to accurately estimate and manage Parnassus population, exceeding the population cap set by the UC Regents Resolution of 1976 every year since implementation. Additionally there are more housing units being built at Parnassus. Given the fact that every year they have remained under limitations that they have failed to meet, UCSF may not claim credibly that the population of the Parnassus campus will increase.

For more information contact us at help@ucsfneighbors.com or Shabbir Imber Safdar (415 683 7526) or Eugene Salazar at santana1732@sbcglobal.net.

Suggested fixes:

1. Break out overall Parnassus population figures per day similar to page 17 Table2
2. Give a figure to show what population is right now versus 2035 on each campus site as well.
3. Provide detailed explanation that explains why population control to date has been in direct violation of the UC Regents guidelines, and how population management will be different going forward.

P.10: **Statement made that structural parking of 1.58 million gsf is going to be excluded from campus-wide calculations. This suggests Parnassus parking is being excluded from space ceilings counts in violation of the 1976 Regents resolution.**

Because no clear breakdown of Parnassus campus space is provided, the use of parking square footage exclusions suggests a violation of the 1976 resolution.

> **1976 Regents Resolution established a limit of 3.55 million gsf at the Parnassus Heights campus -The space ceiling includes all building space, including parking structures….."**

Suggested fixes:

> A clear breakout and count of how the total space at Parnassus is calculated would address these concerns. Such a calculation would assure the neighbors that the space ceiling compliance is not being incorrectly calculated to exclude parking.

p.22: cushioning actions for 5th and Kirkham St were promised previously

This section clearly misstates why traffic calming was undertaken at 5th Ave and Kirkham St. When the childcare center was built at 5th Ave and Kirkham St, UCSF promised traffic calming to the neighbors to mollify them. This traffic calming was never built until UCSF saw an opportunity to claim that it addressed neighbors concerns for new traffic from the UC Hall renovation.

Traffic calming at 5th Ave and Kirkham St does not address neighborhood concerns for the 2013 LRDP. Do not publish these claims on behalf of the neighbors.

p.24 -- Implement Parnassus Avenue Streetscape Plan
Since Parnassus Avenue is a surface street maintained by City and County of San Francisco (CCSF) and used for two buslines, when will the CCSF managed (MUNI and SF Planning Commission) public comment and approval process start? Have the appropriate CCSF agencies been notified of changes to City streets? If so, which ones?

For more information contact us at help@ucsfneighbors.com or Shabbir Imber Safdar (415 683 7526) or Eugene Salazar at santana1732@sbcglobal.net.

Environmental impact checklists

5.1 Aesthetics

Would the project have a substantial effect on a scenic vista?

For Parnassus project "Demolish 13 Existing Buildings", it should be analyzed in the EIR.

Whether or not Mount Sutro is a scenic vista is not in doubt. However for 4 of the 5 Parnassus Heights projects, buildings will be demolished, possible parking facilities will be built requiring night time safety lighting. Additionally truck delivery bays are possible for some of these which can require structures as well.

Unless UCSF is prepared to go into sufficient detail to describe what will happen on each of these sites, the replacements must all be analyzed for their impact on the scenic vista in the EIR.

For Parnassus project "Renovate UC Hall", it should be analyzed in the EIR.

It is impossible to tell whether or not the UC Hall renovation will impact the scenic vista. Choices of exterior materials can impact the appearance of Mt. Sutro. In addition UCSF has admitted that they don't know all the details of the renovation. Factors discovered after the project has been taken to blueprints could reveal a need to change the view profile of the top or sides of the building, impact the scenic vista.

Unless UCSF is prepared to go into sufficient detail to describe what will happen in the UC Hall renovation now, it must be analyzed for impact on the scenic vista in the EIR.

Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

For Parnassus project "Renovate UC Hall", it should be analyzed in the EIR.

Because the specifics of the UC Hall renovation are not known, both the aesthetic requirements, as well as the safety needs of the building are not known. Changing legal and aesthetic standards could dictate lighting changes that impact the overall brightness of the surrounding area.

Exceed the LRDP EIR significance…or by increasing pedestrian level wind speeds above the hazard level set forth…

For Parnassus projects "Renovate UC Hall" and "Utilities, Retaining Wall", it should be analyzed in the EIR.

The "wind tunnel" effect on Parnassus is a well known problem, admitted to by both neighborhood residents and UCSF staff in public meetings. UCSF's inability to mitigate it has removed any credibility it might have in being able to claim that wind would not increase to the point of safety concerns.

For more information contact us at help@ucsfneighbors.com or Shabbir Imber Safdar (415 683 7526) or Eugene Salazar at santana1732@sbcglobal.net.

To make the claim that wind impacts won't be a factor, UCSF should conduct proper wind studies. **It is worth noting that UCSF Parnassus CAG member Kevin Hart specifically requested this in a recent community meeting regarding the demolition of 374 Parnassus. If UCSF won't take the suggestion of its own captive Community Advisory Group, then one wonders what use they serve besides checking the box for "community input".**

5.12 Noise

Would the project [impact] a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

For Parnassus projects "Demolish 13 existing buildings", it should be analyzed in the EIR.

The demolition of these buildings is only part of the story. Many of these buildings are slated to be replaced with parking lots and truck bays. The ambient noise created by additional car and truck traffic will create additional noise as this demand hits the residential neighborhood around 5th Ave and Kirkham Street.

5.13 Population and Housing

Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example through extension of roads or other infrastructure)?

For Parnassus projects "Renovate UC Hall" and "Renovate Moffitt & Milberry Tower", it should be analyzed in the EIR.

Perhaps this is simply a drafting error, but the UC Hall and Milberry tower project both create new housing. Each of these projects require a specific assessment of people impact attached to them. This is especially true because UCSF has never successfully been compliant with the space ceiling as set by the UC Regents Resolution of 1976, and adding new housing should not be allowed until they are.

5.16 Transportation and Traffic

This is not a recommended edits of the EIR study, but a requirements of the EIR itself.

EIR should contain detailed analysis about how UCSF will accommodate population growth at Parnassus, and manage neighborhood impact of additional cars. The EIR should address the following issues:

- No parking issues are mentioned in all these different approaches, there will be a resident increase of 560, there will be an increase of patient population at Parnassus of 84,000. Where will they park?

For more information contact us at help@ucsfneighbors.com or Shabbir Imber Safdar (415 683 7526) or Eugene Salazar at santana1732@sbcglobal.net.

- Which new residential units will be eligible for neighborhood parking stickers? Or will they be prevented from getting them?

Public Comment: UCSF LRDP Document:

To: Diane Wong

From: Michael Daly October 29th, 2013

Reference: Clarification Language added to define the intentions of the CEQA/EIR and LRDP process

An always present myth prevails during public participation in the LRDP phase, that myth was repeatedly pronounced at the October 28th public meeting on the Parnassus Campus. One speaker mentioned several times that a ***Plan*** cannot be accomplished without '***Plans"*** developed during an architectural phase, which address design intentions of individual parcels.

In fact, the CEQA/EIR and LRDP milestones are always accomplished in master schedules well in advance of beginning architectural process, *to enable it, not accomplish it*. In order to improve this understanding of the process among all parties, I suggest three minor edits to your draft, as noted below. These would show up on page 3, page 11 and page 14. This comment is submitted as a good faith suggestion which would hopefully allow to you a generous level of efficient communication to the community participants attending your events. Specifically, it would allow event chairs such as Lori Yamauchi actual bullet points in the document text to point to if these questions come up from the floor.

Page 3:

prepare an EIR as required by Public Resources Code Section 21080.09 that will evaluate the environmental effects of growth under the proposed LRDP. The LRDP EIR will be a program EIR that will be used by the Board of Regents of the University of California (The Regents) to evaluate the environmental implications of adopting the proposed LRDP. Once certified, the EIR will also be used to tier subsequent environmental analyses for future UCSF development projects (CEQA Guidelines Section 15152). Proposed UCSF development projects would then be reviewed in light of the LRDP EIR to determine the appropriate level of additional environmental review before implementation.

The CEQA/EIR and LRDP processes are not intended to accomplish actual design of structures or their eventual occupancy, rather these intend to meet statutory requirements of all projects of this scale in ensuring due diligence in all project planning front ends. This is a policy process, not an architectural document.

page 11

Projected Need for Additional Space

UCSF's projected need for additional space through the LRDP horizon of 2035 is 2.43 million gsf in addition to the buildings currently under construction. The amount of instruction, clinical, research and support space that is expected to be needed and can be financially supported through 2035 is described below. The breakdown of the types of space needed across all sites is presented and discussed by major space category**.** ***Actual design of this space will be accomplished in the future as specific needs emerge and can be clarified.***

The 2.76 million gsf of additional capacity under the LRDP exceeds the projected 2.43 million gsf need for additional space in order to allow for some degree of campus growth to meet needs that may not be foreseeable at this time, given the 20+ year horizon of the LRDP. This is explained in greater detail below under "Total Space at LRDP Buildout."

page 14

Total Space at LRDP Buildout

As noted above, UCSF's projected need for additional space through the LRDP horizon is 2.43 million gsf in addition to the 1.13 million gsf of building space currently under construction. The projects identified in the LRDP would provide up to 2.76 million gsf at LRDP buildout.

The purpose of this LRDP is to budget and ensure sufficient space to accomplish goals stated here; actual designs are pending future information to be gathered in real time.

Although a major portion of the projected space need would be accommodated in new buildings

on campus sites, some of it would be met through a combination of better utilization of existing vacant or underutilized space, reinvestment in existing sites, converting existing space to other uses to meet changing priorities (e.g., converting office space at the Parnassus Heights campus site to housing and backfilling Moffitt Hospital after 2030 with hospital support and other uses), or consolidating functions or leases.

Respectfully submitted,

Michael Daly

138 Laidley Street

San Francisco, CA 94131

“Michael Daly” <mdaly138@gmail.com>

Greetings,

I thank UCSF for the opportunity to comment on scoping for the EIR for UCSF's LRDP.

An EIR should study all reasonable project alternatives so that the decision-making bodies and the public have sufficient information to make the best choices for UCSF and the environment. Oftentimes a project selected includes parts from more than one alternative.

In addition to the current proposal the EIR should study an alternative where each campus is a complete entity, with its separate mission, along with its own support facilities such as housing. This alternative will greatly lessen the need for shuttling staff/students/faculty from one campus to another, thereby reducing the burden of traffic between these campuses on the citizens of San Francisco. The environmental burden of semi-independent foci should be compared to the present pattern, where UCSF vans and buses more people around San Francisco all day long.

There are three basic issues--noise, lights, and traffic.

NOISE

The EIR for the previous LRDP made a commitment to reduce noise coming from the Parnassus campus into the surrounding neighborhood. I request that existing noise be analyzed professionally and completely and that future noise from each campus be reduced. Noise reduction is an important mitigation that will make living next to a large campus more livable. Noise reduction is never easy, but can be accomplished.

LIGHTS

Lights are another source of pollution that reaches out into the community. With any changes proposed for each of the campuses, reduction in existing lights is an important mitigation for other changes. Exterior lights should be changed to comply with dark sky principles. Interior lights that bleed out through unshielded windows should be changed to remove this light trespass.

On the Parnassus campus, night light pollution is especially noticeable because of the prevalence of low clouds that spread the light far beyond its source. Three examples; 1) lights from the anatomy floor in the clinic building are frequently on all night, and with non-shaded windows, these lights spread far into the neighborhood; 2) Lights near the glass walls of HSW mostly but also HSE likewise spread out into the neighborhood; 3) light from the Parnassus campus flagpole that flies, 24-7, rain or shine, spreads far into the neighborhood, being as it is on top of the building. As far as the flag is concerned, I would suggest a flagpole in the front circle by Moffitt Hospital, which, being lower down, could be spot illuminated without the broad

spread of light.

While I am suggestion solutions or mitigations, light pollution should be studied in the EIR, with an emphasis on *reducing existing light pollution*.

TRAFFIC

Living in the Inner Sunset, I can state unequivocally that the Parnassus neighborhood is clearly impacted by the comings and goings of the up to 18,000 visitors daily to the campus. Something has to give. The congestion gets worse every year. Traffic must be studied in the EIR and reasonable, achievable goals identified to reduce this impact.

1) Traffic in the citywide and Bay Area or regional network must be studied. It is not enough to study merely one campus and its bordering streets. For the Parnassus campus, it is not sufficient to study Parnassus and Irving, and a few of the avenues. Rather the citywide and regional Bay Area network for trips to the Parnassus campus must be studied, with a commitment to reduce this traffic.

Traffic generated to and from the other campuses should likewise be studied on a citywide and a regional basis.

2) Vans and high capacity vehicles are often proposed to help traffic issues. These vehicles bring their own problems.

2a) No vans or high capacity vehicles on residential streets--these should only be on major thoroughfares. The EIR should study alternative routes that use arterial roadways and avoid neighborhood streets completely.

2b) UCSF has included large, high capacity bus-like vans that move back and forth on residential streets. These particular vans appear to be similar to huge trucks, bringing unreasonable noise and pollution into the neighborhood. The EIR should study replacements for these huge vans that are more environmentally sensitive.

2c) Vans and high capacity vehicles that move people, campus to campus, may themselves induce traffic trips. This possibility should be studied in the EIR and whether a reduction in daily shuttling can be accomplished. With modern computers providing face-to-face dialogue, there should be no need to move people from one campus to another, throughout the day. Riding around on a bus should be seen as a waste of staff time and money, an abuse of student time and that of the professional teaching staff. The means to reduce shuttling should be studied.

3) As traffic mitigation, housing should be built on each campus for those persons who work at that campus and specifically not be allowed to be used for workers at other UCSF campuses.

4) Higher parking fees should be studied as an ideal way to reduce driving and congestion, as shown in the rest of San Francisco. Parnassus and the Mission campus seem to have set the *hourly* rate appropriately. The "early bird" rate, an all day rate, is unreasonably low. The EIR should study the impact of higher daily and monthly parking fees on single car occupancy. The study should include a fee schedule such that the more times per week and per month that a driver parks at a UCSF garage, the higher the fee. Once a week or 4 times a month should be more expensive than the present all day fee, for instance, up to twice higher, but the daily use of a UCSF parking garage should be quite a bit higher than the 'few times' a week fee. Higher parking fees should be used to help pay for the cost of Muni passes described below.

5) The EIR should study better markings for pedestrians, including lighting embedded in the street pavement at critical pedestrian crossings at all UCSF campuses. UCSF pay to put embedded pavement lighting in because UCSF brings in the traffic and UCSF staff and student pedestrians are heavily impacted, along with city neighbors. All campuses should be studied. For the Inner Sunset, obvious locations for pavement-embedded surface lighting are 7th and Irving and 7th and Judah, 7th and Kirkham. The EIR should propose a pedestrian friendly design for the parking garage entrance/exit on Irving Street at Arguello.

6) A critical citywide mitigation for the insult of traffic concerns MUNI use. MUNI passes for everyone working or studying at UCSF should be studied in the EIR.

The issuance of MUNI passes to all UCSF daily workers, students, staff, teachers, perhaps with a small, required fee, for example $20/month may be the most effective mitigation for UCSF's traffic impacts. The EIR should study the beneficial effects, city and regionally wide, of MUNI passes for all, with data from the MTA, the police, and the daily workers. The EIR should study the benefit to MUNI of having passes for all UCSF persons.

Higher fees for campus parking can help offset the cost of MUNI passes. This increase in parking revenue should, however, NOT be expected to *pay* for the passes, merely to *help* pay for them. The cost to UCSF for these passes should be part of the mitigation to the city's neighborhoods for UCSF's continuing presence within the dense urban fabric of San Francisco. The University of San Francisco is an example where all students are issued MUNI passes, automatically upon enrollment. The example of how it is done at USF should be studied in the EIR and how a MUNI pass issuance for all can be applied to UCSF.

7) Parking spaces and garages serve as magnets to cause more cars to come. This phenomenon at UCSF should be studied in the EIR. In the Initial Study there are instances where it is stated that building teardowns or building modifications will be used to create more parking. In order to reduce traffic, no further parking should be provided by UCSF, at any of its campuses. The parking that exists on Mount

Sutro, near the Surge and the Woods buildings, should be eliminated and the space added to the Mt. Sutro Open Space Reserve, as mitigation to the near neighbors on Edgeware.

In coordinating both the EIR and the planning for the LRDP, the EIR should assess UCSF regionally, not locally. The plan and its EIR must consider citywide and Bay Area regional impacts. Especially with regards to traffic, but also with regard the impacts of noise and lights.

One final point, the Initial Study is very vague about what will happen to Moffitt Hospital. Will it change? What will it change to? Will a specific change mean an increase in traffic to the Parnassus site? While other projects on the Parnassus campus are described in a few or several sentences, there is very little indication as to what is proposed for Moffitt Hospital. This seems to be a hole in the IS.

Thank you again for this opportunity.

Pinky Kushner
1362 6th Avenue
San Francisco, CA 94122
415 731-9486

John D. Bardis
1158 Green Street
San Francisco, CA 94109
415-776-2014

November 12, 2013 Sent via email

Ms. Diane Wong, Environmental Coordinator
UCSF Campus Planning
654 Minnesota Street
San Francisco, CA 94143-0286

Subject: Comment on Scope of Initial Study For UCSF Long Range Development Plan EIR

Dear Ms. Wong:

The written comments presented below confirm and make more complete my oral comments presented at the Scoping Meeting held on September 28, 2013 in the Millberry Union of the Parnassus Heights campus regarding the scope of the Initial Study prepared by UCSF.

Public comment on the Initial Study was invited by UCSF regarding the scope and content of the environmental issues that UCSF intends to address in the forthcoming Environmental Impact Report (EIR) being prepared by UCSF for the proposed UCSF 2014 Long Range Development Plan (LRDP). UCSF is preparing the EIR in order comply with state law, the California Environmental Quality Act (CEQA).

In summary, as described more specifically below, the most glaring deficiency in the scope of this Initial Study for the EIR of the proposed UCSF 2014 LRDP is the complete omission of a very significant issue --the numerous past failures of UCSF to comply with the state law, California Environmental Quality Act (CEQA). Since UCSF must comply with CEQA in preparing this Initial Study and in preparing the EIR for the 2014 LRDP, the omission of its past failures to comply with CEQA certainly is a most significant omission.

My comments regarding the scope and content of the environmental issues as described in the Initial Study that UCSF intends to address in the EIR being prepared for the 2014 LRDP are as follows:

1. Omission of UCSF past failures to comply with CEQA. In addressing UCSF's preparation of the EIR for the proposed 2014 LRDP, the scope of the Initial Study includes on page 6 the action taken by UC Regents to adopt a resolution addressing the environmental effects of daily population, floor area of buildings, open space on Mount Sutro, etc. Likewise certainly the scope of the Initial Study also should include complete information in the EIR regarding the potential significant adverse environmental effects of the past failures of UCSF to comply with state environmental law, i.e. CEQA, which were corrected by community organizations initiating legal action and the courts and the UC Regents taking action for UCSF to comply with environmental laws and guidelines. An EIR would be incomplete if it omitted the significant potential adverse environmental impacts which the UC Regents and Courts required UCSF to address and comply with CEQA as described more specifically in the following legal actions initiated by San Francisco community organizations regarding UCSF CEQA violations.
    a. The violation of CEQA in connection with the EIR prepared for the expansion of Moffitt Hospital building.
    b. The violation of CEQA in connection with the EIR prepared for a new building for the Dental School.
    c. The violation of CEQA in connection with the EIR for the master plan for the Laurel Heights campus.
2. The Initial Study fails to present complete and accurate information regarding the 1976 Regents Resolution.
    a. Incorrect description of resolution. Footnote 2 on page 6 notes, "... Mount Sutro was designated as open space for a 25-year period by The Regents in 1975." Incorrect. The Regent's Resolution established 50 acres of open space on Mt. Sutro "*in perpetuity*" - not for 25 years.
    b. Omits significant information. Omitted the facts that the Regents enacted the resolution to:

i. Resolve a law suit regarding the violation of CEQA and lower court decision and injunction. Omission of any reference to the violation of the California Environmental Quality Act by UCSF in connection with the construction of the new building for the Dental School and the expansion of Moffitt Hospital and that the Regents enacted the Resolution to lift the injunction.

ii. To settle law suit Regents adopted policies. Significant information was omitted in the Initial Study to correctly inform the public that the policies - regarding Mt. Sutro open space, daily campus population, gross square foot space ceiling, Parnassus Heights campus boundaries, selling homes (previously seized by eminent domain) to private individuals, etc. - were adopted by the Regents in order to resolve the environmental law suit filed by the community organizations.

iii. The plaintiffs of law suit were community and environmental organizations. The Initial Study omits that UCSF was the defendant of a law suit filed by community and organizations which included as plaintiffs the Mount Sutro Defense Committee, Inner Sunset Action Committee, Sierra Club, and others.

3. The scope of the Initial Study should include the community actions taken to ameliorate potential significant adverse environmental impacts of UCSF actions to:
   a. Seize via eminent domain and demolish single family houses around the Parnassus Heights campus.
   b. Construct a massive new building for the Dental School at the Parnassus Heights campus.
   c. Establish biological warfare research facilities at the Laurel Heights campus and eliminated biological warfare research at this campus.
4. The scope of the Initial Study should include a description in specific terms of each of the past LRDP's of UCSF describing also in specific terms each amendment made to each one of the past LRDP's.
5. The scope of the Initial Study should include a review of the possible future sale of UCSF facilities especially the facilities at the Laurel Heights Campus.

In conclusion, the above information pertaining to the scope of the Initial Study and the preparation of the EIR for the proposed UCSF 2014 LRDP is required to more fully fulfill UCSF's responsibility to prepare a full and complete EIR.

Yours truly,

John D. Bardis

Former Member of the San Francisco Board of Supervisors
Former President of the Inner Sunset Action Committee and Coalition for San Francisco Neighborhoods

APPENDIX C

Regents' Resolution Regarding the Parnassus Heights Campus Site

1. The 61-acre reserve on Mount Sutro is reaffirmed as permanent open space.

2. The Parnassus Heights campus site boundary is reaffirmed as shown on **Figure C-1**.

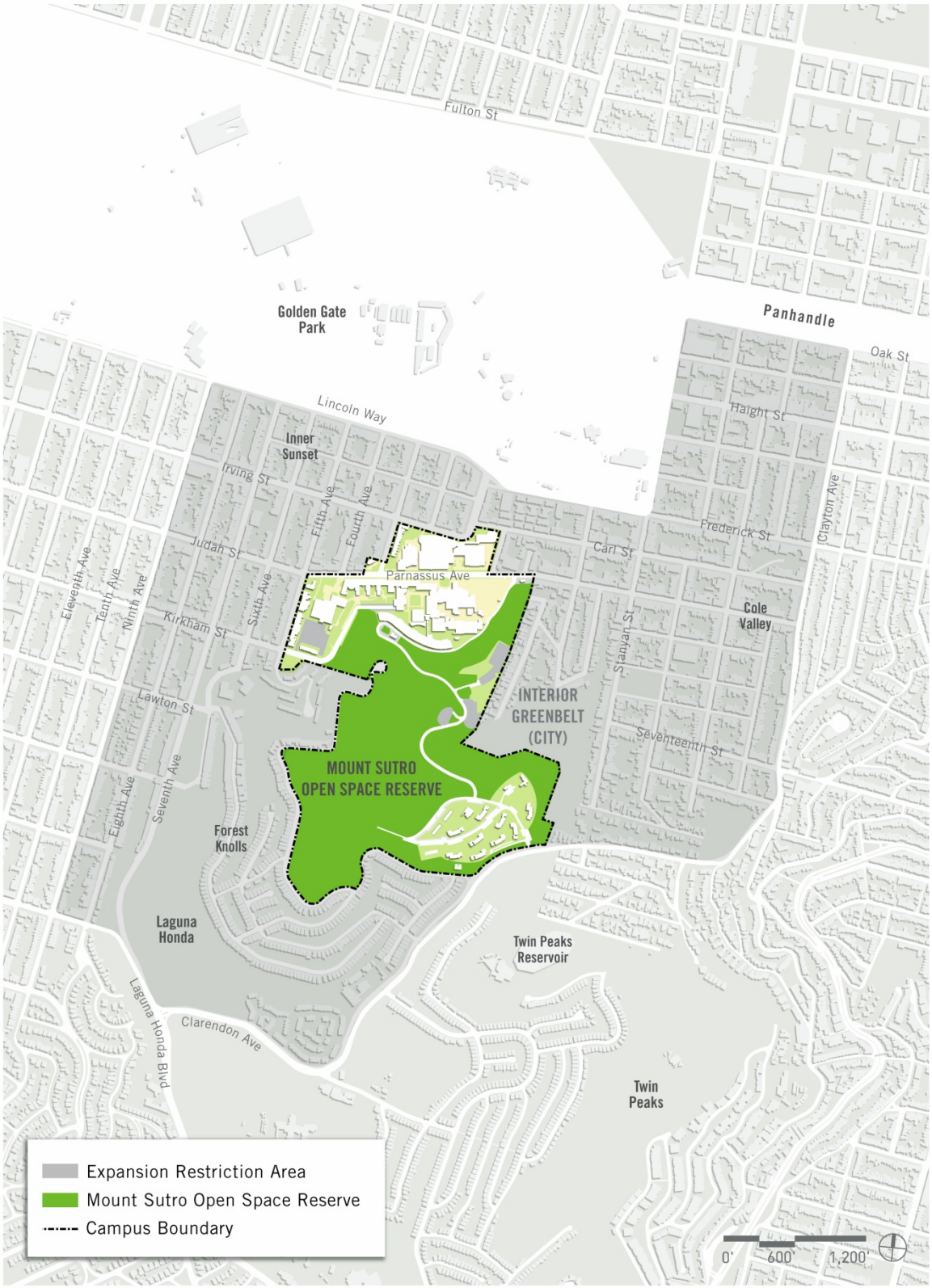
3. The space ceiling for the Parnassus Heights campus site is 3.55 million gross square feet. The space ceiling includes space in non-residential buildings within the boundary of the Parnassus Heights campus site.

4. The Third and Fifth avenue edges of the Parnassus Heights campus site will be consistent with the Housing functional zone designated for that area, to serve as a transition to the adjacent residential neighborhood in terms of use, character and scale.

5. UCSF is prohibited from expanding the Parnassus Heights campus site by purchase or condemnation or gift of any property or lease of private residential property not only contiguous with the campus site boundaries, but anywhere within the surrounding area bounded by Golden Gate Park, Oak Street, Ninth Avenue, Clayton Street, and Clarendon Avenue. This does not prohibit the use of commercial properties or the affiliation with other public agencies within the area described.

6. The Regents recognize the principle that the Parnassus Heights campus site will be administered so that the annual average of the daily campus population at the site will remain substantially in accordance with the projections set forth in the then-current Environmental Impact Report related to the Long Range Development Plan for the campus, as updated from time to time and approved by the Regents.

Figure C-1: Parnassus Heights Planning Agreements



APPENDIX D

UCSF Greenhouse Gas Reduction Strategy

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UCSF GREENHOUSE GAS REDUCTION STRATEGY

1.0 BACKGROUND AND OBJECTIVES

UC San Francisco (UCSF) prepared this greenhouse gas (GHG) reduction strategy (the UCSF GHGRS) in conjunction with the 2014 Long Range Development Plan (LRDP) to ensure that the LRDP is implemented in alignment with the UC *Sustainable Practices Policy,*[1] particularly the directives on greenhouse gases (GHGs), and to fulfill the GHG reduction requirements of the State of California *Assembly Bill 32 (AB): The California Global Warming Solutions Act of 2006*.[2] *AB 32* requires the State of California as a whole to reduce GHG emissions to 1990 levels by the year 2020.

The UCSF GHGRS:

- Consolidates GHG reduction efforts already underway and planned by UCSF over the life of the LRDP (through 2035);
- Reflects and reinforces the policy direction regarding GHG reduction provided in the UCSF *Climate Action Plan* (2009);[3]
- Quantifies the impact on GHG emissions of projected land use as represented by the LRDP;
- Creates a framework for the ongoing monitoring and revision of the UCSF GHGRS; and
- Helps streamline *California Environmental Quality Act* (CEQA)[4] review of future campus development projects as consistent with the LRDP growth projections and the GHG reduction policies and programs contained in this document.

The UCSF GHGRS was prepared in accordance with *CEQA Guidelines Section 15183.5*, which specifically addresses how lead agencies can analyze and mitigate GHGs at a programmatic level and streamline environmental review of future projects that are consistent with the policies and programs contained in the UCSF GHGRS. Development of this strategy was also informed by the Governor's Office of Policy and Research (OPR) *CEQA Guidelines*[5] and its technical advisory *CEQA and Climate Change*,[6] and by the Bay Area Air Quality Management District (BAAQMD) *California Environmental Quality Act Air Quality Guidelines*.[7]

For UCSF, with land use authority over a significant urban area, adoption of campus-wide plans, policies, and programs for reducing GHG emissions is an effective way to reduce the cumulative impact of UCSF operations on climate change, and to streamline later project-specific CEQA reviews. The UCSF GHGRS is intended to minimize the effects of GHGs at a programmatic level across the UCSF campuses through the year 2035. It is designed to be a "qualified" strategy under the streamlining provisions of *CEQA Guidelines Section 15183.5*, to provide CEQA coverage of GHG emissions for future development projects that are consistent with LRDP growth projections and the policies and strategies that are contained in the UCSF GHGRS. As future individual projects are proposed, project-specific environmental review documents can tier from or incorporate by reference the programmatic environmental review of the LRDP and GHGRS to determine if the project's GHG impact is cumulatively considerable. Future environmental documents that rely on the GHGRS for cumulative impact analysis of GHGs must identify the requirements specified herein that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. The procedure for determining if a future project is consistent with UCSF's LRDP and GHGRS is in Section 7.0: CEQA Project Review.

The essential requirements of a qualified GHG reduction strategy, under *CEQA Guidelines Section 15183.5,* and as interpreted by OPR and BAAQMD,[8] are as follows:

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1 policy.ucop.edu/doc/3100155/Sustainable%20Practices

Note: all web links provided in this document are active and correct as of May, 2014. Links will be updated as necessary in conjunction with any future updates to this document.

2 www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf

3 sustainability.universityofcalifornia.edu/documents/ucsf_cap_09.pdf

4 resources.ca.gov/ceqa

5 Governor's Office of Policy and Research (OPR), *CEQA Guidelines*, 2014. opr.ca.gov/s_ceqaguidelines.php

6 OPR. *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, 2008. opr.ca.gov/docs/june08-ceqa.pdf

7 Bay Area Air Quality Management District (BAAQMD). *California Environmental Quality Act Air Quality Guidelines,* updated May 2012. www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en

8 Ibid Section 4.3. www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx?la=en

See also BAAQMD's *GHG Plan Level Guidance*, May 2012. www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/GHG%20Quantification%20Guidance%20May%202012.ashx?la=en

- Establish a baseline GHG inventory for 2008 or earlier using accepted accounting protocols;
- Establish a business-as-usual GHG forecast for 2020 based on reasonable assumptions;
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the strategy would not be cumulatively considerable;
- Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographical area;
- Specify GHG reduction measures and performance standards, that, substantial evidence demonstrates, if implemented on a project-by-project basis, will collectively achieve the specified emissions target;
- Establish a mechanism by which to monitor the plan's progress toward achieving its targets and one which will trigger required amendment if the plan is not achieving specified levels; and
- Be adopted in a public process following environmental review.

UCSF's existing *Climate Action Plan*, dated December 2009, meets many but not all of these requirements. It establishes a 1990 baseline, which in turn informs a 2020 campus-wide target (consistent with *AB 32* and the UC *Sustainable Practices Policy*), forecasts emissions through 2020, and includes a comprehensive set of prescriptive GHG reduction measures. However, the *Climate Action Plan* did not undergo CEQA review and it was not adopted in a public process; in addition, it does not include a clear monitoring plan for tracking GHG emissions reductions and adjusting the plan over time to meet the 2020 target. As a result, the *Climate Action Plan* cannot be considered a "qualified" GHG reduction strategy. This document, however, will meet the criteria to be a qualified GHG reduction strategy.

As of 2014, qualified GHG reduction strategies are constructed around target year 2020, since that is the *AB 32* planning horizon. However, as the 2014 LRDP has a planning horizon of 2035, and as future legislation is anticipated that will mandate a new (post-2020) statewide GHG emissions level, the UCSF GHGRS provides a framework for meeting requirements and maintaining qualification through the year 2035.[9]

With respect to environmental review of a given project under the LRDP (the "project"), the GHGRS is intended to ensure that UCSF can answer "no" to the following questions regarding "Greenhouse Gas Emissions" in the Environmental Checklist Form (Appendix G) of the *CEQA Guidelines*:

- VII.a. Will the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- VII.b. Will the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?[10]

The UCSF GHGRS may require revision over time in response to changes in GHG regulations; changes to existing or planned state, UC, or UCSF GHG reduction programs and policies; or development patterns that diverge from the assumptions made when the LRDP was adopted. Circumstances that may lead to revision of this document are outlined in Section 6.0: Implementation and Monitoring.

2.0 POLICY AND REGULATORY SETTING

The UCSF GHGRS addresses applicable federal, state, regional, local, UC system-wide, and UCSF-specific policies and regulations in effect as of April 2014. These are outlined in the following sections.

2.1 POLICIES AND PLANS OF THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA AND UNIVERSITY OF CALIFORNIA OFFICE OF THE PRESIDENT

In 2007, the Chancellor of UCSF signed the *American College and University President's Climate Commitment* (ACUPCC)[11] to complete an emissions inventory, set target dates and interim milestones for becoming climate-neutral,[12] take steps to reduce GHG emissions, and prepare public progress reports. As an intermediate target, the University of California Office of the President (UCOP) established the goals of reducing GHG emissions to 2000 levels by 2014; 1990 levels by 2020; and achieving climate neutrality as soon as possible after reaching the 2014 and 2020 reduction targets. More recently, UCSF committed to achieving climate neutrality by

9 www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm

10 Applicable plans include *AB 32* and the *AB 32 Scoping Plan*, adopted UC policy, and the UCSF *Climate Action Plan*.

11 www.presidentsclimatecommitment.org/about/commitment

12 Climate neutrality is defined as the University having a net-zero impact on the Earth's climate; it will be achieved by minimizing GHG emissions as much as possible and by using other measures to mitigate the remaining GHG emissions (UCSF *Climate Action Plan*, December 2009).

the year 2047.[13] These goals pertain to Scope 1 and Scope 2 emissions[14] of the six Kyoto greenhouse gases originating from sources specified in the ACUPCC,[15] as well as Scope 3 emissions from business airline travel and commuting by UCSF staff and students. The *Sustainable Practices Policy* of the Board of Regents of the University of California (Regents) and the UCOP specifies that these goals will be pursued while maintaining the primary research and education mission of the University.

As outlined in UCSF's *Climate Action Plan* of 2009, the Regents approved and the UC President issued the *Sustainable Practices Policy* in 2007, which committed UC to implementing actions intended to minimize the University's impact on the environment and reduce the University's dependence on non-renewable energy. The policy was most recently revised in November 2013, and now covers the areas of green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, and sustainable water systems. The UC *Sustainable Practices Policy* will continue to be updated over time.[16]

The *Sustainable Practices Policy* sets the following requirements and goals relevant to GHG emissions reduction:

- Each UC campus must develop a long-term strategy for voluntarily meeting the requirements of California's *Global Warming Solutions Act of 2006 (AB 32)*;
- All campuses are instructed to attempt to achieve climate neutrality as soon as possible after meeting 2014 and 2020 reduction targets;
- New construction and renovations are required to achieve energy performance 20 percent better than that mandated by *Title 24* (policy maintained as *Title 24* is revised), and to strive to achieve 30 percent;
- New laboratory buildings must meet Labs21 Environmental Performance Criteria (EPC);[17]
- All new construction and major renovation projects must meet a minimum standard of LEED-NC Silver, and are to strive for LEED-NC Gold designation when possible;[18]
- The University is to use energy efficiency retrofits to reduce system-wide energy consumption by 10 percent or more, from the 2000 baseline, by 2014;
- Renovation projects greater than $5 million that do not quality for LEED-NC must be certified under LEED-CI;
- Renovation projects that require 100 percent equipment replacement, and 50 percent non-shell areas, must achieve LEED Silver certification at a minimum, and strive for Gold;
- Each campus is to submit one pilot LEED-EBOM building for certification by July 1, 2014;
- The University of California system is to have the capacity to provide up to 10 megawatts (MW) of renewable energy on-site by 2014 (approximately one MW per UC campus);
- Campuses are to develop goals for reducing transportation-related GHGs and report on progress annually;
- Transportation Demand Management (TDM) programs and projects are to be expanded and enhanced as appropriate to each campus;
- Campuses are to divert 50 percent of solid waste by 2008 and 75 percent by 2012, and are to achieve zero waste by 2020 (defined as diverting 95 percent or more of municipal solid waste);
- Each campus is to develop a *Water Action Plan* and reduce water consumption by 20 percent by 2020;
- All new buildings are to achieve at least two points in the LEED NC Water Efficiency category;
- Campuses are instructed to maximize procurement of environmentally preferable products and services; and
- By 2020, 20 percent of food products purchased by the University must be sustainable food products.

The UC President has set a goal for UC to become carbon

13 This is the current commitment made to ACUPCC and the goal that is referenced in UCSF's Annual Progress Report to the Board of Regents of the University of California (Regents). Carbon neutrality refers to achieving net zero cabon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered. At UC this means scopes 1 and 2 emissions by the year 2025. The carbon neutrality concept may be extended to include other greenhouse gases measured in terms of their carbon dioxide equivalence—the impact a GHG has on the atmosphere expressed in the equivalent amount of CO_2.

14 For a definition of Scope 1, Scope 2 and Scope 3 GHG emissions, see Section 3.0: UCSF GHG Emissions Inventory and Forecasts.

15 The six greenhouse gases identified in the Kyoto Protocol/ACUPCC are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs / CXFY). These are the same six greenhouse gases identified in CEQA *Section 15364.5*.

16 The current version of the Policy is available at: sustainability.universityofcalifornia.edu/policy.html

17 Website: www.labs21century.gov ; EPC document: www.i2sl.org/documents/toolkit/epc_3-0_508.pdf

18 Leadership in Energy and Environmental Design (LEED) definitions, details, and standards are available on the website of the US Green Building Council (USGBC, the organization that sets the standards). www.usgbc.org/leed

neutral by 2025 and purchase only clean energy.[19] This goal has not been formally adopted by the Regents as a policy, but UC is actively working on the President's initiative to be the first major research university to achieve carbon neutrality, with efforts planned or underway to:

- Create a shared service center, which both owns electricity-generation resources and purchases long-term forward contracts, and which will manage the supply of wholesale electricity to campuses eligible for direct access;
- Continue energy-efficient projects and expand them to include small- to medium-scale renewable energy sources[20] at all campus sites, and seek additional funding sources for these projects;
- Effectively manage the purchase of natural gas to mitigate risk tolerance to price changes, develop renewable natural gas (biogas), and purchase biogas contracts through outside producers; and
- Manage emissions allowances and offsets, comply with California's cap-and-trade program and other environmental attribute programs, and generate new funds to support projects resulting in GHG emission reductions.

2.2 UCSF POLICY AND PLANS

UCSF has a robust sustainability program covering sustainability activities across the entire campus. Through its Office of Sustainability, UCSF has created work groups addressing sustainability in the following areas, most of which have direct implications for GHG emissions: Carbon Neutrality, Zero Waste, Water Conservation, Sustainable Food, Toxics Reduction, Green Procurement, Green Buildings, and Sustainable Operations.

UCSF's Sustainability Governance consists of the Academic Senate Sustainability Committee and the Chancellor's Advisory Committee on Sustainability (CACS). The Academic Senate Sustainability Committee identifies faculty recommendations for improving sustainability at UCSF. The charge of the CACS is to:

- Annually examine UCSF's effect on the environment from a comprehensive perspective;
- Evaluate existing UCSF policies, procedures, and programs that affect the environment;
- Serve as a coordinating body for groups or individuals concerned with sustainability issues;
- Advise selected work groups in the development and implementation of UCSF's sustainability initiatives and goals; and
- Support reduction of greenhouse gas emissions to 1990 levels by 2020.

UCSF includes a Sustainability Dashboard on its Living Green website that includes performance metrics for multiple issue areas including GHG emissions. UCSF also publishes an annual sustainability report on its web-site.[21]

UCSF Climate Action Plan (2009)

As part of implementing the UC *Sustainable Practices Policy*, UCSF developed a *Climate Action Plan* in 2009, as mentioned in Section 1. The USCF *Climate Action Plan* is a long-term strategy for voluntarily meeting the State of California's goal for reducing GHG emissions to 1990 levels by 2020, pursuant to *AB 32*. The *Climate Action Plan* also addresses the UCOP goals for 2014 and 2020 target-year GHG emissions, and attaining climate neutrality[22] as soon as possible after achieving the 2014 and 2020 reduction targets. GHG emissions inventories are included for the years 1990, 2000, and 2008. The *Climate Action Plan* forecasts future emissions, and it assesses the impact of UCSF sustainability policies and programs on future GHG emissions and the prospects for achieving GHG reduction goals. The *Climate Action Plan* concluded that UCSF is expected to meet the goal of reducing GHG emissions to 2000 levels by 2014, but that the goal of reaching 1990 levels by 2020[23] likely would not be met without the use of additional reduction measures or carbon offsets.

UC Strategic Energy Plan

The UC *Strategic Energy Plan* (*SEP*)[24] was prepared in 2008 for all UC campuses, to fulfill a goal of UC's *Sustainable Practices Policy* to implement energy efficiency projects in

19 University of California, Office of the President Business Operations, November 2013. *President's Initiative: The First Research University to Achieve Carbon Neutrality*. sustainability.universityofcalifornia.edu/documents/carbon-neutrality2025.pdf

20 Renewable energy is power generated from inexhaustible sources, such as the sun or wind, or from sources that can quickly be replenished, such as biomass. For the purposes of this document, an energy source is renewable if it has been designated as such by the California Energy Commission. For details, see www.cpuc.ca.gov/PUC/energy/Renewables/FAQs/01REandRPSeligibility.htm .

21 Annual Sustainability Reports are available on the UCSF LivingGreen website: sustainability.ucsf.edu/

22 The *Climate Action Plan* defines climate neutrality as having a net zero impact on the Earth's climate, to be achieved by minimizing GHG emissions as much as possible and using carbon offsets or other measures to address the remaining GHG emissions.

23 During development of the UCSF GHGRS it was discovered that the 1990 emissions estimate in the 2009 *Climate Action Plan* is inaccurate, due to an error in energy accounting. The actual emissions were significantly higher, which means the 2020 target in the *Climate Action Plan* should have been higher as well. (See Section 3.4.1 for further detail).

24 System-wide *SEP*: sustainability.universityofcalifornia.edu/documents/ucsep_sw.pdf

existing buildings. The UCSF portion of the *SEP*[25] analyzes energy use and GHG trends, and identifies potential energy efficiency retrofit projects (primarily lighting, HVAC, commissioning, and central plant measures) at all buildings at UCSF having areas of 50,000 gross square feet (gsf) or larger. Energy savings, GHG emissions savings, and financial returns are estimated in the *SEP* for hundreds of projects, which are grouped into Tier 1 (high priority) and Tier 2 (longer-term planning) projects based on their energy savings and financial payback. The *SEP* project list is intended to be regularly updated by each campus to evaluate the feasibility of additional energy-saving measures.

Annual GHG Inventory Reporting

The UC *Sustainable Practices Policy* requires each campus to report a GHG emissions inventory to an independent reporting organization.

UCSF reported Scope 1 and Scope 2 emissions[26] for calendar-year 2008 to the California Climate Action Registry (CCAR). UCSF currently reports its annual Scope 1 and Scope 2 GHG emissions inventory to The Climate Registry (TCR). The most recent inventory reported to TCR was for calendar year 2012.[27] UCSF emissions inventories reported to outside agencies are verified by accredited independent auditors.

Since 2008, UCSF has also been required to report its annual Scope 1 emissions from the Parnassus Central Utility Plant (CUP) to the California Air Resources Board (CARB) under the *AB 32* Reporting Rule. (The CUP is the only UCSF facility that reaches the threshold for required reporting of emissions to the CARB under *AB 32* and federal regulations.)

UCSF tracks and reports its progress towards meeting its GHG emissions goals in its *Annual Sustainability Report*.[28] USCF also reports to the UC Regents annually on its progress in meeting the goals in the UC *Sustainable Practices Policy*. (See Section 3 for more on UCSF's inventories and reporting.)

25 UCSF *SEP*: sustainability.universityofcalifornia.edu/documents/ucsep_ucsf_mc.pdf

26 For more information on UCSF's Scope 1, Scope 2, and Scope 3 GHG emissions, see Section 3.0: UCSF GHG Emissions Inventory and Forecasts.

27 As of April 2014, UCSF was completing 2013 calendar year TCR reporting documents.

28 UCSF Office of Sustainability, *Annual Sustainability Report*, FY12-13: sustainability.ucsf.edu/what_ucsf_is_doing_2/annual_report_fy12_13

2.3 FEDERAL REGULATIONS

Under the *Mandatory Reporting of Greenhouse Gases Rule (74 FR 56260)*[29] of the United States Environmental Protection Agency (USEPA or EPA), large emitters of GHGs are required to report their emissions annually to a public database. Under this rule, GHG emissions from the CUP have been reported annually to the EPA since 2010.

2.4 STATE OF CALIFORNIA AND PROGRAMS AND POLICIES

California is a leader in developing climate change mitigation and adaptation strategies. Since 2005, California has been developing policy and passing legislation that seeks to control emissions of GHGs. These have included regulatory approaches, such as mandatory reporting for significant sources of GHG emissions and caps on emission levels, as well as market-based mechanisms, such as the market-based cap-and-trade exchange. Some regulations apply at the state level, but others are state-imposed mandates that are applicable at the municipal level and required of local agencies and jurisdictions.

Governor's Office of Planning and Research

The California Governor's Office of Planning and Research (OPR) provides guidance for agency compliance with CEQA, which requires that public agencies analyze and document the environmental impacts of proposed projects. OPR has developed guidance on the analysis and mitigation of GHG emissions in CEQA documents. This guidance states that lead agencies should develop their own approach to performing climate change analysis for projects that generate GHG emissions, and that compliance with CEQA can be achieved by identification and quantification of GHG emissions, assessment of significance of the impact on climate change, and identification of mitigation measures and/or alternatives if the impact is found to be significant.

OPR developed, and the California Resources Agency has adopted, amendments to the *CEQA Guidelines* to incorporate this guidance. *CEQA Guidelines Section 15183.5(b)* states that a lead agency may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gases or similar document, and that such a plan may be used in a cumulative impacts analysis of a project. A lead agency may determine that an individual project's incremental contribution to a cumulative effect on climate change is not cumulatively considerable if the project

29 epa.gov/climate/ghgreporting/basic-info/index.html

complies with the requirement of the previously adopted plan to reduce greenhouse gas.

State of California Executive Order S-3-05: Greenhouse Gas Emission Reduction Targets

In June 2005, the Governor of California signed *Executive Order S-3-05*,[30] which identified the California Environmental Protection Agency (Cal/EPA) as the lead coordinating state agency for establishing climate change emission reduction targets in California. A "Climate Action Team," a multi-agency group of state agencies, was established and tasked with implementing *Executive Order S-3-05*. The Governor's order established aggressive emissions reductions goals: by 2010, GHG emissions must be reduced to 2000 levels; by 2020, GHG emissions must be reduced to 1990 levels; and by 2050, GHG emissions must be reduced to 80 percent below 1990 levels. GHG emission reduction strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006.

State Assembly Bill 32 (AB 32): The California Global Warming Solutions Act of 2006

In 2006, the California legislature adopted *AB 32*, requiring that California cap GHG emissions state-wide at 1990 levels by 2020, as already discussed. *AB 32* requires CARB to establish a program for statewide GHG emissions reporting, and monitoring/enforcement of that program.

The *Climate Change Scoping Plan*,[31] adopted in 2008 and being updated in 2013-2014, outlines the State's plan to achieve the GHG reductions required in *AB 32*. The actions vary by type, which include direct regulations, alternative compliance mechanisms, incentives, voluntary actions, and other mechanisms. The scoping plan identifies local governments as "essential partners" in achieving California's goals to reduce GHG emissions, and encourages the adoption of reduction targets for community and municipal operations emissions that are consistent with the State's commitment (identified as equivalent to 15 percent below "current" levels). *AB 32* spawned many high-impact State measures that target emissions from transportation and power generation, including the Pavley vehicle emissions standards (*Assembly Bill 1493*), the *Renewables Portfolio Standard*, and the *Low Carbon Fuel Standard*, each of which is described below.

Assembly Bill 1493 (Pavley): Clean Car Standards

Assembly Bill 1493 (*AB 1493*, also known as the Pavley bill),[32] directed CARB to adopt regulations to reduce emissions from new passenger vehicles. *AB 1493* required GHG emission reductions from passenger trucks and light cars beginning in 2011. CARB's *AB 32 Early Action Plan*, released in 2007, included a strengthening of the Pavley regulation for 2017. The USEPA granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles in June, 2009. In September of that year, CARB adopted amendments to Pavley that mandated ever-greater reductions to GHG emissions from new passenger vehicles from 2009 through 2016. It is expected that the Pavley regulations will reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016, while improving fuel efficiency and reducing motorists' costs.

Senate Bill 1078 (SB 1078): Renewables Portfolio Standard

California's *Renewables Portfolio Standard* (*RPS*) was established in 2002 under *SB 1078*;[33] it was accelerated in 2006 under *SB 107*[34] and further expanded in 2011 under *SB 2*.[35] Under *AB 32*, the *Renewables Portfolio Standard* requires increased production of energy from renewable sources, like solar, wind, geothermal, and biomass generation. Investor-owned utilities, electric service providers, and community choice aggregators must increase their renewable portfolio to reach 33 percent of total procurement by 2020. UCSF's primary electricity provider, Pacific Gas and Electric (PG&E), expects to meet in excess of 33 percent of its retail energy demand with eligible renewable resources prior to 2020.

Low Carbon Fuel Standard (LCFS) Regulations

The *LCFS* (also known as *EO-S-1-07*)[36] regulations require fuel providers in California to decrease lifecycle fuel carbon intensity[37] by 2020. The *LCFS* applies, either on a compulsory or opt-in basis, to all fuels used for transportation in California. It is expected that the *LCFS* will reduce tailpipe carbon

30 www.resources.ca.gov/ceqa

31 www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm

32 www.arb.ca.gov/cc/ccms/documents/ab1493.pdf

33 www.energy.ca.gov/portfolio/documents/documents/SB1078.PDF

34 www.leginfo.ca.gov/pub/05-06/bill/sen/sb_0101-0150/sb_107_bill_20060926_chaptered.pdf

35 www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.pdf

36 www.arb.ca.gov/fuels/lcfs/lcfs.htm

37 "Attempt to calculate the emissions of greenhouse gases over the full life of a power source, from groundbreaking to fuel sources to waste management back to greenfield status." en.wikipedia.org/wiki/Comparisons_of_life-cycle_greenhouse_gas_emissions

emissions from passenger vehicles and heavy-duty trucks by approximately 10 percent by 2020. CARB identified specific eligibility criteria in 2009, and the regulation came into effect in January, 2010. In December, 2011, the U.S. District Court for the Eastern District of California issued rulings that struck down the *LCFS* for violation of the Commerce Clause of the U.S. Constitution, and enjoined its further enforcement. CARB appealed the ruling the following month. In 2013, the State of California Court of Appeal, Fifth Appellate District, held that *LCFS* would remain in effect, allowing CARB to continue to implement and enforce the 2013 regulatory standards while making additional amendments. CARB staff will present the revised *LCFS* regulation in the fall of 2014, including 2013 amendments as well as new concepts to improve flexibility, efficiency, and enforcement of the regulation.

2013 Building Energy Efficiency Standards (Title 24 Update)

In 2013, the California Energy Commission (CEC) updated the *California Code of Regulations (CCR), Title 24* of the California Energy Code,[38] so as to enhance the energy efficiency requirements of newly constructed buildings. The 2013 standards were adopted in 2012, and are effective as of July 1, 2014. The update to the code supports the goals described in *AB 32* by enhancing energy efficiency of all new residential and non-residential development, and streamlines the compliance process. The 2008 update reduced GHG emissions levels from electricity use by approximately 21 percent, and from natural gas use by 9 percent for California residential buildings, and by approximately 5 percent for electricity and 9 percent for natural gas for non-residential buildings. The 2013 update to the standards (effective 2014) is expected to further reduce the energy use of new buildings by approximately 20 percent (compared with the 2008 standards); the update also has provisions that are designed to save an estimated 200 million gallons of water per year statewide.

Senate Bill 97 (SB 97): CEQA Guidelines Amendments

The legislature enacted *SB 97*[39] to augment *AB 32*, which did not discuss how GHGs should be addressed in documents prepared under CEQA. *SB 97* required the OPR to develop and adopt amendments to the *CEQA Guidelines* regarding the mitigation of emissions; these were formalized on March 18, 2010. All CEQA documents prepared subsequently have been required to comply with the OPR-approved amendments to the *CEQA Guidelines*.

Senate Bill 375 (SB 375): The Sustainable Communities Act

In 2008, *SB 375*[40] was enacted to address indirect GHG emissions caused by urban sprawl. *SB 375* develops emissions-reduction goals that regions can apply to planning activities. *SB 375* provides incentives for local governments and developers to create new walkable and sustainable communities, revitalize existing communities, and implement conscientiously planned growth patterns that concentrate new development around public transportation nodes. CARB has been working with the state's metropolitan planning organizations to align their regional transportation, housing, and land use plans so as to reduce vehicle miles traveled and attain regional GHG reduction targets. The legislation also allows developers to bypass environmental review of the project's GHG impact under CEQA if they build projects consistent with the Sustainable Community Strategy of a given planning organization.

SB 375 enhances CARB's ability to reach the goals of *AB 32* by directing the agency to develop regional GHG emission reduction targets for 2020 and 2035 that are to be achieved through these the land use and transportation sector. For example, in September, 2010, CARB adopted placeholder per capita emissions reduction targets for the San Joaquin Valley (including eight planning organizations) of five percent and 10 percent, respectively, to be revised in 2012. On December 14, 2012, the Policy Council adopted a progress report that maintained these target recommendations.

Senate Bill 226 (SB 226): Streamlining for Infill Projects

This 2011 California law streamlines environmental review of eligible infill projects under CEQA. Under *SB 226*,[41] qualifying infill projects can avoid environmental review of impacts that were addressed in prior, program-level analysis, or where local development standards already mitigate them. *SB 226* defines infill projects as residential, retail, commercial or mixed-use development, transit stations, schools and public office buildings, on previously developed urban sites or vacant land at least 75 percent surrounded by urban uses. The project must be consistent with *AB 32* and the regional sustainable community strategy developed pursuant to *SB 375*, and be consistent with state planning priorities, water conservation and energy efficiency standards, transit-oriented development policies, and public health policies.

38 www.energy.ca.gov/title24/2013standards/index.html

39 resources.ca.gov/ceqa/docs/Adopted_and_Transmitted_Text_of_SB97_CEQA_Guidelines_Amendments.pdf

40 www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_bill_20080930_chaptered.pdf

41 www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0201-0250/sb_226_bill_20110909_amended_asm_v93.html

2.5 REGIONAL PLANS AND POLICIES

The BAAQMD is the primary agency responsible for regional air quality regulation in the nine-county San Francisco Bay Area Air Basin (SFBAAB). The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of GHGs and in reducing air pollutants that affect the health of residents. The BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

In June 2010, the BAAQMD issued revised guidelines (*BAAQMD CEQA Air Quality Guidelines*) for determining CEQA significance thresholds for air pollutants including GHG emissions. Updated in May 2012, these guidelines include recommendations for analytical methodologies to determine air quality impacts and identify mitigation measures that can be used to avoid or reduce GHG emissions. The guidelines also define the essential requirements of a qualified GHG reduction strategy under *CEQA Guidelines Section 15183.5*, consistent with the OPR directives.

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted its 2010 thresholds of significance. However, in August 2013 the State Court of Appeal issued a full reversal of the Superior Court ruling, although at the time of this analysis, BAAQMD has not formally readopted these thresholds. Notwithstanding formal adoption, the 2011 thresholds are based on substantial evidence provided by BAAQMD (BAAQMD, 2009), and have been accepted by the University of California for use in the LRDP EIR.

The threshold for stationary sources is 10,000 metric tons (mt) of CO_2e[42] per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a qualified GHG reduction strategy (i.e., if a project is found to be out of compliance with a qualified greenhouse gas reduction strategy, its GHG emissions may be considered significant); or
- 1,100 mt of CO_2e per year (i.e., emissions above this level may be considered significant); or
- 4.6 mt of CO_2e per service population (SP) per year (i.e., emissions above this level may be considered significant). "Service population" is the sum of residents plus employees[43] expected for a development project.

For quantifying a project's GHG emissions, BAAQMD recommends that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. Direct emissions refer to emissions produced from on-site combustion of energy, such as natural gas used in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced off site from energy production and water conveyance due to a project's energy use and water consumption. BAAQMD has provided guidance on detailed methods for modeling GHG emissions from proposed projects (BAAQMD, 2012). The above-stated thresholds apply only to operational emissions. To date, the BAAQMD has not adopted numeric thresholds for the assessment of construction-related emissions.

2.6 CITY AND COUNTY OF SAN FRANCISCO PLANS AND POLICIES

As outlined in LRDP Appendix C, the 1987 *Memorandum of Understanding* (MOU) between UCSF and the City and County of San Francisco, UCSF maintains constitutional autonomy (per Article 9, Section 9 of the California State Constitution) over the land and facilities it owns or operates within the city of San Francisco. This authority includes University master planning and oversight of land uses and the development, maintenance and use of physical facilities owned or operated by UCSF. Thus, the following City plans and policies apply only to facilities located within the City that UCSF leases from a third party.

City and County of San Francisco Greenhouse Gas Reduction Strategy

San Francisco has a history of environmental protection policies and programs aimed at improving the quality of life for residents and reducing detrimental impacts on the environment. A comprehensive assessment of these policies,

42 **Equivalent carbon dioxide (CO_2e)** is a measure for describing how much global warming a given type and amount of greenhouse gas may cause, using the functionally equivalent amount or concentration of carbon dioxide (CO_2) as the reference. Carbon dioxide equivalency is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO_2 that would have the same global warming potential, when measured over a specified timescale (generally, 100 years). Carbon dioxide equivalency thus reflects the time-integrated radiative forcing of a quantity of *emissions* or rate of greenhouse gas emission—a *flow* into the atmosphere—rather than the instantaneous value of the radiative forcing of the stock (concentration) of greenhouse gases *in the atmosphere* described by CO_2e. en.wikipedia.org/wiki/Carbon_dioxide_equivalent

43 For UCSF, "employees" includes staff and faculty.

programs and ordinances was compiled into the City's *Strategies to Address Greenhouse Gas Emissions in San Francisco* in 2010.[44] The BAAQMD concurs that the strategy meets the criteria for a qualified GHG reduction strategy as outlined in BAAQMD's 2010 *CEQA Air Quality Guidelines*.

The following plans, policies, and legislation demonstrate San Francisco's continued commitment to environmental protection. They include measures applicable to this project that would decrease the amount of GHG emissions emitted into the atmosphere and thus decrease San Francisco's overall contribution to climate change. These programs are collectively referred to as *San Francisco's GHG Reduction Strategy*.

Climate Action Plan for San Francisco

In February 2002, the San Francisco Board of Supervisors passed the *Greenhouse Gas Emissions Reduction Resolution (Resolution Number 158-02)*[45] that set a goal for the City to reduce GHG emissions to 20 percent below 1990 levels by the year 2012. In September 2004, the San Francisco Department of the Environment and San Francisco Public Utilities Commission (SFPUC) published the *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions*.[46] This climate action plan provides the context of climate change in San Francisco and examines strategies to meet the 20-percent GHG emissions reduction target. Although the Board of Supervisors has not formally committed the City to perform the actions addressed in the plan, and many of the actions require further development and commitment of resources, the plan serves as a blueprint for GHG emissions reductions, and several actions have been implemented or are now in progress. Through 2010, the City of San Francisco's GHG emissions were 14.5 percent below the 1990 emission levels.[47] While this reduction has not quite met the goals of the resolution, it does surpass international and statewide emissions targets established as part of the Kyoto Protocol, which called for emission reductions of seven percent by 2012, and *AB 32*, which called for statewide emissions to return to 1990 levels by 2020.

The City updated its *Climate Action Plan* In October 2013, changing its title to the *San Francisco Climate Action Strategy*.[48] The update is organized around three main goals:

- Send zero waste to landfills by 2020;
- Source 100 percent of residential and 80 percent of commercial electricity from renewable sources by 2030, an effort tied to energy-efficiency improvements that will reduce usage; and
- Attain a level of 50 percent of all transportation trips in the city being completed without the use of personal vehicles by 2017.

Electricity Resource Plan (Revised December 2011)

The 2013 *San Francisco Climate Action Strategy* concludes that moving to 100-percent-renewable electricity is the single biggest step the City can take to reduce GHG emissions. The purpose of the 2011 update to San Francisco's 2002 *Electricity Resource Plan*[49] was to identify strategies for San Francisco to achieve a GHG-free electric system by 2030, meeting all of its energy needs from renewable and zero-GHG electric energy sources. The plan affects not only the SFPUC in its role of providing electric power to serve municipal facilities (17 percent of San Francisco's total energy usage), but also the 83 percent of electric energy currently being supplied to San Francisco by PG&E and various energy service providers.

Green Building Ordinance

In August, 2008, the City enacted the *San Francisco Green Building Ordinance* for newly constructed residential and commercial buildings and major renovations to existing buildings. The ordinance (Chapter 13C of the San Francisco Building Code[50]) goes beyond the State's CALGreen mandatory green building measures, and specifically requires newly constructed commercial buildings larger than 5,000 gsf, residential buildings over 75 feet in height, and renovations on buildings over 25,000 gsf to achieve a Leadership in Energy and Environmental Design (LEED) rating of Gold or higher starting in 2012. As a result, San Francisco has achieved the highest per-capita density of LEED-certified square footage of any U.S. city.

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44 City of San Francisco Planning Department, Strategies to Address Greenhouse Gas Emissions in San Francisco, November 2010. sfmea.sfplanning.org/GHG_Reduction_Strategy.pdf

45 www.sf-planning.org/ftp/files/MEA/GHG-Reduction_Rpt.pdf

46 www.sf-planning.org/ftp/files/MEA/GHG-Reduction_Rpt.pdf

47 San Francisco Department of the Environment. San Francisco *Climate Action Strategy*, 2013 Update. www.sfenvironment.org/sites/default/files/engagement_files/sfe_cc_ClimateActionStrategyUpdate2013.pdf

48 *Ibid.*

49 San Francisco Public Utilities Commission. *San Francisco's 2011 Updated Electricity Resource Plan: Achieving San Francisco's Vision for Greenhouse Gas Free Electricity*, March, 2011. sfwater.org/Modules/ShowDocument.aspx?documentID=40

50 Updated version of the San Francisco Building Code: www.energy.ca.gov/title24/2008standards/ordinances/sanfrancisco/2010-12-29_San_Francisco_Green_Building_amendments.pdf

Existing Commercial Buildings Energy Performance Ordinance (San Francisco Environment Code, Chapter 20)

Under this ordinance, passed in 2011, nonresidential buildings of 10,000 square feet and larger must benchmark and publically report energy use every year, and undergo a professional energy audit every five years. This ensures that property owners, managers, and tenants know how their buildings are performing and can make informed decisions about effective energy-efficiency strategies for their buildings.

Transit First Policy

In 1973, the City instituted the *Transit First* policy,[51] which added *Article 8A, Section 8A.115* to the City Charter with the goal of reducing San Francisco's reliance on freeways and meeting transportation needs by emphasizing mass transportation. The *Transit First* policy gives priority to public transit investments, adopts street capacity and parking policies to discourage increased automobile traffic, and encourages the use of transit, bicycling, and walking instead of single-occupant vehicles. The University is committed to supporting the City's *Transit First* policy.

San Francisco Municipal Transportation Agency's Zero Emissions 2020 Plan

The *Zero Emissions 2020 Plan* focuses on the purchase of cleaner emission transit buses, including hybrid diesel-electric buses. Under this plan, hybrid buses will replace the oldest diesel buses, some dating back to 1988. The hybrid buses emit 95 percent less particulate matter (soot) than the buses they replace; they produce 40 percent less nitrogen oxides and reduce GHGs by 30 percent.

Zero Waste

In 2004, the City committed to a goal of diverting 75 percent of its waste away from landfills by 2010, with the ultimate goal of zero waste by 2020. San Francisco recovered 80 percent of discarded material in 2012, the most recent year for which the San Francisco Department of the Environment has published data.[52]

Mandatory Recycling and Composting Ordinance

In 2009, the City adopted an ordinance that requires all businesses and residences to compost food scraps and biodegradable products.[53] Businesses and residents are provided with green, blue, and black bins to sort their food and other biodegradable waste, recycling, and trash, respectively. Businesses and residents that do not comply with the ordinance are subject to fines, depending on the level and duration of noncompliance.

Waste Reduction Ordinances

The City has in place ordinances to reduce waste from retail and commercial operations. *Ordinance No. 295-06*,[54] the *Food Waste Reduction Ordinance*, prohibits the use of polystyrene foam disposable food serviceware and requires use of biodegradable/compostable or recyclable food serviceware by restaurants, retail food vendors, city departments, and city contractors. *Ordinance No. 81-07*,[55] the *Plastic Bag Reduction Ordinance*, requires stores located within the city to use compostable plastic, recyclable paper, and/or reusable checkout bags.

Construction and Demolition Debris Recovery Ordinance

City *Ordinance No. 27-06* (2006)[56] requires that all construction and demolition debris be transported to a registered facility that can divert a minimum of 65 percent of the material from landfills. This ordinance applies to all construction, demolition, and remodeling projects within the city.

3.0 UCSF GHG EMISSIONS INVENTORY AND FORECASTS

UCSF has inventoried its campus-wide GHG emissions for several calendar years, including 1990, 2000, and every year since 2007, using standard accounting protocols from the California Climate Action Registry (CCAR), The Climate Registry (TCR), the California Air Resources Board (CARB), and the United States Environmental Protection Agency (USEPA), as discussed in Section 2.2. Reporting rules, protocols, and registries have evolved over this time, with the CCAR no longer active and TCR taking over as the leading

51 San Francisco's *Transit First* policy is part of the *Transportation Element of the San Francisco General Plan*. www.sf-planning.org/ftp/general_plan/I4_Transportation.htm#TRA_TF

52 San Francisco Public Utilities Commission. *Departmental Climate Action Plan Annual Report, Fiscal Year 2011-2012*, May 2013. sfwater.org/modules/showdocument.aspx?documentid=4138

53 *Ordinance No. 100-09*. www.sfenvironment.org/sites/default/files/policy/sfe_zw_sf_mandatory_recycling_composting_ord_100-09.pdf

54 www.sfgov2.org/ftp/uploadedfiles/fswr/documents_forms/FSWR_RulesAndRegs.pdf

55 www.sfgov2.org/ftp/uploadedfiles/fswr/documents_forms/FSWR_RulesAndRegs.pdf

56 www. www.sfgov2.org/ftp/uploadedfiles/fswr/documents_forms/FSWR_RulesAndRegs.pdf sfenvironment.org/sites/default/files/fliers/files/cd_ordinance.pdf

national registry for voluntary reporting. As a major stationary source (greater than 25,000 mt CO_2e per year) and electric power producer, the Parnassus Central Utility Plant (CUP) falls under state and federal reporting requirements. Since 2008, CUP emissions have been reported to CARB under California's *GHG Mandatory Reporting Regulation* (part of *AB32*); and since 2010 CUP emissions have been reported to the USEPA under the *Greenhouse Gas Reporting Rule (74 FR 56260)*.

3.1 ORGANIZATIONAL BOUNDARY

All of the standardized GHG reporting protocols and methodologies require a clear delineation of the organizational and operational boundaries used to account for emissions in an inventory. The organizational boundary includes all facilities and GHG sources over which the reporting entity has management control. Management control can be defined in either financial or operational terms, but the boundary definition must be applied consistently across the organization. Through calendar year 2011, the UCSF inventory based its organizational boundary on the operational control criterion, which requires inclusion of all wholly-owned facilities, and all facilities for which UCSF has operational control through an operational lease or other means. Facilities with which UCSF has an affiliation agreement but not operational control, such as San Francisco General Hospital and Trauma Center (SFGH) or the San Francisco Veterans Affairs Medical Center (SFVAMC), have reported their emissions separately through their own documents.

Starting with the 2012 GHG inventory reported to TCR, UCSF now delineates its organizational boundary using the financial control criterion. Under this criterion, UCSF reports emissions from facilities and sources that are wholly owned, and from facilities and sources that are partially owned but where UCSF retains financial control (e.g., through a capital or financial lease, or where majority ownership establishes management control). Due to this organizational boundary change, pre-2012 inventories in the UCSF GHGRS are presented with boundary adjustments to enable direct comparison with current and future inventories. (Essentially, emissions associated with leased facilities are removed from the pre-2012 inventories.)

3.2 OPERATIONAL BOUNDARY

The operational boundary describes the direct and indirect sources of GHG emissions included in the inventory. GHG reporting protocols generally break emissions down into three source categories related to the level of operational control exercised by the organization over the emission source. For UCSF, the following sources are included:

- **Scope 1 Emissions** – Direct emissions, including stationary combustion such as boilers, hydrofluorocarbon (HFC) refrigerant use, and some medical gases (anesthesia), as well as non-stationary combustion of fuels in University-owned vehicles.
- **Scope 2 Emissions** – Indirect stationary sources, including emissions from purchased electricity and purchased steam for leased facilities.
- **Scope 3 Emissions** – Other indirect emissions from business air travel and from commuting by students, faculty, and staff. Scope 3 is defined as emissions that are a consequence of the activities of the institution, but occur from sources not owned or controlled by the institution.

UC's *Sustainable Practices Policy* stipulates that each UC campus will annually inventory its GHG emissions in accordance with ACUPCC and TCR requirements, to include Scope 1 and Scope 2 emissions as well as Scope 3 emissions from business air travel and from commuting by students, faculty and staff.[57] Inclusion of Scope 3 emissions is optional for TCR reporting, and when reported they are generally not third-party verified.

The standardized reporting methodology also incorporates protocols for carbon sequestration accounting – e.g., 'credits' for items such as institution-owned large tracts of forest land held as 'permanent' (100-year) open space. Although UCSF owns the Mount Sutro Open Space Reserve located at the Parnassus Heights campus site, UCSF GHG inventories do not account for carbon sequestration in the Reserve. UCSF has no plans to develop buildings in the Reserve and intends to leave it in a forested state. Forest land policy is currently being discussed by UC at the system level. Future updates of UCSF's *Climate Action Plan* may include offsets attributable to forest management. If a change in land use or forest coverage were to occur, the net change in sequestered carbon associated with that change would be evaluated and may be included in the inventory.

3.3 ESTABLISHING A BASELINE

There are different requirements for and varying guidance regarding the various reporting rules for establishing a GHG emissions baseline. BAAQMD's guidance for a qualified GHG reduction strategy is to set the baseline inventory as calendar-year 2008 or earlier. Important considerations in setting the baseline include the accuracy and completeness of underlying data, and the role of the baseline in forecasting future

57 Although UCSF has in the past (e.g., 2009 *Climate Action Plan*) included estimates of Scope 3 emissions from wastewater treatment and off-site disposal of solid waste, UC policy does not require their inclusion in annual inventory reporting to the UC Regents or to TCR. Together, these sources accounted for approximately two percent of total emissions in UCSF's 1990 and 2008 inventories.

emissions and setting reduction targets.

AB 32 requires the state to reduce GHG emission to 1990 levels by 2020. Since most communities and facilities covered under *AB 32* do not have access to high quality data for estimating 1990 GHG emissions, CARB and the California Attorney General recommend that plan-level GHG reduction strategies target 2020 emissions at 15 percent below a 2008 (or earlier) baseline. From a statewide perspective, CARB has determined that 15 percent below 2008 is approximately equivalent to 1990 levels.[58] This approach to setting a 2020 target is supported by BAAQMD[59] and OPR,[60] and represents current best practice for climate action plans and general plans adopted by cities and public agencies throughout California. (More on the UCSF GHGRS approach to setting future emission targets and establishing a CEQA threshold is provided in Section 4.0.)

3.4 INVENTORY RESULTS

Table 1 provides a summary of campus-wide GHG inventories for 1990, 2008, and 2012 (the most recently reported year). The inventories contain all sources within the operational boundary prescribed by UCOP's *Sustainable Practices Policy*, which includes all Scope 1 and Scope 2 emissions as well as Scope 3 emissions from business air travel and commuting by students, faculty and staff. A subtotal is provided for Scope 1 and Scope 2 emissions, reflecting the operational boundary associated with the UC President's carbon neutral initiative. The results show that total Scope 1, 2, and 3 GHG emissions increased from 109,817 mt CO_2e in 1990 to 156,339 mt CO_2e in 2008 (a 42 percent increase), and subsequently dropped to 150,258 mt CO_2e in 2012.

The following sections provide more detail on each inventory, highlighting similarities, differences, and data quality.

3.4.1 1990 Inventory

UCSF's earliest GHG inventory (calendar year 1990) is largely based on 1990 activity data, but there are several sources for which accurate or complete data is not available, leaving a certain amount of uncertainty in the GHG emissions estimates for those sources. As mentioned in Section 2.2 / footnote 21 and explained further below, this data reflects an adjustment made to the 1990 inventory as it appeared in the 2009 *Climate Action Plan* to correct for an accounting error discovered during development of the UCSF GHGRS; when the 1990 inventory was first developed, only half of the utility data was aggregated, so the initial 1990 emissions estimates for energy included in the 2009 *Climate Action Plan* were erroneously low. In **Table 1**, the adjusted values for natural gas and electricity emissions have been corrected to account for a full year of energy data. In addition, also as previously discussed, emissions from electricity used by leased buildings were removed from the calculations shown in **Table 1** to maintain consistency with the organizational boundary change that was made starting with the 2012 inventory (from operational to financial control). The 1990 inventory has not been independently audited, nor has it been submitted to a GHG emissions registry.

The largest of the 1990 inventory contributing sectors, Buildings and Facilities - Natural Gas (40.9 percent of total) and Buildings and Facilities - Electricity (22.3 percent), are based on actual utility consumption data tracked in the billing system. However, the utility data represents fiscal year 1989-1990, which is an approximation of calendar-year 1990.

The third-largest contributor to 1990 GHG emissions, the commute to work (15.6 percent of total), was estimated based on a comprehensive transportation survey that UCSF prepared in 1991, which accounts for both mode-split and trip lengths, as explained in the 2009 UCSF *Climate Action Plan*. Other sectors of this inventory, such as UCSF Fleet fuel consumption, did not have centralized record keeping in place in 1990, and were estimated based on an algorithm combining 2008 data scaled to the facility size and population at that time (i.e., fleet emissions are based on 2008 actual fuel consumption data scaled to the 1990 facility size and population). Similarly, Refrigerants and Medical Gases emissions data are an estimate based on 2008 known usage scaled to the conditions that existed in 1990. (Medical gas use is largely dependent on hospital stays; UCSF did not experience a significant change in the size or use of inpatient clinical facilities between 1990 and 2008.)

Following standard GHG accounting protocol, the CCAR acquisition adjustment accounts for the transfer of historical emissions associated with land and buildings purchased by UCSF after 1990. This adjustment methodology is in place so that an institution that has goals related to meeting 1990 emissions levels can accurately account for enterprise-wide emissions source changes through time. In a series of acquisitions, starting in 1998, UCSF acquired a new 57-acre campus site in the formerly industrial Mission Bay South Redevelopment Area of San Francisco. The 1990 historical emissions from this acquired site are represented by the CCAR acquisition adjustment, and are now included in all UCSF inventories since 2008.

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58 In its *Climate Change Scoping Plan* of September 2008, CARB recommends that local governments adopt a GHG reduction target consistent with the State's commitment to reach 1990 levels by 2020. This is identified as equivalent to 15 percent below "current" levels at the time of writing (2008).

59 BAAQMD's *CEQA Guidelines* (updated May, 2012).

60 Based on conversations with OPR, and expected to be articulated in OPR's forthcoming *Climate Action Plan* Technical Advisory, (publication expected in 2014).

Table 1: UCSF GHG Emissions Inventories (values in mt CO_2e)

Scope	Emissions Category	1990	1990%	2008	2008%	2012	2012%
1	Buildings & Facilities - Natural Gas	44,923	40.9%	90,026	57.6%	84,605	56.3%
1	Buildings & Facilities - Other Fuels	114	0.1%	NA	NA	NA	NA
1	UCSF Fleet	1,944	1.8%	3,200	2.0%	2,710	1.8%
1	Refrigerants and Medical Gases	3,500	3.2%	3,500	2.2%	1,079	0.7%
1	CCAR Acquisition Adjustment	10,178	9.3%	NA	NA	NA	NA
1	LRDP Construction Emissions	NA	NA	NA	NA	NA	NA
2	Buildings & Facilities - Electricity	24,529	22.3%	24,962	16.0%	23,781	15.8%
	Scopes 1 and 2 SUBTOTAL	**85,188**	**77.6%**	**121,688**	**77.8%**	**112,175**	**74.7%**
3	Business Air Travel	7,549	6.9%	12,582	8.0%	13,385	8.9%
3	Commute	17,080	15.6%	22,069	14.1%	24,698	16.4%
	Scopes 1, 2, and 3 TOTAL	109,817	100.0%	156,339	100.0%	150,258	100.0%

3.4.2 2008 Inventory

The 2008 GHG inventory was the first of the UCSF inventories to be audited by an accredited third-party verifier, providing a high degree of confidence in the accuracy and completeness of the underlying data and emissions calculations. The 2008 inventory (Scope 1 and Scope 2 emissions) was reported to the CCAR, while the 2008 emissions from the CUP were reported to CARB under California's *GHG Mandatory Reporting Regulation*. The 2008 figures provided in **Table 1** do not include emissions from electricity used by leased buildings; this is in order to maintain consistency with the organizational boundary change that was made starting with the 2012 inventory (from operational to financial control).

As described in the 2009 *Climate Action Plan*, emissions estimates for all sectors included in the adjusted 2008 inventory are based on actual activity data (utility natural gas and electricity usage, fleet fuel consumption, etc.). As with the 1990 inventory, the Commute emissions estimate is based on a comprehensive transportation survey for 2008.

3.4.3 2012 Inventory

UCSF's latest GHG inventory (calendar year 2012) was third-party verified and reported to TCR. The TCR reporting protocol requires quantification of all Scope 1 and Scope 2 emissions, while reporting of Scope 3 is optional. As mentioned previously, the organizational boundary change made in 2012 means that leased facilities are not included. The 2012 figures in **Table 1** include the emissions reported to TCR, plus the Scope 3 emissions for business air travel and commuting by students, faculty, and staff, so as to match the operational boundaries used for the 1990 and 2008 inventories. In 2012, 96.6 percent of total emissions were associated with three sectors: Buildings and Facilities - Natural Gas (56.3 percent of total), Buildings and Facilities - Electricity (15.8 percent), and Commute (16.4 percent).

3.5 GHG INVENTORY FORECASTS

Consistent with the requirements for a qualified GHG reduction strategy, 2020 and 2035 forecasts of GHG emissions are based on campus energy-use trends, the anticipated impact of LRDP developments, the anticipated impact of existing energy efficiency and GHG reduction programs, and campus growth assumptions consistent with the LRDP. **Table 2** provides a summary of campus-wide GHG emissions for 1990, 2008, and 2012, along with the forecasts for 2020 and 2035. These forecasts are adjusted to incorporate the impact of state-wide measures for reducing transportation-related emissions, namely the Pavley bill (*AB 1493*), which addresses vehicle fuel efficiency, and *LCFS*. Notes on the assumptions and methodologies used to forecast emissions for each sector are provided below.

Table 3 provides a summary of the LRDP building growth assumptions used in the GHG emissions forecasting, broken down by the five main campus sites covered by the LRDP.

The projected impacts of the state's *Renewables Portfolio Standard (RPS)* and the UCSF *Strategic Energy Plan (SEP)* are incorporated into the 2020 and 2035 forecasts for energy-related emissions. Energy data for the past four years were analyzed by the UCSF Energy and Facilities teams to quantify energy use intensities for buildings on each of the main campus sites and larger properties, as well as the impact of *SEP* projects on energy use intensity over the same time period. **Table 4** provides a summary of the future energy use

Table 2: GHG Emissions History and Forecasts (values in mt CO_2e)

Scope	Emissions Category	1990 Inventory	2008 Inventory	2012 Inventory	2020 Forecast	2035 Forecast
1	Buildings & Facilities - Natural Gas	44,923	90,026	84,605	85,589	87,668
1	Buildings & Facilities - Other Fuels	114	NA	NA	NA	NA
1	UCSF Fleet	1,944	3,200	2,710	2,432	2,718
1	Refrigerants and Medical Gases	3,500	3,500	1,079	1,254	1,550
1	CCAR Acquisition Adjustment	10,178	NA	NA	NA	NA
1	LRDP Construction Emissions	NA	NA	NA	27	129
2	Buildings & Facilities - Electricity	24,529	24,962	23,781	20,302	29,205
	Scopes 1 and 2 SUBTOTAL	**85,188**	**121,688**	**112,175**	**109,604**	**121,270**
3	Business Air Travel	7,549	12,582	13,385	14,009	17,257
3	Commute	17,080	22,069	24,698	22,167	24,771
	Scopes 1, 2, and 3 TOTAL	**109,817**	**156,339**	**150,258**	**145,780**	**163,299**

Table 3: UCSF Building Space Forecasts

Campus Site	2012 GSF	2020 GSF	2035 GSF
Mission Bay	1,926,700	3,878,200	5,933,900
Parnassus Heights	3,301,800	3,271,300	3,475,500
Mount Zion	776,200	948,700	948,700
Mission Center Building	290,700	290,700	390,800
Laurel Heights	362,800	362,800	362,800
Other UCSF buildings	332,700	507,800	508,700
TOTAL SPACE	**6,990,900**	**9,259,500**	**11,620,400**

Table 4: UCSF Building Energy Use Intensities

Campus Site	Average energy use intensity in kbtu/sf			Est % reduction per year through 2035
	2012	2020 Forecast	2035 Forecast	
Mission Bay	240.4	213.0	169.8	1.50%
Parnassus Heights	304.6	269.9	215.1	1.25%
Mount Zion	314.6	278.8	222.2	1.50%
Mission Center Building	135.3	119.9	95.6	1.50%
Laurel Heights	53.2	47.1	37.6	1.50%

intensities forecasted for buildings at each of the campus sites, based on the analysis.

Average annual energy efficiency gains were calculated for each campus area and carried forward in future energy use intensity forecasts for each campus area. Next, the square footage projections in the LRDP were combined with existing square footage and the results were used as the basis for estimating total energy use in 2020 and 2035.[61] This formed the basis for quantifying net energy consumption and GHG impacts of LRDP construction, demolition, and space-use changes, combined with *SEP* energy-efficiency projects and the anticipated carbon-reducing impact of the RPS on grid-supplied electricity over time (with future emission factor estimates provided by PG&E). Note that the analysis does not account for *Title 24* and UCOP green building policy impacts (20 percent beyond *Title 24*).

Additional notes on forecasting methodology:

- **UCSF Fleet Emissions:** Forecasts are based on the LRDP's anticipated growth of student and staff populations by 2020 and 2035.
- **Commute Emissions:** Forecasts are based on the LRDP's anticipated growth of student and staff populations by 2020 and 2035.
- **Refrigerants and Medical Gases:** Forecasts are based on the LRDP's anticipated growth of students, staff, patients, and visitors by 2020 and 2035.
- **Solid Waste Emissions:** Forecasts are based on the LRDP's anticipated growth of students, staff, patients, and visitors by 2020 and 2035.
- **LRDP Construction Emissions**: Forecasts are calculated using the California Emissions Estimator Model (CalEEMod), developed by the State of California to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from land use projects.
- **Adjustments for Statewide Transportation Measures:** Combined, *AB 1493* (Pavley vehicle efficiency standards) and the *LCFS* are expected to reduce overall emissions from cars and light-duty trucks by approximately 21 percent from 2012 levels by 2020, and 25 percent by 2025. The adjusted forecasts assume that the entire UCSF fleet will be impacted by Pavley and the *LCFS*.
- **Air Travel Emissions:** Forecasts are based on the LRDP's anticipated growth of student and staff populations by 2020 and 2035, and then adjusted to account for the expected continuation of fuel efficiency improvements over time. A study by the Federal Aviation Administration (FAA) reports that "Aircraft fuel efficiency has historically improved by about one percent per year. This trend is expected to continue for the foreseeable future."[62]

4.0 GHG TARGETS AND CEQA THRESHOLDS OF SIGNIFICANCE

The UCSF GHGRS utilizes two approaches to establishing campus-wide GHG emissions targets for 2020 that are consistent with UC policy and *AB 32*, as well as other California policy on GHG emissions. One approach is based on UCSF's 1990 emissions inventory, while other is based on UCSF's verified 2008 inventory, using the 15-percent-downward adjustment recommended by CARB to account for emissions growth since 1990. The GHG emissions targets for 2035 were established by determining the midpoint between the state's 2020 target (1990 levels) and 2050 target (80 percent below 1990 levels); this resulted in a target of 40 percent below 1990 levels by 2035. **Table 5** summarizes the 2020 and 2035 targets as determined by these two methods.

The 2035 target may require revision over time, with new developments in UC policy, changes to state policy, or new statewide GHG emissions targets established by the California legislature. As of 2014, CARB's *Draft AB 32 Scoping Plan* recommends setting the 2030 statewide target at 40 percent below 1990 levels; if this target is adopted by law, a straight-line interpolation between CARB's recommended 2030 target and the state's 2050 emissions commitment produces a 2035 target of 50 percent below 1990 levels.

Table 6 compares the two UCSF campus-wide GHG targets against the forecasts for 2020 and 2035, showing the annual GHG reductions needed to meet them. **Table 6** also includes the annual reductions by 2020 and 2035 expected from implementation of the UCSF GHGRS. At minimum, a reduction of 35,963 mt CO_2e per year will be needed to meet the 2020 target, while an annual reduction of 97,408 mt CO_2e will be needed to meet the 2035 target.

The UCSF GHGRS includes two categories of GHG reduction measures: those to which UCSF is already committed in terms of funding and/or implementation (called "Tier 1" measures); and those that are in the planning stages (called "Tier 2" measures). As summarized in **Table 6**, Tier 1 measures are expected to provide annual reductions estimated at 12,878 mt CO_2e by 2020, and 26,830 mt CO_2e by 2035. These measures are described in detail in the following section. Tier 2 measures will provide the additional reductions needed to meet the 2020 and 2035 targets. Tier 2 measures are described in Section 5.3 and in **Table 8**.

61 The 2035 gsf estimate includes Phase 2 of the Medical Center at Mission Bay.

62 Federal Aviation Administration (FAA) Office of Environment and Energy, *Aviation & Emissions: A Primer,* 2005. www.faa.gov/regulations_policies/policy_guidance/envir_policy/media/AEPRIMER.pdf

Table 5: UCSF Campus-wide GHG Emissions Targets (values in mt CO_2e)

Based on 1990 Inventory			Based on 2008 Inventory		
1990	2020 Target	2035 Target	2008	2020 Target	2035 Target
109,817	109,817	65,890	156,339	132,888	79,733

Table 6: UCSF GHG Reduction Targets and Annual Reductions Needed (values in mt CO_2e)

	2020	2035
Emissions Forecast	145,780	163,299
1990-based Target	109,817	65,890
Annual Reductions Needed	35,963	97,408
2008-based Target	132,888	79,733
Annual Reductions Needed	12,892	83,566
Annual Reductions from Tier 1 GHG Measures (from Table 7)	12,878	26,830
Minimum Annual Reductions from Tier 2 GHG Measures	23,085	70,578
Total Annual Reductions Expected from UCSF GHGRS	35,963	97,408

Figure 1 shows the changes in UCSF GHG emissions over time, beginning with the 1990, 2008, and 2012 inventories, and continuing with the emissions forecasts for 2020 and 2035. The solid line indicates historical emissions between 1990 and 2012 based on inventory results. The orange dashed line represents the emissions forecasts provided in **Table 2**, while the green dashed line represents the annual emissions that result with implementation of the Tier 1 measures in the UCSF GHGRS, as presented in the following section. The blue dotted line accounts for the additional impact of Tier 2 measures, representing the path to carbon neutral that passes through the 2020 and 2035 targets and achieves carbon neutrality by 2047, reflecting the UCSF commitment to ACUPCC and the goal that is referenced in UCSF's Annual Progress Report to the UC Regents. The horizontal dotted lines represent the 2020 and 2035 GHG emissions targets based on the 1990 inventory.

5.0 GHG REDUCTION MEASURES

This section describes the GHG reduction measures currently underway at UCSF, as well as those measures that are funded or to which UCSF is currently committed. Tier 1 GHG reduction measures are organized into two major categories: Energy and Transportation.

Table 7 summarizes the significant Tier 1 strategies (comprised of programs, policies, and actions) that are expected to reduce GHG emissions between now and the planning horizon for the LRDP (2035). Most of the programs and policies associated with these strategies are outlined in the 2009 *Climate Action Plan* and on the UCSF Office of Sustainability's website. GHG reduction estimates associated with these measures, if not already incorporated into future emissions forecasts (e.g., EN1: SEP Implementation), are provided for 2020 and 2035. The following sections provide more detail about the key programs, policies and actions comprising each of the measures. Detailed worksheets showing assumptions, methodologies and emissions calculations are provided.

The following sections describe in more detail the implementing actions associated with each Tier 1 measure, and the GHG reductions expected to result from those actions.

Figure 1: UCSF GHG Emissions Timeline

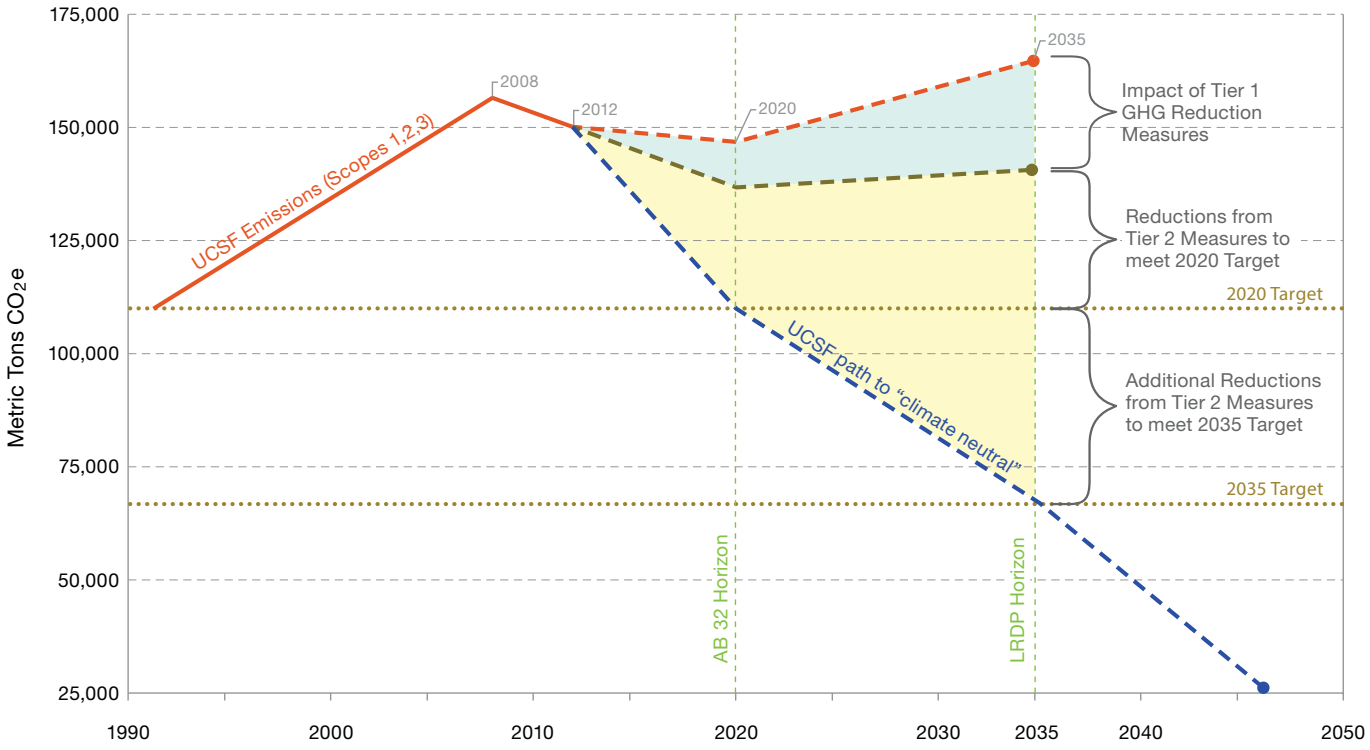

Table 7: UCSF Tier 1 GHG Reduction Measures

Strategy ID	Strategy Name	Annual GHG Reduction by 2020 (mt CO_2e)	Annual GHG Reduction by 2035 (mt CO_2e)
Energy			
EN1	Improve Energy Efficiency of Existing Buildings and Operations (SEP Implementation)	NA	NA
EN2	Green Building Standards	5,235	10,792
EN3.1	Renewable Energy: On-Site Solar PV	128	377
EN3.2	Renewable Energy: Purchasing Green Electricity	-	6,721
EN3.3	Renewable Energy: Purchasing Biogas	6,379	6,379
Transportation			
TR1	Reduce Vehicle Trips	1,137	2,561
TR2	Clean Vehicle Strategies	-	-
	TOTAL	12,878	26,830

5.1 TIER 1 ENERGY MEASURES

Strategy EN1: Improve Energy Efficiency of Existing Buildings and Operations (SEP Implementation)

Key Implementing Actions:

- Continue to revise and implement the *SEP* to achieve energy efficiency improvements consistent with the results of the past four years.
- Continue to participate in the system-wide UC/CSU Investor Owned Utility Energy Partnership.

Annual GHG reduction by 2020: 12,786 mt CO_2e (incorporated into forecast)

Annual GHG reduction by 2035: 22,292 mt CO_2e (incorporated into forecast)

Implementation Timeframe/Status: In progress; to continue through 2035.

Discussion: UCSF owns or leases space in 189 buildings throughout San Francisco, and energy consumption varies considerably by building use (among other variables, such as building age). For example, research and clinical, or complex space, comprises about 25 percent of UCSF assignable square footage but uses about 70 percent of the total energy consumed. The typical laboratory uses far more energy and water per square foot than the typical office building, due to intensive process and ventilation requirements.

Since the early 1990s, UCSF has periodically written *Strategic Energy Plans (SEPs)* to identify and prioritize implementation of campus investments in energy efficiency projects for existing buildings and infrastructure. The most recent UCSF *SEP* was completed in September 2008.[63] These plans, with three-year to seven-year timelines, examine UCSF facilities of 50,000 gsf or larger for application of new efficiency technologies, implementation of best practices, and available financial incentive programs. Focused primarily on electrical infrastructure, the projects are expected to produce savings equal in value to investment costs within 10 years.

Over the past five years (2009 through 2013), implementation of *SEP* projects has saved more than 12,000 megawatt hours (MWh) of electricity and more than 1,700,000 therms of natural gas, according to estimates provided by the UCSF energy engineer. These energy efficiency gains translate directly into GHG emissions reductions. The *SEP* projects undertaken by UCSF over the past 20 years have contributed to a 35-percent reduction of GHGs compared to a business-as-usual scenario.

SEP projects cover a wide variety of improvements, from changing lighting fixtures to building new power plants. Lighting and HVAC (heating, ventilation, and air conditioning) projects are particularly effective tools for achieving reductions. UCSF will continue to convert existing T12 and 32-watt T8 fluorescent light fixtures to 28 watt T8 lamps. Other projects include broader use of occupancy sensor controls, daylight harvesting (using daylight to offset the amount of electric lighting needed to properly light a space), and more energy-efficient stairwell fixtures. The replacement of lighting in parking structures and interior high intensity discharge (HID) fixtures with fluorescent is also being evaluated. As new technologies such as LED lighting, bi-level fixtures (which allow dimming to lower intensity during unoccupied periods), and induction lamps (long-lasting fluorescent lamps without electrodes or filaments) become readily available (anticipated in the near future), these technologies will be incorporated into energy efficiency retrofit projects as appropriate. HVAC improvements in the 2008 *SEP* include meeting basic efficiency standards for air handlers with a horsepower of 10 and greater by: controlling variable air volume with economizers, operating only the hours necessary, providing demand control ventilation where warranted, and controlling static pressure reset to optimize HVAC systems to actual operating conditions.

The *SEP* includes projects for upgrading laboratory fume hoods with more energy-efficient high-performance models. As explained in the 2009 *Climate Action Plan*, fume hoods use large amounts of energy, and if all of the fume hoods campus-wide[64] were retrofitted and operated to maximize energy efficiency, as much as 4,600 mt CO_2e per year could be avoided.

UCSF is a participant in the system-wide UC/CSU Investor Owned Utility Energy Partnership (Partnership). The Partnership is designed to help campuses implement energy efficiency programs that decrease their energy use. The Partnership encourages energy-efficient operations and maintenance practices by offering incentives for equipment improvements, and offering training and providing tools to reduce energy consumption and peak demand. The total incentive funds received to date (2014) exceed $3.5 million. Over the past four years, energy efficiency strategies have reduced energy use across UCSF buildings by approximately

63 This five-tiered *SEP*, sponsored by the University of California Office of the President (UCOP), serves to identify, quantify, prioritize and assist UC campuses in realizing energy-saving opportunities in new construction, retro-commissioning, deferred maintenance, and facility renewal and retrofit projects.

64 Due to an increased awareness of risks associated with exposure to chemicals, and an expanding research program, the number of fume hoods at UCSF has increased from ~400 in 1990 to more than 750 in 2009. The operational energy cost of UCSF's 750 fume hoods is about $4.9 million per year.

17 percent on a per-square-foot basis.

The largest single *SEP*-type project undertaken by UCSF since 1990 has been the Parnassus Central Utility Plant (CUP). The CUP is a 12-MW cogeneration facility constructed between 1995 and 1997; it replaced a far less efficient 50-year-old facility that had significantly higher emissions per MWh.

The CUP cogeneration system is a highly efficient generator of energy that uses a single source of clean fuel (natural gas) to produce two energy products, electricity and heat. The heat is used locally for buildings, instead of being discarded as in a conventional electrical generation facility; the captured heat can be used for either heating or cooling buildings. Further efficiencies are gained by the proximity of the cogeneration plant to the end user, both because transmission losses due to resistance are reduced and because supply can be more quickly matched to demand. Conventional energy production transmits electricity from remote generation sites with low efficiency rates (35 percent); when this is combined with the high efficiency rates (80 percent) of natural gas burned on-site in boilers, UCSF reaches an overall institutional efficiency rate of about 54 percent. In contrast, on-site cogeneration directly employs the thermal energy by-products associated with electricity production, and accompanied with much lower transmission losses, provides an overall institutional efficiency rate of about 76 percent.

As noted in the preceding section, the GHG-reducing impact of EN1 is already incorporated into the future GHG emissions forecasts for 2020 and 2035.

Strategy EN2: Green Building Standards

Key Implementing Actions:

- Exceed *Title 24* energy requirements by at least 20 percent (for all new buildings and major renovations except acute care facilities); strive to achieve 30 percent improvement over *Title 24*. This requirement is maintained over time as *Title 24* is revised.
- Pursuant to the UC *Sustainable Practices Policy*, design and build all new buildings (except for laboratory and acute care facilities) to a minimum standard that is equivalent to a LEED Silver rating. Strive to achieve a standard equivalent to a LEED-NC Gold rating or higher for all such projects whenever possible, within the constraints of program needs and standard budget parameters.
- Design the UCSF Medical Center at Mission Bay to LEED Gold standards. (Facilities that are already constructed or are planned or under construction were designed to meet a LEED Gold standard; future building projects are also expected to meet or exceed this standard.)
- Per the UC *Sustainable Practices Policy*, design all new UCSF laboratory buildings so as to meet Labs21 Environmental Performance Criteria (EPC).

Annual GHG reduction by 2020: 5,235 mt CO_2e

Annual GHG reduction by 2035: 10,792 mt CO_2e

Implementation Timeframe/Status: In progress; to continue through 2035.

Discussion: To improve energy efficiency of new buildings, UCSF relies on several available tools, programs and building codes. *Title 24* of the California Energy Code enhances the energy efficiency requirements of all newly constructed buildings and major renovations. The 2013 *Title 24* update, effective July 1, 2014, improves energy performance of new buildings by as much as 23 percent over the 2008 standard, depending on the type of building and its intended use. Major renovations also benefit with respect to energy savings, though to a lesser degree.

The UC *Sustainable Practices Policy* states that the University of California shall incorporate the principles of energy efficiency and sustainability in all capital and renovation projects within budgetary constraints and programmatic requirements. Given the importance of energy efficiency to green building design, the University has set a goal for all new building projects, other than acute care facilities, to outperform the requirements of *Title 24* energy-efficiency standards by at least 20 percent.[65]

UCSF is committed already to designing and building all new buildings (except for laboratory and acute care facilities, addressed separately below) so as to meet a minimum standard of sustainability that is equivalent to a LEED-NC Silver rating. In addition, and at the same time, UCSF will continue to strive to achieve a standard equivalent to a LEED-NC Gold rating or higher for such new buildings, whenever possible within the constraints of program needs and standard budget parameters. Over time, this will help achieve the energy savings and GHG emissions reductions associated with EN2, as well as providing the myriad long-term economic, social, and health benefits that accrue to the communities occupying green building spaces, compared with those in conventional buildings.

Central to its academic mission, research laboratories make up a large percentage of the new space developed by UCSF. These types of facilities, filled with specialized equipment, consume significantly more energy per square foot than the average building. Given the importance of specifically

65 Although the *Title 24* building code does not apply to hospitals, new UCSF medical facilities must be designed to a LEED Silver standard or higher, which achieves energy savings similar to *Title 24*. The Medical Center at Mission Bay is being designed to a LEED Gold standard.

addressing sustainability in laboratory facilities, UCSF has also committed to designing all new laboratory buildings to a minimum standard equivalent to a LEED-NC Silver rating and the Laboratories for the 21st Century (Labs21) Environmental Performance Criteria (EPC), as appropriate. The UCSF design process includes attention to energy efficiency for UCSF buildings that meet LEED standards for New Construction (listed by standard achieved and year completed):

- Aldea Center on Mount Sutro, 2013 – Gold
- Cardiovascular Research Institute (CVRI), 2012 – Gold
- Dolby Regeneration Medicine, 2011 – Gold
- The Osher Building, 2010 – Silver

UCSF buildings that meet LEED standards for Existing Buildings Operations and Maintenance:

- Arthur and Toni Rembe Rock Hall (Rock Hall), 2009 – Silver

UCSF buildings that meet LEED standards for Commercial Interiors:

- 1500 Owens Street (leased), third floor clinics, 2012 – Gold
- HSE5 Center for Bioengineering and Tissue Regeneration, 2012 – Gold
- Pharmaceutical Packaging Facility, 2011 – Gold
- HSE 15 S/D Craniofacial & Mesenchymal Biology Program Lab Renovation, 2010 – Gold
- MSB S1372 Anatomy Department Renovation, 2013 – Silver
- Campus Data Center, 2009 – Silver
- 654 Minnesota Street, 2009 – Certified
- HSW Dentistry Lab, 2005 - Certified

UCSF must ensure that all regulatory obligations are met when the University considers design or operational strategies for reducing GHG emission. Agencies such as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), the Occupational Safety and Health Administration (OSHA), and the Institutional Animal Care and Use Committee (IACUC) often have safety protocols in place that constrain UCSF's ability to satisfy GHG reduction goals and simultaneously maintain an acceptable safety margin.

Strategy EN3.1: Renewable Energy: On-Site Solar PV

Key Implementing Actions:

- Build solar photovoltaic (PV) energy installation (750 kW) at Mission Bay Hospital; to be operational by 2020.
- Implement Priority 1 solar PV projects (as determined by UCSF engineer) over the next 20 years.

Annual GHG reduction by 2020: 128 mt CO_2e

Annual GHG reduction by 2035: 377 mt CO_2e

Implementation Timeframe/Status: In progress; to continue through 2035.

Discussion: Planned and financed solar PV installations expected to be operational by 2020 represent approximately 750 kW capacity, capable of displacing 128 mt CO_2e per year using conservative assumptions about PV panel efficiency and electrical productivity in San Francisco. Longer-term, additional solar PV projects deemed Priority 1 because of their financial payback potential are expected to add 1,465 kW for a total capacity of 2,215 kW, displacing approximately 377 mt CO_2e per year by 2035.

Strategy EN3.2: Renewable Energy: Purchasing Green Electricity

Key Implementing Actions:

- Implement UC's Wholesale Electricity Program to increase the supply of low-carbon electricity sources through direct access suppliers;
- Continue, on an on-going basis, to pursue the possibility of increasing purchases of low carbon electrical power from the grid.

Annual GHG reduction by 2020: TBD

Annual GHG reduction by 2035: TBD

Implementation Timeframe/Status: In progress; to continue through 2035.

Discussion: The UC President's goal for UC to become carbon-neutral by 2025 means that UCSF is serious about purchasing green power. In support of this goal, the UC Wholesale Electricity Program is actively seeking to increase the supply of low-carbon electricity sources through direct access suppliers. Under the Wholesale Electricity Program, UC will become its own registered Energy Service Provider and procure wholesale power for participating campuses (including UCSF), with a target commencement date of January 1, 2015. The Wholesale Electricity Program will serve to stabilize UC's energy costs and provide an opportunity to procure larger proportions of carbon-free energy than would be otherwise available through traditional channels.

As of 2014, almost all of UCSF's outside electrical power is purchased from PG&E, one of the cleanest investor-owned large utilities in the country. PG&E is currently forecasting even lower average carbon content for its grid-supplied electricity through the year 2020. This analysis assumes that PG&E

electricity represents the lowest-carbon electricity alternative for UCSF through 2020. Thus, there are no GHG reductions associated with this measure by 2020.

This GHGRS uses PG&E's 2020 emission factor to forecast 2035 electricity-related GHG emissions (PG&E does not currently provide emission factor forecasts beyond 2020). After 2020, however, it is reasonable to assume that UCSF will continue to lower the average carbon content of its electricity supply due to cleaner electricity from PG&E, or by increasing its allocation of clean Western Area Power Authority (WAPA) hydropower, or purchasing renewable power through its direct access supplier. The annual GHG reduction estimate for 2035 therefore conservatively assumes a 25 percent reduction in the carbon content of grid-supplied electricity from 2020 to 2035.

Strategy EN3.3: Renewable Energy: Purchasing Biogas

Key Implementing Actions:

- Purchase biogas for use at CUP to reduce anthropogenic GHG emissions from the facility, if appropriate sources are available and approved by CARB.

Annual GHG reduction by 2020: 6,379 mt CO2e (incorporated into forecast)

Annual GHG reduction by 2035: 6,379 mt CO2e (incorporated into forecast)

Implementation Timeframe/Status: The University is currently examining its options in the marketplace.

Discussion: CO_2 emissions from combustion of biogas are considered biogenic and represent a net-zero addition of GHG emissions to the atmosphere. UCSF is currently committed to purchasing 120,000 MMBTU[66] per year of biogas for use in the CUP, which would avoid the production of approximately 6,379 mt CO_2e per year from combustion of natural gas.

5.2 TIER 1 TRANSPORTATION MEASURES

Strategy TR1: Reduce Vehicle Trips

Key Implementing Actions:[67]

- As development occurs under the LRDP, increase on-site amenities (such as child care, food services, banking, retail shops, laundry, and fitness facilities), and limit parking for on-campus housing and staff.
- Add on-site housing for faculty and students.
- Enhance and expand existing car-share, vanpool, and carpool programs and incentives.
- Modify existing shuttle routes and implement NextBus Technology Application, which displays schedule, stop locations, and estimated time of arrival for UCSF shuttles.
- Encourage departments to allow flexible work schedules and telecommuting.
- Implement LRDP plans to realign supply chain, warehousing, and deliveries so as to streamline all parts of the process and minimize truck trips.

Annual GHG reduction by 2020: 1,137 mt CO2e (incorporated into forecast)

Annual GHG reduction by 2035: 2,561 mt CO_2e (incorporated into forecast)

Implementation Timeframe/Status: In progress; to continue through 2035.

Discussion: Reductions in UCSF GHG emissions attributable to transportation come from both local institutional actions and from technological and regulatory changes driven by the state and federal government. State and federal government actions to-date have focused on cleaner vehicle technologies, transportation system efficiency improvements, and land use policy. Actions taken by UCSF to address transportation-related GHG emissions have been aimed at reducing vehicle miles traveled (VMT), and include: implementation of various transportation demand management measures, improvements to the campus transportation system, and improving the jobs-to-housing balance. Emissions from transportation are greatly dependent on the length of trips, and the mode of travel used. Generally, bicycle and walking trips produce almost zero carbon emissions, and a trip on public transit produces about half the quantity of GHG emissions as would a comparable trip by private automobile.

As stated in the 2014 LRDP, key features of UCSF's existing TDM program include the following:

- 60 shuttles serving 17 locations, with over 2.3 million passengers per year
- 33 vanpools that travel as far as Sacramento and operate using the Green Road Safety System, which improves fuel consumption and safety
- 62 reserved carpool stalls at various sites
- Marin Commute Club buses with about 55 daily riders who live in Marin and Sonoma Counties to the north of the city
- 18 City CarShare vehicles with dedicated parking spaces,

66 MMBTU signifies [one] million British Thermal Units; the BTU is a traditional unit of energy equal to about 1055 joules. In reference to natural gas, 1 MMBTU (1 million BTU) = 1.054615 GJ. One therm equals 100,000 BTUs.

67 Measure assumes implementation of Transportation Demand Management programs, as described in the *Transportation Demand Management Program Improvement Measures Evaluation* report by Fehr & Peers, August 30, 2012.

along with 1,500 UCSF members who can use these vehicles by scheduling their use online

- Over 1,900 UCSF users of the ZimRide online carpool matching program
- 972 bicycle parking spaces with another 100 planned at Mission Bay, as well as bike racks on shuttles, a cyclist shower program that allows bicyclists to use UCSF showers at a discount, and other bicycle-related benefits
- Bay Area Bike Share station at Mission Bay (due to begin construction in July 2014), where members will have access to bicycles (and a regional network of stations) provided by the Bay Area Air Quality Management District
- More than 400 off-street motorcycle parking stalls in garages and surface parking lots
- An "emergency ride home" program to encourage use of alternative modes of transportation
- Clipper Card (public transit pass) sales at easily accessible locations, including through UCSF's website
- Close to 1,800 UCSF employees participate in a pretax transit program, which saved UCSF employees over $700,000 on public transit commute costs in 2013

UCSF's shuttle system services all primary UCSF campuses, as well as select secondary campus locations, and is free to UCSF faculty, staff, students, patients, and visitors. On average, a total of 7,435 people ride the system daily, with demand for additional service growing by around five percent per year. The 2014 UCSF *Shuttle Operations Study* estimates a demand for 401 additional trips by 2020, and an additional 3,611 trips by 2035. The study also contains recommendations for expanding service lines to meet increasing demand as development occurs under the 2014 LRDP.

UCSF faces considerable constraints outside of its control in developing affordable housing. Housing is an auxiliary enterprise of the University, serving as a support service to its primary educational mission; and therefore, by UC policy, it must be financially self-supporting. Land in San Francisco is extremely expensive to acquire, and UCSF has limitations on new development on land it already owns (such as Aldea Housing at Parnassus Heights). UCSF will continue to implement the goals of the 2005 *Housing Master Plan* to provide more reasonably priced housing for up to 1,400 individuals in targeted groups of the campus community. The 2014 LRDP includes plans for over 1,600 new housing units to be built at Parnassus Heights and Mission Bay by 2035.

Emission reduction estimates for this measure are based on data provided in the report *Transportation Demand Management Program Improvement Measures Evaluation* by Fehr & Peers (2012).

Strategy TR2: Expand Fleet of Clean Vehicles

Key Implementing Actions:

- Continue to incentivize UCSF departments to purchase fuel efficient vehicles (hybrid, electric, CNG) by waiving the annual permit fee of $1,932.00 per vehicle. This has been an effective strategy in encouraging departments to purchase fuel-efficient and alternative-fuel vehicles.
- Continue and expand use of low-emitting fuels and vehicles for shuttle system and across UCSF fleet of vehicles.

Annual GHG reduction by 2020: 1 mt CO_2e
(Incorporated into forecast)

Annual GHG reduction by 2035: 1 mt CO_2e
(Incorporated into forecast)

Implementation Timeframe/Status: In progress; to continue through 2035.

Discussion: In addition to vehicle miles traveled, transportation emissions are dependent on the type of fuel used to power vehicles. UCSF is gradually transitioning its vehicle fleet to alternative fuel vehicles and more fuel efficient vehicles. UCSF currently has 43 low-emitting alternative-fuel and hybrid vehicles, including cars, shuttles, golf carts, and trucks. The UCSF shuttle fleet is currently run entirely on diesel; however, the University is monitoring alternative fuel options, including battery electric options, for future vehicle replacements.

UCSF has also instituted programs and developed infrastructure to encourage commuters to use a mix of more fuel-efficient and alternative-fuel vehicles. The University offers an employee benefit program to encourage the purchase of EVs (electric vehicles); in 2012, five EVs were purchased as part of the program.

The 2012 UCSF *Commute Survey*[68] indicated that the commuter vehicle fleet is composed of 12.6 percent fuel-efficient and alternative fuel vehicles, including hybrid, electric, CNG, and biodiesel-fueled vehicles. The University has installed 18 electric-vehicle charging stations at Parnassus Heights, Mount Zion, and Mission Bay, and plans to install another 20 at Mission Bay in the Owens Street Garage plus 10 at other locations in the near future. UCSF also has 35 priority parking spaces reserved for fuel-efficient and low-carbon emitting vehicles.

Due to the concerted state effort to improve vehicle fuel efficiency (Pavley bill) and the lack of a formal "green" or

68 *UCSF Transportation Services Annual Commute Survey*, UCSF Commute Survey Results 2009-2012.

"clean fuel" vehicle replacement program at UCSF, no additional GHG reductions are associated with this measure.

5.3 CLOSING THE GAP WITH TIER 2 MEASURES

As discussed previously and summarized in **Figure 1**, additional reductions beyond Tier 1 measures (summarized in **Table 7**) are needed over the planning horizon of the LRDP to meet the 2020 and 2035 GHG emission targets. **Table 8** lists the Tier 2 measures that UCSF has identified to accomplish the additional reductions needed. The maximum potential reductions for each Tier 2 measure reflect the inventory forecasts for 2020 and 2035, and do not include the reductions expected from Tier 1 measures.

Tier 2 measures are at various stages in the planning process. Some combination of them will be sufficient to meet the 2020 goals identified in **Table 5**. UCSF is committed to meeting the 2020 and 2035 targets described in this document, as well as the goals of the UC President's *2025 Carbon Neutrality Initiative*. However, the exact mix of future actions to be taken by UCSF is dependent on both the results of the next CARB Scoping Plan Update (due in late 2014), and the recommendations identified in the future implementation plan due from UCOP in 2014 reagrding the Presidents *2025 Carbon Neutrality Initiative* and the *Sustainable Practices Policy*.

6.0 IMPLEMENTATION AND MONITORING

Successful implementation of the Tier 1 measures described in the previous section will nearly enable UCSF to achieve the 2020 GHG target based on a 2008 emissions baseline. Deeper reductions provided by the Tier 2 measures enable UCSF to achieve the 1990-based 2020 target and the 2035 targets. Robust monitoring of campus-wide GHG emissions and the effectiveness of individual programs and policies will be needed to ensure that UCSF is on track to meeting its 2020 and 2035 targets, and to enable UCSF to tier CEQA analyisis of future projects from this GHGRS, as described in Section 7.0.

UCSF annually quantifies its GHG emissions and reports them to TCR and CARB. The annual verified emissions report for TCR, augmented by estimates of Scope 3 emissions from commuting and air travel, will serve as the metric for comparison with the 2020 and 2035 targets.

Staff from the UCSF Office of Sustainability will present annual reports to the UCOP Office of Physical and Environmental Planning summarizing progress of the implementation of the UCSF GHGRS. The report will evaluate the successes and challenges in implementing the GHGRS and evaluate progress toward GHG reduction targets. Staff will provide the status of program implementation (e.g., initiated, ongoing, completed), assess the effectiveness of the strategies and programs included in the plan against the established objectives, and recommend adjustments to programs or tactics as needed. The annual report will also assess whether UCSF's actual growth and development is consistent with the forecasts made in the LRDP. If necessary, UCSF shall modify the geographic scope of the inventory and emissions targets accordingly.

Table 8: UCSF Tier 2 GHG Reduction Measures

Tier 2 Measure	Scope	GHG Inventory Category	Maximum potential reductions by 2020	Maximum potential reductions by 2035
Expand or intensify existing and planned programs for reducing direct emissions associated with stationary sources owned and controlled by UCSF.	1	Buildings & Facilities - Natural Gas	85,589	87,668
Purchase more low-carbon biogas as a replacement for natural gas used by the CUP.	1	Buildings & Facilities - Natural Gas	85,589	87,668
Expand or intensify existing and planned programs for reducing direct emissions associated with mobile sources owned and controlled by UCSF.	1	UCSF Fleet	2,432	2,718
Intensify energy conservation efforts to exceed the reductions of electricity-related emissions currently expected from implementation of the SEP.	2	Buildings & Facilities - Electricity	20,302	29,205
Purchase a greater percentage of grid-supplied electricity from renewable, low-carbon sources.	2	Buildings & Facilities - Electricity	20,302	29,205
Invest in renewable energy projects at UCSF or other UC campuses (where available land exists).	2	Buildings & Facilities - Electricity	20,302	29,205
Invest in offsite projects that reduce GHG emissions, preferably within the UC system where the full range of benefits will be retained, to offset emissions in the UCSF emissions inventory.	all	LRDP Construction Emissions	unlimited	unlimited
Purchase accredited carbon offsets that can be used to offset emissions in the UCSF emissions inventory.	all	Buildings & Facilities - Electricity	unlimited	unlimited

An update of the GHGRS should occur at least once every five years to ensure that the strategies remain effective in reducing GHG emissions to the extent needed for achieving the 2020 and 2035 targets. In addition, the following situations, should they occur over the LRDP planning horizon, would likely necessitate a revision to the GHGRS:

- A change in regulations affecting GHG targets or thresholds. The state is likely to legislate a new GHG reduction goal for post-2020; the GHGRS can only estimate what that goal will be based on the *Draft AB 32 Scoping Plan* revision and other documents. The BAAQMD may also develop new guidelines for CEQA as the state regulations are developed.
- A proposed new project that exceeds the total new square footage (summarized in **Table 3**) included in the LRDP through 2020 (the *AB 32* target date).
- A change in the mix of proposed new project types (e.g., another new hospital) that would result in significantly higher energy-use intensities than predicted and summarized in **Table 4.**
- An operational change at UCSF that results in a significant change in projected GHG emissions. UCSF may institute new policies or programs, or abandon current or planned programs, and by doing so, affect GHG emissions. A new long-term contract to purchase a large amount of zero-carbon electricity is one example of such a change.
- The required monitoring of the GHGRS reveals that UCSF's GHG reduction programs are not reducing emissions adequately to meet its targets.

7.0 CEQA PROJECT REVIEW

Under CEQA, the effects of GHG emissions are considered a potentially significant environmental impact. In addressing climate change, CEQA provides a useful mechanism for local agencies to evaluate new development on a comprehensive basis rather than on an individual project basis. The *CEQA Guidelines* recognize this, and include a provision for streamlining the analysis of projects that are consistent with a more comprehensive plan for the reduction of GHG emissions (*CEQA Guidelines, Section 15183.5*). The UCSF GHGRS meets an important requirement of *CEQA Guidelines Section 15183.5(b)(1)* as a plan that analyzes cumulative GHG impacts. The UCSF GHGRS uses established protocols, methodologies, and forecasts of existing and future land uses to quantify existing and projected future GHG emissions within the scope of the LRDP. It also establishes a reduction target based on California state law (*AB 32*), and lays out policies, actions, and performance standards that UCSF will enact and implement over time to reduce emissions. As demonstrated in this document, the UCSF GHGRS does provide the emissions reductions needed to achieve the reduction targets identified in the UC *Sustainable Practices Policy* and in the state-mandated reduction target embodied in *AB 32*.

By implementing the Tier 1 measures along with a mix of the Tier 2 measures identified in Section 5.3, UCSF will close the gap to meet the *AB 32* derived emissions target for 2020, allowing it to utilize the CEQA streamlining provision in *CEQA Guidelines Section 15183.5(b)(1)*. A future development project would be considered consistent with the revised GHGRS if it were consistent with the GHGRS assumptions regarding the amount and type of future development, and was consistent with the GHG reduction measures included in the revised GHGRS. Projects consistent with the revised GHGRS, including conformance with any performance measures applicable to the project, would not require additional GHG emissions analysis under *CEQA Guidelines Sections 15064(h)* and *15183.5(b)(2)*.[69]

7.1 SCREENING PROJECT FOR CONSISTENCY WITH THE GHG REDUCTION STRATEGY

In order to assist with determining project consistency with the UCSF GHGRS, a project consistency checklist is provided in **Table 9**. This checklist is intended to provide the opportunity for individual projects to demonstrate that they are minimizing GHG emissions, while ensuring that new development at UCSF will achieve its 'fair share' of emissions reductions. The UCSF GHGRS stipulates a range of prescribed and planned GHG reductions measures for meeting the 2020 GHG reduction target. The project review checklist would screen projects for important GHG reduction measures that, when implemented, will provide confidence that the project will not impede UCSF's ability to meet its 2020 GHG emissions target. This checklist may evolve over time as the mix of Tier 2 reduction measures is better defined and implemented.

For the project checklist to be valid, UCSF would need to ensure that total development through 2020 does not exceed the following growth assumptions used to develop the emissions forecasts in this GHGRS.

- 2020 total building space = 9,259,500 gross square feet (gsf), with campus specific growth limits provided in **Table 3**
- 2020 population of students + staff + faculty = 36,613
- 2020 population of students + staff + faculty + patients + visitors = 44,628

69 If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding the project's compliance with the qualified GHG reduction strategy, CEQA requires that an EIR be prepared.

Table 9: UCSF Project Consistency Checklist

Project is consistent with the 2014 LRDP growth assumptions in Section 7.1.
Proposed use is consistent with 2014 LRDP functional zones. (See LRDP Table 3.)
New building or major renovation project (except for laboratory and acute care facilities) must incorporate UC and UCSF green building requirements, including the provision that the energy performance exceeds Title 24 requirements by at least 20 percent.
New laboratory and acute care facilities must be designed and built to achieve a LEED-NC Gold rating or higher.
New laboratory buildings must be designed to meet Labs21 Environmental Performance Criteria (EPC).

APPENDIX E

Technical Analyses –
Air Quality, Greenhouse Gas Emissions,
Health Risk Assessment, and Energy

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TECHNICAL ANALYSIS
Air Quality

UCSF Mission Bay Operational 2035

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	793.50	1000sqft	5.00	793,500.00	0
Medical Office Building	124.50	1000sqft	0.46	124,500.00	0
Research & Development	323.00	1000sqft	1.43	323,000.00	0
Research & Development	232.00	1000sqft	1.12	232,000.00	0
Research & Development	377.40	1000sqft	2.75	377,400.00	0
Research & Development	193.00	1000sqft	0.80	193,000.00	0
Day-Care Center	18.00	1000sqft	0.00	18,000.00	0
Enclosed Parking with Elevator	1,600.00	Space	1.60	640,000.00	0
Enclosed Parking with Elevator	626.00	Space	0.00	250,400.00	0
City Park	3.21	Acre	3.21	139,827.60	0
Apartments Mid Rise	523.00	Dwelling Unit	2.89	400,200.00	913
Research & Development	275.00	1000sqft	1.23	275,000.00	0
Enclosed Parking with Elevator	500.00	Space	1.23	200,000.00	0
Research & Development	225.00	1000sqft	1.23	225,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This run operational only. Adjust GHG emission factor to match PG&E estimate fo latest predicted year (2020)

Land Use - Adjust square feet of residential to match PD. Day Care acreage assumed in Block 15 Residential. Smaller parking garage acreage assumed in value for hospital less 0.5 acres for existing garage

Construction Phase - This run is operational only. Ignore construction inputs and emissions as all land uses in the LRDP are phased over a 20-year period.

Vehicle Trips - Adjust trip rates to match trip generation ofthe travel demand analysis.

Woodstoves - Assumes no fireplaces or woodstoves in housing complex.

Energy Use - Energy Use is default

Energy Mitigation -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblFireplaces	NumberGas	287.65	0.00
tblFireplaces	NumberNoFireplace	162.13	523.00
tblFireplaces	NumberWood	73.22	0.00
tblLandUse	LandUseSquareFeet	523,000.00	400,200.00
tblLandUse	LotAcreage	18.22	5.00
tblLandUse	LotAcreage	2.86	0.46
tblLandUse	LotAcreage	4.43	0.80
tblLandUse	LotAcreage	5.33	1.12
tblLandUse	LotAcreage	7.42	1.43
tblLandUse	LotAcreage	8.66	2.75
tblLandUse	LotAcreage	0.41	0.00
tblLandUse	LotAcreage	14.40	1.60

tblLandUse	LotAcreage	5.63	0.00
tblLandUse	LotAcreage	13.76	2.89
tblLandUse	LotAcreage	6.31	1.23
tblLandUse	LotAcreage	4.50	1.23
tblLandUse	LotAcreage	5.17	1.23
tblLandUse	Population	1,496.00	913.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	1.16
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	6.21	1.08
tblVehicleTrips	ST_TR	10.18	2.76
tblVehicleTrips	ST_TR	8.96	1.11
tblVehicleTrips	ST_TR	1.90	1.05
tblVehicleTrips	SU_TR	6.07	0.98
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	5.83	1.01
tblVehicleTrips	SU_TR	8.91	2.41
tblVehicleTrips	SU_TR	1.55	0.19
tblVehicleTrips	SU_TR	1.11	0.61
tblVehicleTrips	WD_TR	6.59	1.07
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	79.26	13.78
tblVehicleTrips	WD_TR	16.50	4.47
tblVehicleTrips	WD_TR	36.13	4.47
tblVehicleTrips	WD_TR	8.11	4.47
tblWoodstoves	NumberCatalytic	2.62	0.00
tblWoodstoves	NumberNoncatalytic	2.62	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	103.4169	0.5009	43.5336	2.3200e-003		0.2412	0.2412		0.2412	0.2412	0.0000	78.8507	78.8507	0.0769	0.0000	80.4665
Energy	3.8246	34.6947	28.6590	0.2086		2.6425	2.6425		2.6425	2.6425		41,723.1479	41,723.1479	0.7997	0.7649	41,977.0680
Mobile	23.1383	39.2023	212.6433	0.8914	64.3659	1.0172	65.3831	17.3823	0.9401	18.3224		61,152.2400	61,152.2400	1.8039		61,190.1208
Total	**130.3798**	**74.3979**	**284.8358**	**1.1024**	**64.3659**	**3.9008**	**68.2667**	**17.3823**	**3.8237**	**21.2060**	**0.0000**	**102,954.2386**	**102,954.2386**	**2.6805**	**0.7649**	**103,247.6554**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	103.4169	0.5009	43.5336	2.3200e-003		0.2412	0.2412		0.2412	0.2412	0.0000	78.8507	78.8507	0.0769	0.0000	80.4665
Energy	3.0515	27.6813	22.8661	0.1664		2.1083	2.1083		2.1083	2.1083		33,288.8711	33,288.8711	0.6380	0.6103	33,491.4616
Mobile	23.1383	39.2023	212.6433	0.8914	64.3659	1.0172	65.3831	17.3823	0.9401	18.3224		61,152.2400	61,152.2400	1.8039		61,190.1208
Total	**129.6066**	**67.3845**	**279.0430**	**1.0602**	**64.3659**	**3.3667**	**67.7325**	**17.3823**	**3.2895**	**20.6719**	**0.0000**	**94,519.9618**	**94,519.9618**	**2.5188**	**0.6103**	**94,762.0489**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.59**	**9.43**	**2.03**	**3.83**	**0.00**	**13.69**	**0.78**	**0.00**	**13.97**	**2.52**	**0.00**	**8.19**	**8.19**	**6.03**	**20.21**	**8.22**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	23.1383	39.2023	212.6433	0.8914	64.3659	1.0172	65.3831	17.3823	0.9401	18.3224		61,152.2400	61,152.2400	1.8039		61,190.1208
Mitigated	23.1383	39.2023	212.6433	0.8914	64.3659	1.0172	65.3831	17.3823	0.9401	18.3224		61,152.2400	61,152.2400	1.8039		61,190.1208

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	558.04	606.68	512.54	1,246,753	1,246,753
City Park	0.00	0.00	0.00		
Day-Care Center	248.04	19.44	18.18	214,971	214,971
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hospital	3,546.95	2,190.06	1912.34	7,856,486	7,856,486
Medical Office Building	556.52	138.20	23.66	823,282	823,282
Research & Development	1,443.81	339.15	197.03	2,776,646	2,776,646
Research & Development	1,037.04	243.60	141.52	1,994,371	1,994,371
Research & Development	1,686.98	396.27	230.21	3,244,292	3,244,292
Research & Development	862.71	202.65	117.73	1,659,111	1,659,111
Research & Development	1,229.25	288.75	167.75	2,364,018	2,364,018
Research & Development	1,005.75	236.25	137.25	1,934,196	1,934,196
Total	12,175.08	4,661.05	3,458.20	24,114,126	24,114,126

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.629311	0.058303	0.147059	0.076368	0.026204	0.003252	0.029759	0.004830	0.003411	0.010105	0.010495	0.000440	0.000462

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
NaturalGas Mitigated	3.0515	27.6813	22.8661	0.1664		2.1083	2.1083		2.1083	2.1083		33,288.8711	33,288.8711	0.6380	0.6103	33,491.4616
NaturalGas Unmitigated	3.8246	34.6947	28.6590	0.2086		2.6425	2.6425		2.6425	2.6425		41,723.1479	41,723.1479	0.7997	0.7649	41,977.0680

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	12686.2	0.1368	1.1691	0.4975	7.4600e-003		0.0945	0.0945		0.0945	0.0945		1,492.4962	1,492.4962	0.0286	0.0274	1,501.5793
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	850.685	9.1700e-003	0.0834	0.0701	5.0000e-004		6.3400e-003	6.3400e-003		6.3400e-003	6.3400e-003		100.0806	100.0806	1.9200e-003	1.8300e-003	100.6897
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Hospital	219832	2.3707	21.5522	18.1038	0.1293		1.6380	1.6380		1.6380	1.6380		25,862.6011	25,862.6011	0.4957	0.4742	26,019.9966
Medical Office Building	6920.84	0.0746	0.6785	0.5700	4.0700e-003		0.0516	0.0516		0.0516	0.0516		814.2160	814.2160	0.0156	0.0149	819.1711
Research & Development	13578.7	0.1464	1.3313	1.1183	7.9900e-003		0.1012	0.1012		0.1012	0.1012		1,597.4988	1,597.4988	0.0306	0.0293	1,607.2209
Research & Development	15830.1	0.1707	1.5520	1.3037	9.3100e-003		0.1180	0.1180		0.1180	0.1180		1,862.3691	1,862.3691	0.0357	0.0341	1,873.7031
Research & Development	16322.6	0.1760	1.6003	1.3442	9.6000e-003		0.1216	0.1216		0.1216	0.1216		1,920.3094	1,920.3094	0.0368	0.0352	1,931.9961
Research & Development	19347.9	0.2087	1.8969	1.5934	0.0114		0.1442	0.1442		0.1442	0.1442		2,276.2289	2,276.2289	0.0436	0.0417	2,290.0816
Research & Development	22725	0.2451	2.2280	1.8715	0.0134		0.1693	0.1693		0.1693	0.1693		2,673.5343	2,673.5343	0.0512	0.0490	2,689.8049
Research & Development	26552.4	0.2864	2.6032	2.1867	0.0156		0.1978	0.1978		0.1978	0.1978		3,123.8137	3,123.8137	0.0599	0.0573	3,142.8247

Total		**3.8246**	**34.6947**	**28.6590**	**0.2086**		**2.6425**	**2.6425**		**2.6425**	**2.6425**		**41,723.1479**	**41,723.1479**	**0.7997**	**0.7649**	**41,977.0680**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	0.657986	7.1000e-003	0.0645	0.0542	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.4102	77.4102	1.4800e-003	1.4200e-003	77.8813
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Hospital	173.461	1.8707	17.0060	14.2851	0.1020		1.2925	1.2925		1.2925	1.2925		20,407.2087	20,407.2087	0.3911	0.3741	20,531.4036
Medical Office Building	5.27675	0.0569	0.5173	0.4346	3.1000e-003		0.0393	0.0393		0.0393	0.0393		620.7945	620.7945	0.0119	0.0114	624.5726
Research & Development	11.0962	0.1197	1.0879	0.9138	6.5300e-003		0.0827	0.0827		0.0827	0.0827		1,305.4327	1,305.4327	0.0250	0.0239	1,313.3774
Research & Development	12.936	0.1395	1.2682	1.0653	7.6100e-003		0.0964	0.0964		0.0964	0.0964		1,521.8775	1,521.8775	0.0292	0.0279	1,531.1394
Research & Development	13.3384	0.1439	1.3077	1.0985	7.8500e-003		0.0994	0.0994		0.0994	0.0994		1,569.2248	1,569.2248	0.0301	0.0288	1,578.7749
Research & Development	15.8106	0.1705	1.5501	1.3021	9.3000e-003		0.1178	0.1178		0.1178	0.1178		1,860.0725	1,860.0725	0.0357	0.0341	1,871.3926
Research & Development	18.5703	0.2003	1.8206	1.5293	0.0109		0.1384	0.1384		0.1384	0.1384		2,184.7397	2,184.7397	0.0419	0.0401	2,198.0357
Research & Development	21.6979	0.2340	2.1273	1.7869	0.0128		0.1617	0.1617		0.1617	0.1617		2,552.6959	2,552.6959	0.0489	0.0468	2,568.2312
Apartments Mid Rise	10.11	0.1090	0.9317	0.3965	5.9500e-003		0.0753	0.0753		0.0753	0.0753		1,189.4145	1,189.4145	0.0228	0.0218	1,196.6531
Total		**3.0515**	**27.6813**	**22.8661**	**0.1665**		**2.1083**	**2.1083**		**2.1083**	**2.1083**		**33,288.8711**	**33,288.8711**	**0.6380**	**0.6103**	**33,491.4616**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	103.4169	0.5009	43.5336	2.3200e-003		0.2412	0.2412		0.2412	0.2412	0.0000	78.8507	78.8507	0.0769	0.0000	80.4665
Mitigated	103.4169	0.5009	43.5336	2.3200e-003		0.2412	0.2412		0.2412	0.2412	0.0000	78.8507	78.8507	0.0769	0.0000	80.4665

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	12.3771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	89.7051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3347	0.5009	43.5336	2.3200e-003		0.2412	0.2412		0.2412	0.2412		78.8507	78.8507	0.0769		80.4665
Total	**103.4169**	**0.5009**	**43.5336**	**2.3200e-003**		**0.2412**	**0.2412**		**0.2412**	**0.2412**	**0.0000**	**78.8507**	**78.8507**	**0.0769**	**0.0000**	**80.4665**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	12.3771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	89.7051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3347	0.5009	43.5336	2.3200e-003		0.2412	0.2412		0.2412	0.2412		78.8507	78.8507	0.0769		80.4665
Total	**103.4169**	**0.5009**	**43.5336**	**2.3200e-003**		**0.2412**	**0.2412**		**0.2412**	**0.2412**	**0.0000**	**78.8507**	**78.8507**	**0.0769**	**0.0000**	**80.4665**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Parnassus Construction Emissions

Construction Emissions - 2020

Construction Emissions in Tons/year (from CalEEMod)
(These are output values from Demo & Rennovation and separate output for new housing)

	ROG	NOx	PM10	PM2.5
Demo & Renno	0.1089	0.917	0.0565	0.0521
New 5th & Parnassus housing	0.3945	0.7103	0.0463	0.0426
Total	0.5034	1.6273	0.1028	0.0947

Construction days = 113

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
8.91	28.80	1.82	1.68

Mitigated 2020

ROG	NOx
0.0473	0.484
0.342	0.3644
0.3893	0.8484

Daily average construction emissions (pounds/day)

ROG	NOx
6.89	15.02

Construction Emissions - Parnassus by 2031

Construction Emissions in Tons/year (from CalEEMod)

ROG	NOx	PM10	PM2.5
1.8587	1.8081	0.0672	0.0639

Construction days = 269

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
13.82	13.44	0.50	0.48

Construction Emissions - Parnassus by 2035

Construction Emissions in Tons/year (from CalEEMod)
(These are output values from Demo & Rennovation and separate output for new housing)

	ROG	NOx	PM10	PM2.5
Demo & Renno	0.0489	0.2355	4.99E-03	4.87E-03
New Proctor housing	0.2502	0.1862	3.85E-03	3.84E-03
Total	0.2991	0.4217	0.00884	0.00871

Construction days = 113

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
5.29	7.46	0.16	0.15

UCSF Parnassus Construction 2020 New Housing Only

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	45.00	Dwelling Unit	0.47	45,000.00	129

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Run Only. Separate run only for construction of 5th and Parnassus Housing.

Land Use - Adjust Acreage to match Google Earth Estimate

Construction Phase -

Architectural Coating -

Construction Off-road Equipment Mitigation - Tier 3 equipment as mitigation.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	PhaseEndDate	6/6/2017	6/8/2017
tblConstructionPhase	PhaseEndDate	1/13/2017	1/15/2017
tblConstructionPhase	PhaseStartDate	1/18/2017	1/20/2017
tblLandUse	LotAcreage	2.81	0.47
tblProjectCharacteristics	OperationalYear	2014	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3945	0.7103	0.5554	8.7000e-004	0.0178	0.0463	0.0641	4.9400e-003	0.0426	0.0476	0.0000	76.8241	76.8241	0.0180	0.0000	77.2017
Total	**0.3945**	**0.7103**	**0.5554**	**8.7000e-004**	**0.0178**	**0.0463**	**0.0641**	**4.9400e-003**	**0.0426**	**0.0476**	**0.0000**	**76.8241**	**76.8241**	**0.0180**	**0.0000**	**77.2017**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3420	0.3644	0.5502	8.7000e-004	0.0178	0.0216	0.0394	4.9400e-003	0.0215	0.0265	0.0000	76.8240	76.8240	0.0180	0.0000	77.2016
Total	**0.3420**	**0.3644**	**0.5502**	**8.7000e-004**	**0.0178**	**0.0216**	**0.0394**	**4.9400e-003**	**0.0215**	**0.0265**	**0.0000**	**76.8240**	**76.8240**	**0.0180**	**0.0000**	**77.2016**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**13.29**	**48.70**	**0.94**	**0.00**	**0.00**	**53.39**	**38.56**	**0.00**	**49.50**	**44.37**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/13/2017	1/15/2017	5	1	
2	Grading	Grading	1/16/2017	1/17/2017	5	2	
3	Building Construction	Building Construction	1/20/2017	6/8/2017	5	100	
4	Paving	Paving	6/9/2017	6/15/2017	5	5	
5	Architectural Coating	Architectural Coating	6/16/2017	6/22/2017	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 91,125; Residential Outdoor: 30,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	32.00	5.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3000e-004	6.3400e-003	3.6200e-003	0.0000		3.9000e-004	3.9000e-004		3.5000e-004	3.5000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364
Total	**6.3000e-004**	**6.3400e-003**	**3.6200e-003**	**0.0000**	**2.7000e-004**	**3.9000e-004**	**6.6000e-004**	**3.0000e-005**	**3.5000e-004**	**3.8000e-004**	**0.0000**	**0.4336**	**0.4336**	**1.3000e-004**	**0.0000**	**0.4364**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0217	0.0217	0.0000	0.0000	0.0218
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0217**	**0.0217**	**0.0000**	**0.0000**	**0.0218**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	2.3300e-003	3.5000e-003	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364
Total	**1.1000e-004**	**2.3300e-003**	**3.5000e-003**	**0.0000**	**2.7000e-004**	**1.3000e-004**	**4.0000e-004**	**3.0000e-005**	**1.3000e-004**	**1.6000e-004**	**0.0000**	**0.4336**	**0.4336**	**1.3000e-004**	**0.0000**	**0.4364**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0217	0.0217	0.0000	0.0000	0.0218
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0217**	**0.0217**	**0.0000**	**0.0000**	**0.0218**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0105	8.5800e-003	1.0000e-005		7.3000e-004	7.3000e-004		6.9000e-004	6.9000e-004	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784
Total	**1.2000e-003**	**0.0105**	**8.5800e-003**	**1.0000e-005**	**7.5000e-004**	**7.3000e-004**	**1.4800e-003**	**4.1000e-004**	**6.9000e-004**	**1.1000e-003**	**0.0000**	**1.0739**	**1.0739**	**2.1000e-004**	**0.0000**	**1.0784**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	4.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0870	0.0870	0.0000	0.0000	0.0870
Total	**3.0000e-005**	**4.0000e-005**	**4.5000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0870**	**0.0870**	**0.0000**	**0.0000**	**0.0870**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	7.3800e-003	7.8500e-003	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784
Total	**7.2000e-004**	**7.3800e-003**	**7.8500e-003**	**1.0000e-005**	**7.5000e-004**	**5.1000e-004**	**1.2600e-003**	**4.1000e-004**	**5.1000e-004**	**9.2000e-004**	**0.0000**	**1.0739**	**1.0739**	**2.1000e-004**	**0.0000**	**1.0784**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	4.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0870	0.0870	0.0000	0.0000	0.0870
Total	**3.0000e-005**	**4.0000e-005**	**4.5000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0870**	**0.0870**	**0.0000**	**0.0000**	**0.0870**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0637	0.6337	0.4020	5.7000e-004		0.0428	0.0428		0.0394	0.0394	0.0000	52.5954	52.5954	0.0161	0.0000	52.9339
Total	**0.0637**	**0.6337**	**0.4020**	**5.7000e-004**		**0.0428**	**0.0428**		**0.0394**	**0.0394**	**0.0000**	**52.5954**	**52.5954**	**0.0161**	**0.0000**	**52.9339**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2700e-003	0.0222	0.0434	6.0000e-005	1.6000e-003	3.1000e-004	1.9100e-003	4.6000e-004	2.8000e-004	7.4000e-004	0.0000	5.1164	5.1164	4.0000e-005	0.0000	5.1172
Worker	5.2100e-003	7.1600e-003	0.0717	1.9000e-004	0.0145	1.3000e-004	0.0146	3.8600e-003	1.2000e-004	3.9800e-003	0.0000	13.9117	13.9117	7.1000e-004	0.0000	13.9266

Total	**8.4800e-003**	**0.0294**	**0.1152**	**2.5000e-004**	**0.0161**	**4.4000e-004**	**0.0166**	**4.3200e-003**	**4.0000e-004**	**4.7200e-003**	**0.0000**	**19.0281**	**19.0281**	**7.5000e-004**	**0.0000**	**19.0438**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0139	0.3050	0.3965	5.7000e-004		0.0192	0.0192		0.0192	0.0192	0.0000	52.5954	52.5954	0.0161	0.0000	52.9338
Total	**0.0139**	**0.3050**	**0.3965**	**5.7000e-004**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**52.5954**	**52.5954**	**0.0161**	**0.0000**	**52.9338**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2700e-003	0.0222	0.0434	6.0000e-005	1.6000e-003	3.1000e-004	1.9100e-003	4.6000e-004	2.8000e-004	7.4000e-004	0.0000	5.1164	5.1164	4.0000e-005	0.0000	5.1172
Worker	5.2100e-003	7.1600e-003	0.0717	1.9000e-004	0.0145	1.3000e-004	0.0146	3.8600e-003	1.2000e-004	3.9800e-003	0.0000	13.9117	13.9117	7.1000e-004	0.0000	13.9266
Total	**8.4800e-003**	**0.0294**	**0.1152**	**2.5000e-004**	**0.0161**	**4.4000e-004**	**0.0166**	**4.3200e-003**	**4.0000e-004**	**4.7200e-003**	**0.0000**	**19.0281**	**19.0281**	**7.5000e-004**	**0.0000**	**19.0438**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6000e-003	0.0246	0.0181	3.0000e-005		1.5000e-003	1.5000e-003		1.3900e-003	1.3900e-003	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6000e-003**	**0.0246**	**0.0181**	**3.0000e-005**		**1.5000e-003**	**1.5000e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**2.4243**	**2.4243**	**6.7000e-004**	**0.0000**	**2.4384**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	2.0200e-003	1.0000e-005	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3913	0.3913	2.0000e-005	0.0000	0.3917
Total	**1.5000e-004**	**2.0000e-004**	**2.0200e-003**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3913**	**0.3913**	**2.0000e-005**	**0.0000**	**0.3917**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	9.9000e-004	0.0145	0.0193	3.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9000e-004**	**0.0145**	**0.0193**	**3.0000e-005**		**8.3000e-004**	**8.3000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**2.4243**	**2.4243**	**6.7000e-004**	**0.0000**	**2.4384**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	2.0200e-003	1.0000e-005	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3913	0.3913	2.0000e-005	0.0000	0.3917
Total	**1.5000e-004**	**2.0000e-004**	**2.0200e-003**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3913**	**0.3913**	**2.0000e-005**	**0.0000**	**0.3917**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3168					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397
Total	**0.3176**	**5.4600e-003**	**4.6700e-003**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.6383**	**0.6383**	**7.0000e-005**	**0.0000**	**0.6397**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	6.7000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1304	0.1304	1.0000e-005	0.0000	0.1306
Total	**5.0000e-005**	**7.0000e-005**	**6.7000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1304**	**0.1304**	**1.0000e-005**	**0.0000**	**0.1306**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3168					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397
Total	**0.3176**	**5.4600e-003**	**4.6700e-003**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.6383**	**0.6383**	**7.0000e-005**	**0.0000**	**0.6397**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	6.7000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1304	0.1304	1.0000e-005	0.0000	0.1306
Total	**5.0000e-005**	**7.0000e-005**	**6.7000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1304**	**0.1304**	**1.0000e-005**	**0.0000**	**0.1306**

Parnassus Construction 2020

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	27.60	1000sqft	0.55	27,600.00	0
Research & Development	18.20	1000sqft	0.18	18,200.00	0
Apartments Mid Rise	73.00	Dwelling Unit	0.00	73,000.00	209

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreage to match googleEarth estimates

Construction Phase -

Off-road Equipment - UC Hall revovation interior. No Heavy-duty diesel equipment assumed.

Demolition -

Vehicle Trips - This run cobstruction only. Ignore operational input and values for this run.

Construction Off-road Equipment Mitigation - Tier 3 equipment as mitigation

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblLandUse	LotAcreage	0.63	0.55
tblLandUse	LotAcreage	0.42	0.18
tblLandUse	LotAcreage	1.92	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1089	0.9170	0.8424	1.2800e-003	0.0618	0.0565	0.1182	0.0138	0.0521	0.0658	0.0000	113.8179	113.8179	0.0192	0.0000	114.2214
Total	**0.1089**	**0.9170**	**0.8424**	**1.2800e-003**	**0.0618**	**0.0565**	**0.1182**	**0.0138**	**0.0521**	**0.0658**	**0.0000**	**113.8179**	**113.8179**	**0.0192**	**0.0000**	**114.2214**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2015	0.0473	0.4840	0.8194	1.2800e-003	0.0618	0.0243	0.0860	0.0138	0.0241	0.0379	0.0000	113.8179	113.8179	0.0192	0.0000	114.2213
Total	**0.0473**	**0.4840**	**0.8194**	**1.2800e-003**	**0.0618**	**0.0243**	**0.0860**	**0.0138**	**0.0241**	**0.0379**	**0.0000**	**113.8179**	**113.8179**	**0.0192**	**0.0000**	**114.2213**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**56.58**	**47.22**	**2.73**	**0.00**	**0.00**	**57.01**	**27.22**	**0.00**	**53.73**	**42.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/14/2015	5	10	
2	Building Construction	Building Construction	1/15/2015	6/3/2015	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29

Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	208.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	67.00	15.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0244	0.0000	0.0244	3.7000e-003	0.0000	3.7000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0600e-003	0.0597	0.0441	6.0000e-005		4.3700e-003	4.3700e-003		4.1800e-003	4.1800e-003	0.0000	5.4460	5.4460	1.1100e-003	0.0000	5.4694
Total	**7.0600e-003**	**0.0597**	**0.0441**	**6.0000e-005**	**0.0244**	**4.3700e-003**	**0.0288**	**3.7000e-003**	**4.1800e-003**	**7.8800e-003**	**0.0000**	**5.4460**	**5.4460**	**1.1100e-003**	**0.0000**	**5.4694**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	3.4700e-003	0.0351	0.0479	7.0000e-005	1.7300e-003	4.8000e-004	2.2100e-003	4.7000e-004	4.5000e-004	9.2000e-004	0.0000	6.7311	6.7311	5.0000e-005	0.0000	6.7323
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	2.7000e-004	2.7400e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4682	0.4682	3.0000e-005	0.0000	0.4687
Total	**3.6700e-003**	**0.0354**	**0.0507**	**8.0000e-005**	**2.1800e-003**	**4.8000e-004**	**2.6700e-003**	**5.9000e-004**	**4.5000e-004**	**1.0400e-003**	**0.0000**	**7.1993**	**7.1993**	**8.0000e-005**	**0.0000**	**7.2010**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0244	0.0000	0.0244	3.7000e-003	0.0000	3.7000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2700e-003	0.0406	0.0395	6.0000e-005		2.9500e-003	2.9500e-003		2.9500e-003	2.9500e-003	0.0000	5.4460	5.4460	1.1100e-003	0.0000	5.4694
Total	**4.2700e-003**	**0.0406**	**0.0395**	**6.0000e-005**	**0.0244**	**2.9500e-003**	**0.0274**	**3.7000e-003**	**2.9500e-003**	**6.6500e-003**	**0.0000**	**5.4460**	**5.4460**	**1.1100e-003**	**0.0000**	**5.4694**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4700e-003	0.0351	0.0479	7.0000e-005	1.7300e-003	4.8000e-004	2.2100e-003	4.7000e-004	4.5000e-004	9.2000e-004	0.0000	6.7311	6.7311	5.0000e-005	0.0000	6.7323
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	2.7000e-004	2.7400e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4682	0.4682	3.0000e-005	0.0000	0.4687

Total	**3.6700e-003**	**0.0354**	**0.0507**	**8.0000e-005**	**2.1800e-003**	**4.8000e-004**	**2.6700e-003**	**5.9000e-004**	**4.5000e-004**	**1.0400e-003**	**0.0000**	**7.1993**	**7.1993**	**8.0000e-005**	**0.0000**	**7.2010**

3.3 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0727	0.7189	0.4149	5.7000e-004		0.0500	0.0500		0.0460	0.0460	0.0000	54.0547	54.0547	0.0161	0.0000	54.3936
Total	**0.0727**	**0.7189**	**0.4149**	**5.7000e-004**		**0.0500**	**0.0500**		**0.0460**	**0.0460**	**0.0000**	**54.0547**	**54.0547**	**0.0161**	**0.0000**	**54.3936**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0122	0.0847	0.1490	1.7000e-004	4.7900e-003	1.3300e-003	6.1200e-003	1.3700e-003	1.2200e-003	2.5900e-003	0.0000	15.7506	15.7506	1.4000e-004	0.0000	15.7536
Worker	0.0133	0.0184	0.1838	4.0000e-004	0.0304	2.9000e-004	0.0307	8.0800e-003	2.7000e-004	8.3500e-003	0.0000	31.3673	31.3673	1.7400e-003	0.0000	31.4039
Total	**0.0255**	**0.1031**	**0.3328**	**5.7000e-004**	**0.0352**	**1.6200e-003**	**0.0368**	**9.4500e-003**	**1.4900e-003**	**0.0109**	**0.0000**	**47.1179**	**47.1179**	**1.8800e-003**	**0.0000**	**47.1575**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0139	0.3050	0.3965	5.7000e-004		0.0192	0.0192		0.0192	0.0192	0.0000	54.0546	54.0546	0.0161	0.0000	54.3935
Total	**0.0139**	**0.3050**	**0.3965**	**5.7000e-004**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**54.0546**	**54.0546**	**0.0161**	**0.0000**	**54.3935**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0122	0.0847	0.1490	1.7000e-004	4.7900e-003	1.3300e-003	6.1200e-003	1.3700e-003	1.2200e-003	2.5900e-003	0.0000	15.7506	15.7506	1.4000e-004	0.0000	15.7536
Worker	0.0133	0.0184	0.1838	4.0000e-004	0.0304	2.9000e-004	0.0307	8.0800e-003	2.7000e-004	8.3500e-003	0.0000	31.3673	31.3673	1.7400e-003	0.0000	31.4039
Total	**0.0255**	**0.1031**	**0.3328**	**5.7000e-004**	**0.0352**	**1.6200e-003**	**0.0368**	**9.4500e-003**	**1.4900e-003**	**0.0109**	**0.0000**	**47.1179**	**47.1179**	**1.8800e-003**	**0.0000**	**47.1575**

UCSF Parnassus Construcrtion 2031

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	308.00	1000sqft	2.75	308,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Run only.

Land Use - Adjust acreage to match Google Earth Estimate

Construction Phase -

Off-road Equipment -

Architectural Coating -

Vehicle Trips -

Construction Off-road Equipment Mitigation -

Demolition -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	7.07	2.75
tblProjectCharacteristics	OperationalYear	2014	2035

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.5731	1.8033	2.8020	5.9300e-003	0.2197	0.0670	0.2867	0.0572	0.0637	0.1208	0.0000	467.2473	467.2473	0.0564	0.0000	468.4322
2026	1.2857	4.7800e-003	9.2800e-003	2.0000e-005	7.3000e-004	2.1000e-004	9.4000e-004	1.9000e-004	2.1000e-004	4.1000e-004	0.0000	1.5894	1.5894	8.0000e-005	0.0000	1.5911
Total	**1.8587**	**1.8081**	**2.8113**	**5.9500e-003**	**0.2205**	**0.0672**	**0.2877**	**0.0574**	**0.0639**	**0.1212**	**0.0000**	**468.8367**	**468.8367**	**0.0565**	**0.0000**	**470.0232**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.5731	1.8033	2.8020	5.9300e-003	0.2197	0.0670	0.2867	0.0572	0.0637	0.1208	0.0000	467.2470	467.2470	0.0564	0.0000	468.4319
2026	1.2857	4.7800e-003	9.2800e-003	2.0000e-005	7.3000e-004	2.1000e-004	9.4000e-004	1.9000e-004	2.1000e-004	4.1000e-004	0.0000	1.5894	1.5894	8.0000e-005	0.0000	1.5911
Total	**1.8587**	**1.8081**	**2.8113**	**5.9500e-003**	**0.2205**	**0.0672**	**0.2877**	**0.0574**	**0.0639**	**0.1212**	**0.0000**	**468.8364**	**468.8364**	**0.0565**	**0.0000**	**470.0229**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demo LPPI & 3 small support buildings	Demolition	1/1/2025	1/28/2025	5	20	
2	Site Preparation	Site Preparation	1/29/2025	1/31/2025	5	3	
3	Grading	Grading	2/1/2025	2/10/2025	5	6	
4	Building Construction	Building Construction	2/11/2025	12/15/2025	5	220	
5	Paving	Paving	12/16/2025	12/29/2025	5	10	
6	Architectural Coating	Architectural Coating	12/30/2025	1/12/2026	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 462,000; Non-Residential Outdoor: 154,000 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Scrapers	1	8.00	361	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demo LPPI & 3 small support buildings	Concrete/Industrial Saws	1	8.00	81	0.73
Demo LPPI & 3 small support buildings	Rubber Tired Dozers	1	8.00	255	0.40
Demo LPPI & 3 small support buildings	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	99.00	50.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demo LPPI & 3 small support buildings	5	13.00	0.00	488.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demo LPPI & 3 small support buildings - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0571	0.0000	0.0571	8.6500e-003	0.0000	8.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0135	0.1234	0.1566	2.5000e-004		5.2600e-003	5.2600e-003		4.9100e-003	4.9100e-003	0.0000	21.4160	21.4160	5.4200e-003	0.0000	21.5299
Total	**0.0135**	**0.1234**	**0.1566**	**2.5000e-004**	**0.0571**	**5.2600e-003**	**0.0624**	**8.6500e-003**	**4.9100e-003**	**0.0136**	**0.0000**	**21.4160**	**21.4160**	**5.4200e-003**	**0.0000**	**21.5299**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9100e-003	0.0287	0.0662	1.7000e-004	4.0800e-003	7.3000e-004	4.8000e-003	1.1200e-003	6.7000e-004	1.7900e-003	0.0000	14.7890	14.7890	1.1000e-004	0.0000	14.7913
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	3.4000e-004	3.4400e-003	2.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9332	0.9332	4.0000e-005	0.0000	0.9340
Total	**4.1700e-003**	**0.0290**	**0.0697**	**1.9000e-004**	**5.2600e-003**	**7.4000e-004**	**5.9900e-003**	**1.4300e-003**	**6.8000e-004**	**2.1100e-003**	**0.0000**	**15.7222**	**15.7222**	**1.5000e-004**	**0.0000**	**15.7253**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0571	0.0000	0.0571	8.6500e-003	0.0000	8.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0135	0.1234	0.1566	2.5000e-004		5.2600e-003	5.2600e-003		4.9100e-003	4.9100e-003	0.0000	21.4159	21.4159	5.4200e-003	0.0000	21.5298
Total	**0.0135**	**0.1234**	**0.1566**	**2.5000e-004**	**0.0571**	**5.2600e-003**	**0.0624**	**8.6500e-003**	**4.9100e-003**	**0.0136**	**0.0000**	**21.4159**	**21.4159**	**5.4200e-003**	**0.0000**	**21.5298**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9100e-003	0.0287	0.0662	1.7000e-004	4.0800e-003	7.3000e-004	4.8000e-003	1.1200e-003	6.7000e-004	1.7900e-003	0.0000	14.7890	14.7890	1.1000e-004	0.0000	14.7913
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	3.4000e-004	3.4400e-003	2.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9332	0.9332	4.0000e-005	0.0000	0.9340
Total	**4.1700e-003**	**0.0290**	**0.0697**	**1.9000e-004**	**5.2600e-003**	**7.4000e-004**	**5.9900e-003**	**1.4300e-003**	**6.8000e-004**	**2.1100e-003**	**0.0000**	**15.7222**	**15.7222**	**1.5000e-004**	**0.0000**	**15.7253**

3.3 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7900e-003	0.0164	0.0173	4.0000e-005		7.3000e-004	7.3000e-004		6.7000e-004	6.7000e-004	0.0000	3.1441	3.1441	1.0200e-003	0.0000	3.1655
Total	**1.7900e-003**	**0.0164**	**0.0173**	**4.0000e-005**	**2.3900e-003**	**7.3000e-004**	**3.1200e-003**	**2.6000e-004**	**6.7000e-004**	**9.3000e-004**	**0.0000**	**3.1441**	**3.1441**	**1.0200e-003**	**0.0000**	**3.1655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	3.2000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0861	0.0861	0.0000	0.0000	0.0862
Total	**2.0000e-005**	**3.0000e-005**	**3.2000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0861**	**0.0861**	**0.0000**	**0.0000**	**0.0862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7900e-003	0.0164	0.0173	4.0000e-005		7.3000e-004	7.3000e-004		6.7000e-004	6.7000e-004	0.0000	3.1441	3.1441	1.0200e-003	0.0000	3.1654
Total	**1.7900e-003**	**0.0164**	**0.0173**	**4.0000e-005**	**2.3900e-003**	**7.3000e-004**	**3.1200e-003**	**2.6000e-004**	**6.7000e-004**	**9.3000e-004**	**0.0000**	**3.1441**	**3.1441**	**1.0200e-003**	**0.0000**	**3.1654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	3.2000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0861	0.0861	0.0000	0.0000	0.0862
Total	**2.0000e-005**	**3.0000e-005**	**3.2000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0861**	**0.0861**	**0.0000**	**0.0000**	**0.0862**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9100e-003	0.0357	0.0406	6.0000e-005		1.6700e-003	1.6700e-003		1.5400e-003	1.5400e-003	0.0000	5.4228	5.4228	1.7500e-003	0.0000	5.4596
Total	**3.9100e-003**	**0.0357**	**0.0406**	**6.0000e-005**	**0.0197**	**1.6700e-003**	**0.0213**	**0.0101**	**1.5400e-003**	**0.0116**	**0.0000**	**5.4228**	**5.4228**	**1.7500e-003**	**0.0000**	**5.4596**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	8.0000e-005	7.9000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2154	0.2154	1.0000e-005	0.0000	0.2156
Total	**6.0000e-005**	**8.0000e-005**	**7.9000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2154**	**0.2154**	**1.0000e-005**	**0.0000**	**0.2156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9100e-003	0.0357	0.0406	6.0000e-005		1.6700e-003	1.6700e-003		1.5400e-003	1.5400e-003	0.0000	5.4228	5.4228	1.7500e-003	0.0000	5.4596
Total	**3.9100e-003**	**0.0357**	**0.0406**	**6.0000e-005**	**0.0197**	**1.6700e-003**	**0.0213**	**0.0101**	**1.5400e-003**	**0.0116**	**0.0000**	**5.4228**	**5.4228**	**1.7500e-003**	**0.0000**	**5.4596**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	8.0000e-005	7.9000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2154	0.2154	1.0000e-005	0.0000	0.2156
Total	**6.0000e-005**	**8.0000e-005**	**7.9000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2154**	**0.2154**	**1.0000e-005**	**0.0000**	**0.2156**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1631	1.3150	1.5367	2.7400e-003		0.0514	0.0514		0.0492	0.0492	0.0000	227.3018	227.3018	0.0415	0.0000	228.1737

Total	**0.1631**	**1.3150**	**1.5367**	**2.7400e-003**		**0.0514**	**0.0514**		**0.0492**	**0.0492**	**0.0000**	**227.3018**	**227.3018**	**0.0415**	**0.0000**	**228.1737**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0393	0.2172	0.6297	1.2600e-003	0.0353	4.5700e-003	0.0399	0.0101	4.2100e-003	0.0143	0.0000	107.1780	107.1780	7.8000e-004	0.0000	107.1943
Worker	0.0217	0.0285	0.2885	1.2900e-003	0.0988	8.7000e-004	0.0997	0.0263	8.1000e-004	0.0271	0.0000	78.1737	78.1737	3.3100e-003	0.0000	78.2432
Total	**0.0610**	**0.2456**	**0.9182**	**2.5500e-003**	**0.1341**	**5.4400e-003**	**0.1395**	**0.0364**	**5.0200e-003**	**0.0414**	**0.0000**	**185.3516**	**185.3516**	**4.0900e-003**	**0.0000**	**185.4375**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1631	1.3150	1.5367	2.7400e-003		0.0514	0.0514		0.0492	0.0492	0.0000	227.3015	227.3015	0.0415	0.0000	228.1734
Total	**0.1631**	**1.3150**	**1.5367**	**2.7400e-003**		**0.0514**	**0.0514**		**0.0492**	**0.0492**	**0.0000**	**227.3015**	**227.3015**	**0.0415**	**0.0000**	**228.1734**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0393	0.2172	0.6297	1.2600e-003	0.0353	4.5700e-003	0.0399	0.0101	4.2100e-003	0.0143	0.0000	107.1780	107.1780	7.8000e-004	0.0000	107.1943
Worker	0.0217	0.0285	0.2885	1.2900e-003	0.0988	8.7000e-004	0.0997	0.0263	8.1000e-004	0.0271	0.0000	78.1737	78.1737	3.3100e-003	0.0000	78.2432
Total	**0.0610**	**0.2456**	**0.9182**	**2.5500e-003**	**0.1341**	**5.4400e-003**	**0.1395**	**0.0364**	**5.0200e-003**	**0.0414**	**0.0000**	**185.3516**	**185.3516**	**4.0900e-003**	**0.0000**	**185.4375**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8800e-003	0.0368	0.0576	9.0000e-005		1.7300e-003	1.7300e-003		1.6000e-003	1.6000e-003	0.0000	7.6500	7.6500	2.4200e-003	0.0000	7.7009
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8800e-003**	**0.0368**	**0.0576**	**9.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**7.6500**	**7.6500**	**2.4200e-003**	**0.0000**	**7.7009**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	1.9900e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.5384	0.5384	2.0000e-005	0.0000	0.5389
Total	**1.5000e-004**	**2.0000e-004**	**1.9900e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.5384**	**0.5384**	**2.0000e-005**	**0.0000**	**0.5389**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8800e-003	0.0368	0.0576	9.0000e-005		1.7300e-003	1.7300e-003		1.6000e-003	1.6000e-003	0.0000	7.6500	7.6500	2.4200e-003	0.0000	7.7009
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8800e-003**	**0.0368**	**0.0576**	**9.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**7.6500**	**7.6500**	**2.4200e-003**	**0.0000**	**7.7009**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	1.9900e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.5384	0.5384	2.0000e-005	0.0000	0.5389
Total	**1.5000e-004**	**2.0000e-004**	**1.9900e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.5384**	**0.5384**	**2.0000e-005**	**0.0000**	**0.5389**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3212					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	1.1500e-003	1.8100e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.2553	0.2553	1.0000e-005	0.0000	0.2556
Total	**0.3214**	**1.1500e-003**	**1.8100e-003**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.2553**	**0.2553**	**1.0000e-005**	**0.0000**	**0.2556**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1436	0.1436	1.0000e-005	0.0000	0.1437
Total	**4.0000e-005**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1436**	**0.1436**	**1.0000e-005**	**0.0000**	**0.1437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3212					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	1.1500e-003	1.8100e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.2553	0.2553	1.0000e-005	0.0000	0.2556
Total	**0.3214**	**1.1500e-003**	**1.8100e-003**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.2553**	**0.2553**	**1.0000e-005**	**0.0000**	**0.2556**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1436	0.1436	1.0000e-005	0.0000	0.1437
Total	**4.0000e-005**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1436**	**0.1436**	**1.0000e-005**	**0.0000**	**0.1437**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2848					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	6.8000e-004	4.5800e-003	7.2400e-003	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0225
Total	**1.2855**	**4.5800e-003**	**7.2400e-003**	**1.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0225**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	2.0400e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.5681	0.5681	2.0000e-005	0.0000	0.5686
Total	**1.5000e-004**	**2.0000e-004**	**2.0400e-003**	**1.0000e-005**	**7.3000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.5681**	**0.5681**	**2.0000e-005**	**0.0000**	**0.5686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2848					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	4.5800e-003	7.2400e-003	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0225
Total	**1.2855**	**4.5800e-003**	**7.2400e-003**	**1.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0225**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	2.0400e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.5681	0.5681	2.0000e-005	0.0000	0.5686
Total	**1.5000e-004**	**2.0000e-004**	**2.0400e-003**	**1.0000e-005**	**7.3000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.5681**	**0.5681**	**2.0000e-005**	**0.0000**	**0.5686**

Parnassus Construction 2035 Demo and Conversions

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	147.00	Dwelling Unit	0.93	114,900.00	420

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This run construction only.

Land Use - Construction only

Construction Phase -

Off-road Equipment - Assume no heavy duty diesel equipment ith housing conversion

Demolition -

Vehicle Trips - Construction only. No operational emissions

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	147,000.00	114,900.00
tblLandUse	LotAcreage	3.87	0.93

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2031	0.0489	0.2355	0.6280	1.6800e-003	0.0874	4.9900e-003	0.0924	0.0198	4.8700e-003	0.0246	0.0000	125.9714	125.9714	4.2600e-003	0.0000	126.0609
Total	**0.0489**	**0.2355**	**0.6280**	**1.6800e-003**	**0.0874**	**4.9900e-003**	**0.0924**	**0.0198**	**4.8700e-003**	**0.0246**	**0.0000**	**125.9714**	**125.9714**	**4.2600e-003**	**0.0000**	**126.0609**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2031	0.0489	0.2355	0.6280	1.6800e-003	0.0874	4.9900e-003	0.0924	0.0198	4.8700e-003	0.0246	0.0000	125.9714	125.9714	4.2600e-003	0.0000	126.0608
Total	**0.0489**	**0.2355**	**0.6280**	**1.6800e-003**	**0.0874**	**4.9900e-003**	**0.0924**	**0.0198**	**4.8700e-003**	**0.0246**	**0.0000**	**125.9714**	**125.9714**	**4.2600e-003**	**0.0000**	**126.0608**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2031	1/14/2031	5	10	
2	Building Construction	Building Construction	1/15/2031	6/3/2031	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	269.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	106.00	16.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0315	0.0000	0.0315	4.7700e-003	0.0000	4.7700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0183	0.0373	7.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.7155	5.7155	2.2000e-004	0.0000	5.7202
Total	**2.8100e-003**	**0.0183**	**0.0373**	**7.0000e-005**	**0.0315**	**4.0000e-004**	**0.0319**	**4.7700e-003**	**4.0000e-004**	**5.1700e-003**	**0.0000**	**5.7155**	**5.7155**	**2.2000e-004**	**0.0000**	**5.7202**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0300e-003	0.0149	0.0330	1.0000e-004	2.2500e-003	4.0000e-004	2.6500e-003	6.2000e-004	3.6000e-004	9.8000e-004	0.0000	8.2477	8.2477	6.0000e-005	0.0000	8.2490
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	1.1000e-004	1.0900e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3423	0.3423	1.0000e-005	0.0000	0.3426
Total	**2.1100e-003**	**0.0150**	**0.0341**	**1.1000e-004**	**2.7000e-003**	**4.0000e-004**	**3.1100e-003**	**7.4000e-004**	**3.6000e-004**	**1.1000e-003**	**0.0000**	**8.5900**	**8.5900**	**7.0000e-005**	**0.0000**	**8.5915**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0315	0.0000	0.0315	4.7700e-003	0.0000	4.7700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0183	0.0373	7.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.7155	5.7155	2.2000e-004	0.0000	5.7202
Total	**2.8100e-003**	**0.0183**	**0.0373**	**7.0000e-005**	**0.0315**	**4.0000e-004**	**0.0319**	**4.7700e-003**	**4.0000e-004**	**5.1700e-003**	**0.0000**	**5.7155**	**5.7155**	**2.2000e-004**	**0.0000**	**5.7202**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0300e-003	0.0149	0.0330	1.0000e-004	2.2500e-003	4.0000e-004	2.6500e-003	6.2000e-004	3.6000e-004	9.8000e-004	0.0000	8.2477	8.2477	6.0000e-005	0.0000	8.2490
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	1.1000e-004	1.0900e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3423	0.3423	1.0000e-005	0.0000	0.3426
Total	**2.1100e-003**	**0.0150**	**0.0341**	**1.1000e-004**	**2.7000e-003**	**4.0000e-004**	**3.1100e-003**	**7.4000e-004**	**3.6000e-004**	**1.1000e-003**	**0.0000**	**8.5900**	**8.5900**	**7.0000e-005**	**0.0000**	**8.5915**

3.3 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0304	0.1610	0.3571	6.9000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	59.6714	59.6714	2.4400e-003	0.0000	59.7226

Total	**0.0304**	**0.1610**	**0.3571**	**6.9000e-004**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**59.6714**	**59.6714**	**2.4400e-003**	**0.0000**	**59.7226**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2800e-003	0.0301	0.0842	1.9000e-004	5.1400e-003	6.6000e-004	5.8100e-003	1.4800e-003	6.1000e-004	2.0900e-003	0.0000	15.7141	15.7141	1.1000e-004	0.0000	15.7165
Worker	8.3900e-003	0.0112	0.1154	6.3000e-004	0.0481	4.4000e-004	0.0485	0.0128	4.1000e-004	0.0132	0.0000	36.2804	36.2804	1.4200e-003	0.0000	36.3102
Total	**0.0137**	**0.0412**	**0.1995**	**8.2000e-004**	**0.0532**	**1.1000e-003**	**0.0543**	**0.0143**	**1.0200e-003**	**0.0153**	**0.0000**	**51.9945**	**51.9945**	**1.5300e-003**	**0.0000**	**52.0267**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0304	0.1610	0.3571	6.9000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	59.6713	59.6713	2.4400e-003	0.0000	59.7225
Total	**0.0304**	**0.1610**	**0.3571**	**6.9000e-004**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**59.6713**	**59.6713**	**2.4400e-003**	**0.0000**	**59.7225**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2800e-003	0.0301	0.0842	1.9000e-004	5.1400e-003	6.6000e-004	5.8100e-003	1.4800e-003	6.1000e-004	2.0900e-003	0.0000	15.7141	15.7141	1.1000e-004	0.0000	15.7165
Worker	8.3900e-003	0.0112	0.1154	6.3000e-004	0.0481	4.4000e-004	0.0485	0.0128	4.1000e-004	0.0132	0.0000	36.2804	36.2804	1.4200e-003	0.0000	36.3102
Total	**0.0137**	**0.0412**	**0.1995**	**8.2000e-004**	**0.0532**	**1.1000e-003**	**0.0543**	**0.0143**	**1.0200e-003**	**0.0153**	**0.0000**	**51.9945**	**51.9945**	**1.5300e-003**	**0.0000**	**52.0267**

UCSF Parnassus Construction 2035 New Housing

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	32.00	Dwelling Unit	0.27	30,400.00	92

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Run Only

Land Use - dust acreage to match GoogleEarth estimate.

Construction Phase -

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/20/2031	6/22/2031
tblConstructionPhase	PhaseEndDate	6/6/2031	6/8/2031
tblConstructionPhase	PhaseEndDate	1/17/2031	1/19/2031
tblConstructionPhase	PhaseEndDate	6/13/2031	6/15/2031
tblLandUse	LandUseSquareFeet	32,000.00	30,400.00
tblLandUse	LotAcreage	0.84	0.27

tblProjectCharacteristics	OperationalYear	2014	2035

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2031	0.2502	0.1862	0.4331	9.3000e-004	0.0131	3.8500e-003	0.0169	3.6600e-003	3.8400e-003	7.5000e-003	0.0000	75.9446	75.9446	3.0200e-003	0.0000	76.0079
Total	**0.2502**	**0.1862**	**0.4331**	**9.3000e-004**	**0.0131**	**3.8500e-003**	**0.0169**	**3.6600e-003**	**3.8400e-003**	**7.5000e-003**	**0.0000**	**75.9446**	**75.9446**	**3.0200e-003**	**0.0000**	**76.0079**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2031	0.2502	0.1862	0.4331	9.3000e-004	0.0131	3.8500e-003	0.0169	3.6600e-003	3.8400e-003	7.5000e-003	0.0000	75.9445	75.9445	3.0200e-003	0.0000	76.0078
Total	**0.2502**	**0.1862**	**0.4331**	**9.3000e-004**	**0.0131**	**3.8500e-003**	**0.0169**	**3.6600e-003**	**3.8400e-003**	**7.5000e-003**	**0.0000**	**75.9445**	**75.9445**	**3.0200e-003**	**0.0000**	**76.0078**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/15/2031	1/15/2031	5	1	
2	Grading	Grading	1/16/2031	1/19/2031	5	2	
3	Building Construction	Building Construction	1/20/2031	6/8/2031	5	100	
4	Paving	Paving	6/9/2031	6/15/2031	5	5	
5	Architectural Coating	Architectural Coating	6/16/2031	6/22/2031	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 61,560; Residential Outdoor: 20,520; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	23.00	3.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-004	1.0300e-003	3.2700e-003	1.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4875	0.4875	2.0000e-005	0.0000	0.4879
Total	**2.4000e-004**	**1.0300e-003**	**3.2700e-003**	**1.0000e-005**	**2.7000e-004**	**3.0000e-005**	**3.0000e-004**	**3.0000e-005**	**3.0000e-005**	**6.0000e-005**	**0.0000**	**0.4875**	**0.4875**	**2.0000e-005**	**0.0000**	**0.4879**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	1.0000e-005	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0171	0.0171	0.0000	0.0000	0.0171
Total	**0.0000**	**1.0000e-005**	**5.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0171**	**0.0171**	**0.0000**	**0.0000**	**0.0171**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-004	1.0300e-003	3.2700e-003	1.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4875	0.4875	2.0000e-005	0.0000	0.4879
Total	**2.4000e-004**	**1.0300e-003**	**3.2700e-003**	**1.0000e-005**	**2.7000e-004**	**3.0000e-005**	**3.0000e-004**	**3.0000e-005**	**3.0000e-005**	**6.0000e-005**	**0.0000**	**0.4875**	**0.4875**	**2.0000e-005**	**0.0000**	**0.4879**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	1.0000e-005	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0171	0.0171	0.0000	0.0000	0.0171
Total	**0.0000**	**1.0000e-005**	**5.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0171**	**0.0171**	**0.0000**	**0.0000**	**0.0171**

3.3 Grading - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6000e-004	3.6500e-003	7.4600e-003	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1431	1.1431	4.0000e-005	0.0000	1.1440
Total	**5.6000e-004**	**3.6500e-003**	**7.4600e-003**	**1.0000e-005**	**7.5000e-004**	**8.0000e-005**	**8.3000e-004**	**4.1000e-004**	**8.0000e-005**	**4.9000e-004**	**0.0000**	**1.1431**	**1.1431**	**4.0000e-005**	**0.0000**	**1.1440**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0685	0.0685	0.0000	0.0000	0.0685
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0685**	**0.0685**	**0.0000**	**0.0000**	**0.0685**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6000e-004	3.6500e-003	7.4600e-003	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1431	1.1431	4.0000e-005	0.0000	1.1440
Total	**5.6000e-004**	**3.6500e-003**	**7.4600e-003**	**1.0000e-005**	**7.5000e-004**	**8.0000e-005**	**8.3000e-004**	**4.1000e-004**	**8.0000e-005**	**4.9000e-004**	**0.0000**	**1.1431**	**1.1431**	**4.0000e-005**	**0.0000**	**1.1440**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0685	0.0685	0.0000	0.0000	0.0685
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0685**	**0.0685**	**0.0000**	**0.0000**	**0.0685**

3.4 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0304	0.1610	0.3571	6.9000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	59.6714	59.6714	2.4400e-003	0.0000	59.7226
Total	**0.0304**	**0.1610**	**0.3571**	**6.9000e-004**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**59.6714**	**59.6714**	**2.4400e-003**	**0.0000**	**59.7226**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9000e-004	5.6400e-003	0.0158	3.0000e-005	9.6000e-004	1.2000e-004	1.0900e-003	2.8000e-004	1.1000e-004	3.9000e-004	0.0000	2.9464	2.9464	2.0000e-005	0.0000	2.9468
Worker	1.8200e-003	2.4200e-003	0.0250	1.4000e-004	0.0104	1.0000e-004	0.0105	2.7700e-003	9.0000e-005	2.8600e-003	0.0000	7.8722	7.8722	3.1000e-004	0.0000	7.8786
Total	**2.8100e-003**	**8.0600e-003**	**0.0408**	**1.7000e-004**	**0.0114**	**2.2000e-004**	**0.0116**	**3.0500e-003**	**2.0000e-004**	**3.2500e-003**	**0.0000**	**10.8186**	**10.8186**	**3.3000e-004**	**0.0000**	**10.8255**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0304	0.1610	0.3571	6.9000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	59.6713	59.6713	2.4400e-003	0.0000	59.7225

Total	**0.0304**	**0.1610**	**0.3571**	**6.9000e-004**		**3.0900e-003**	**3.0900e-003**		**3.0900e-003**	**3.0900e-003**	**0.0000**	**59.6713**	**59.6713**	**2.4400e-003**	**0.0000**	**59.7225**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9000e-004	5.6400e-003	0.0158	3.0000e-005	9.6000e-004	1.2000e-004	1.0900e-003	2.8000e-004	1.1000e-004	3.9000e-004	0.0000	2.9464	2.9464	2.0000e-005	0.0000	2.9468
Worker	1.8200e-003	2.4200e-003	0.0250	1.4000e-004	0.0104	1.0000e-004	0.0105	2.7700e-003	9.0000e-005	2.8600e-003	0.0000	7.8722	7.8722	3.1000e-004	0.0000	7.8786
Total	**2.8100e-003**	**8.0600e-003**	**0.0408**	**1.7000e-004**	**0.0114**	**2.2000e-004**	**0.0116**	**3.0500e-003**	**2.0000e-004**	**3.2500e-003**	**0.0000**	**10.8186**	**10.8186**	**3.3000e-004**	**0.0000**	**10.8255**

3.5 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7800e-003	0.0102	0.0185	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	2.7065	2.7065	1.4000e-004	0.0000	2.7095
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7800e-003**	**0.0102**	**0.0185**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**2.7065**	**2.7065**	**1.4000e-004**	**0.0000**	**2.7095**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	9.0000e-005	9.8000e-004	1.0000e-005	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3080	0.3080	1.0000e-005	0.0000	0.3083
Total	**7.0000e-005**	**9.0000e-005**	**9.8000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3080**	**0.3080**	**1.0000e-005**	**0.0000**	**0.3083**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7800e-003	0.0102	0.0185	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	2.7065	2.7065	1.4000e-004	0.0000	2.7095
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7800e-003**	**0.0102**	**0.0185**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**2.7065**	**2.7065**	**1.4000e-004**	**0.0000**	**2.7095**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	9.0000e-005	9.8000e-004	1.0000e-005	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3080	0.3080	1.0000e-005	0.0000	0.3083
Total	**7.0000e-005**	**9.0000e-005**	**9.8000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3080**	**0.3080**	**1.0000e-005**	**0.0000**	**0.3083**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2140					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	2.1400e-003	4.4900e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6383	0.6383	3.0000e-005	0.0000	0.6389
Total	**0.2143**	**2.1400e-003**	**4.4900e-003**	**1.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.6383**	**0.6383**	**3.0000e-005**	**0.0000**	**0.6389**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	2.7000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0856	0.0856	0.0000	0.0000	0.0856
Total	**2.0000e-005**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0856**	**0.0856**	**0.0000**	**0.0000**	**0.0856**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2140					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	2.1400e-003	4.4900e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6383	0.6383	3.0000e-005	0.0000	0.6389
Total	**0.2143**	**2.1400e-003**	**4.4900e-003**	**1.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.6383**	**0.6383**	**3.0000e-005**	**0.0000**	**0.6389**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	3.0000e-005	2.7000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0856	0.0856	0.0000	0.0000	0.0856
Total	**2.0000e-005**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0856**	**0.0856**	**0.0000**	**0.0000**	**0.0856**

UCSF Parnassus Operational Loses from Project Demolition

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	216.00	1000sqft	4.96	216,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This run calculates the operational losses from demolition of buidings. Does not include vehicle emissions addressed in separate run.

Land Use -

Vehicle Trips - Vehicle trips on seprate run. This run is non-vehicle operational emissions from buildings to be demolished.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.2419	2.2000e-004	0.0231	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0473	0.0473	1.4000e-004		0.0502
Energy	0.1295	1.1772	0.9888	7.0600e-003		0.0895	0.0895		0.0895	0.0895		1,412.6156	1,412.6156	0.0271	0.0259	1,421.2126
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.3714**	**1.1774**	**1.0119**	**7.0600e-003**	**0.0000**	**0.0896**	**0.0896**	**0.0000**	**0.0896**	**0.0896**		**1,412.6629**	**1,412.6629**	**0.0272**	**0.0259**	**1,421.2628**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.2419	2.2000e-004	0.0231	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0473	0.0473	1.4000e-004		0.0502
Energy	0.1295	1.1772	0.9888	7.0600e-003		0.0895	0.0895		0.0895	0.0895		1,412.6156	1,412.6156	0.0271	0.0259	1,421.2126
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.3714**	**1.1774**	**1.0119**	**7.0600e-003**	**0.0000**	**0.0896**	**0.0896**	**0.0000**	**0.0896**	**0.0896**		**1,412.6629**	**1,412.6629**	**0.0272**	**0.0259**	**1,421.2628**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627577	0.058271	0.149142	0.080550	0.026862	0.003412	0.025393	0.003562	0.003105	0.011067	0.009995	0.000558	0.000506

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1295	1.1772	0.9888	7.0600e-003		0.0895	0.0895		0.0895	0.0895		1,412.6156	1,412.6156	0.0271	0.0259	1,421.2126
NaturalGas Unmitigated	0.1295	1.1772	0.9888	7.0600e-003		0.0895	0.0895		0.0895	0.0895		1,412.6156	1,412.6156	0.0271	0.0259	1,421.2126

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	12007.2	0.1295	1.1772	0.9888	7.0600e-003		0.0895	0.0895		0.0895	0.0895		1,412.6156	1,412.6156	0.0271	0.0259	1,421.2126
Total		**0.1295**	**1.1772**	**0.9888**	**7.0600e-003**		**0.0895**	**0.0895**		**0.0895**	**0.0895**		**1,412.6156**	**1,412.6156**	**0.0271**	**0.0259**	**1,421.2126**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	12.0072	0.1295	1.1772	0.9888	7.0600e-003		0.0895	0.0895		0.0895	0.0895		1,412.6156	1,412.6156	0.0271	0.0259	1,421.2126
Total		**0.1295**	**1.1772**	**0.9888**	**7.0600e-003**		**0.0895**	**0.0895**		**0.0895**	**0.0895**		**1,412.6156**	**1,412.6156**	**0.0271**	**0.0259**	**1,421.2126**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.2419	2.2000e-004	0.0231	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0473	0.0473	1.4000e-004		0.0502
Unmitigated	5.2419	2.2000e-004	0.0231	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0473	0.0473	1.4000e-004		0.0502

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Architectural Coating	0.6172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3300e-003	2.2000e-004	0.0231	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0473	0.0473	1.4000e-004		0.0502
Total	**5.2419**	**2.2000e-004**	**0.0231**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0473**	**0.0473**	**1.4000e-004**		**0.0502**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3300e-003	2.2000e-004	0.0231	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0473	0.0473	1.4000e-004		0.0502
Total	**5.2419**	**2.2000e-004**	**0.0231**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0473**	**0.0473**	**1.4000e-004**		**0.0502**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

UCSF Parnassus Operational Program

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	77.00	Dwelling Unit	0.30	77,000.00	99
Hospital	308.00	1000sqft	2.75	308,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	746.08	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parnassus generated electricity from CUP. Factor assumes a hybrid of PG&E 641.345 lb CO2/MWh and CUP .37 MT/MWh=815.7 lb CO2/MWh

Land Use - Adjust population to match UCSF estimates

Vehicle Trips - Adjust trip rates to match travel demand analysis.

Woodstoves - Assume no woodstoves or fireplaces in campus housing.

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblFireplaces	NumberGas	42.35	0.00
tblFireplaces	NumberNoFireplace	23.87	77.00
tblFireplaces	NumberWood	10.78	0.00
tblLandUse	LotAcreage	4.81	0.30
tblLandUse	LotAcreage	7.07	2.75
tblLandUse	Population	220.00	99.00
tblProjectCharacteristics	CO2IntensityFactor	0	746.08
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	0.97
tblVehicleTrips	ST_TR	10.18	0.22
tblVehicleTrips	SU_TR	6.07	0.83
tblVehicleTrips	SU_TR	8.91	0.19
tblVehicleTrips	WD_TR	6.59	0.90
tblVehicleTrips	WD_TR	16.50	0.36
tblWoodstoves	NumberCatalytic	0.39	0.00
tblWoodstoves	NumberNoncatalytic	0.39	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.6082	0.0733	6.3615	3.4000e-004		0.0353	0.0353		0.0353	0.0353	0.0000	11.5059	11.5059	0.0111	0.0000	11.7383
Energy	0.9735	8.8207	7.2207	0.0531		0.6726	0.6726		0.6726	0.6726		10,619.6350	10,619.6350	0.2035	0.1947	10,684.2643
Mobile	0.3480	0.5849	3.1783	0.0133	0.9573	0.0152	0.9724	0.2585	0.0140	0.2725		909.9563	909.9563	0.0269		910.5203

Total	**10.9296**	**9.4789**	**16.7605**	**0.0667**	**0.9573**	**0.7231**	**1.6803**	**0.2585**	**0.7219**	**0.9804**	**0.0000**	**11,541.0972**	**11,541.0972**	**0.2415**	**0.1947**	**11,606.5229**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.6082	0.0733	6.3615	3.4000e-004		0.0353	0.0353		0.0353	0.0353	0.0000	11.5059	11.5059	0.0111	0.0000	11.7383
Energy	0.9735	8.8207	7.2207	0.0531		0.6726	0.6726		0.6726	0.6726		10,619.6350	10,619.6350	0.2035	0.1947	10,684.2643
Mobile	0.3480	0.5849	3.1783	0.0133	0.9573	0.0152	0.9724	0.2585	0.0140	0.2725		909.9563	909.9563	0.0269		910.5203
Total	**10.9296**	**9.4789**	**16.7605**	**0.0667**	**0.9573**	**0.7231**	**1.6803**	**0.2585**	**0.7219**	**0.9804**	**0.0000**	**11,541.0972**	**11,541.0972**	**0.2415**	**0.1947**	**11,606.5229**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3480	0.5849	3.1783	0.0133	0.9573	0.0152	0.9724	0.2585	0.0140	0.2725		909.9563	909.9563	0.0269		910.5203

Unmitigated	0.3480	0.5849	3.1783	0.0133	0.9573	0.0152	0.9724	0.2585	0.0140	0.2725		909.9563	909.9563	0.0269		910.5203

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	69.07	75.00	63.60	154,335	154,335
Hospital	109.96	67.76	59.44	243,563	243,563
Total	179.03	142.76	123.05	397,898	397,898

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.629311	0.058303	0.147059	0.076368	0.026204	0.003252	0.029759	0.004830	0.003411	0.010105	0.010495	0.000440	0.000462

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

NaturalGas Mitigated	0.9735	8.8207	7.2207	0.0531		0.6726	0.6726		0.6726	0.6726		10,619.6350	10,619.6350	0.2035	0.1947	10,684.2643
NaturalGas Unmitigated	0.9735	8.8207	7.2207	0.0531		0.6726	0.6726		0.6726	0.6726		10,619.6350	10,619.6350	0.2035	0.1947	10,684.2643

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4938.24	0.0533	0.4551	0.1937	2.9000e-003		0.0368	0.0368		0.0368	0.0368		580.9694	580.9694	0.0111	0.0107	584.5051
Hospital	85328.7	0.9202	8.3656	7.0271	0.0502		0.6358	0.6358		0.6358	0.6358		10,038.6656	10,038.6656	0.1924	0.1840	10,099.7592
Total		**0.9735**	**8.8206**	**7.2207**	**0.0531**		**0.6726**	**0.6726**		**0.6726**	**0.6726**		**10,619.6350**	**10,619.6350**	**0.2036**	**0.1947**	**10,684.2643**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hospital	85.3287	0.9202	8.3656	7.0271	0.0502		0.6358	0.6358		0.6358	0.6358		10,038.6656	10,038.6656	0.1924	0.1840	10,099.7592
Apartments Low Rise	4.93824	0.0533	0.4551	0.1937	2.9000e-003		0.0368	0.0368		0.0368	0.0368		580.9694	580.9694	0.0111	0.0107	584.5051
Total		**0.9735**	**8.8206**	**7.2207**	**0.0531**		**0.6726**	**0.6726**		**0.6726**	**0.6726**		**10,619.6350**	**10,619.6350**	**0.2036**	**0.1947**	**10,684.2643**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.6082	0.0733	6.3615	3.4000e-004		0.0353	0.0353		0.0353	0.0353	0.0000	11.5059	11.5059	0.0111	0.0000	11.7383
Unmitigated	9.6082	0.0733	6.3615	3.4000e-004		0.0353	0.0353		0.0353	0.0353	0.0000	11.5059	11.5059	0.0111	0.0000	11.7383

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1770					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.2390					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1921	0.0733	6.3615	3.4000e-004		0.0353	0.0353		0.0353	0.0353		11.5059	11.5059	0.0111		11.7383
Total	**9.6082**	**0.0733**	**6.3615**	**3.4000e-004**		**0.0353**	**0.0353**		**0.0353**	**0.0353**	**0.0000**	**11.5059**	**11.5059**	**0.0111**	**0.0000**	**11.7383**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1770					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.2390					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1921	0.0733	6.3615	3.4000e-004		0.0353	0.0353		0.0353	0.0353		11.5059	11.5059	0.0111		11.7383
Total	**9.6082**	**0.0733**	**6.3615**	**3.4000e-004**		**0.0353**	**0.0353**		**0.0353**	**0.0353**	**0.0000**	**11.5059**	**11.5059**	**0.0111**	**0.0000**	**11.7383**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Parnassus Operational Project

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	252.00	Dwelling Unit	6.63	252,000.00	317

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	746.08	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parnassus generated electricity from CUP. Factor assumes a hybrid of PG&E 641.345 lb CO2/MWh and CUP .37 MT/MWh=815.7 lb CO2/MWh

Land Use - Population adjusted to match UCSF Estimates

Vehicle Trips - Adjust trip rates to match travel demand estimates.

Woodstoves - Assume no Woodstoves or fireplaces in housing.

Landscape Equipment - No landscape emissions for existing building connversion

Area Coating - No New coating emission for existing building conversion

Energy Use - No change made

Water Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblFireplaces	NumberGas	138.60	0.00
tblFireplaces	NumberNoFireplace	78.12	252.00
tblFireplaces	NumberWood	35.28	0.00
tblLandUse	Population	721.00	317.00
tblProjectCharacteristics	CO2IntensityFactor	0	746.08
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	0.97
tblVehicleTrips	SU_TR	6.07	0.83
tblVehicleTrips	WD_TR	6.59	0.90
tblWoodstoves	NumberCatalytic	1.26	0.00
tblWoodstoves	NumberNoncatalytic	1.26	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.0122	0.2390	20.7172	1.1000e-003		0.1153	0.1153		0.1153	0.1153	0.0000	37.4352	37.4352	0.0356	0.0000	38.1835
Energy	0.0659	0.5633	0.2397	3.6000e-003		0.0456	0.0456		0.0456	0.0456		719.1377	719.1377	0.0138	0.0132	723.5143
Mobile	0.4505	0.7318	4.0062	0.0164	1.1804	0.0189	1.1993	0.3188	0.0175	0.3362		1,124.8476	1,124.8476	0.0333		1,125.5466
Total	**6.5286**	**1.5341**	**24.9632**	**0.0211**	**1.1804**	**0.1797**	**1.3602**	**0.3188**	**0.1783**	**0.4971**	**0.0000**	**1,881.4205**	**1,881.4205**	**0.0827**	**0.0132**	**1,887.2445**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.0122	0.2390	20.7172	1.1000e-003		0.1153	0.1153		0.1153	0.1153	0.0000	37.4352	37.4352	0.0356	0.0000	38.1835
Energy	0.0659	0.5633	0.2397	3.6000e-003		0.0456	0.0456		0.0456	0.0456		719.1377	719.1377	0.0138	0.0132	723.5143
Mobile	0.4505	0.7318	4.0062	0.0164	1.1804	0.0189	1.1993	0.3188	0.0175	0.3362		1,124.8476	1,124.8476	0.0333		1,125.5466
Total	**6.5286**	**1.5341**	**24.9632**	**0.0211**	**1.1804**	**0.1797**	**1.3602**	**0.3188**	**0.1783**	**0.4971**	**0.0000**	**1,881.4205**	**1,881.4205**	**0.0827**	**0.0132**	**1,887.2445**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4505	0.7318	4.0062	0.0164	1.1804	0.0189	1.1993	0.3188	0.0175	0.3362		1,124.8476	1,124.8476	0.0333		1,125.5466

Unmitigated	0.4505	0.7318	4.0062	0.0164	1.1804	0.0189	1.1993	0.3188	0.0175	0.3362		1,124.8476	1,124.8476	0.0333		1,125.5466

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	226.04	245.45	208.15	505,095	505,095
Total	226.04	245.45	208.15	505,095	505,095

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.629311	0.058303	0.147059	0.076368	0.026204	0.003252	0.029759	0.004830	0.003411	0.010105	0.010495	0.000440	0.000462

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0659	0.5633	0.2397	3.6000e-003		0.0456	0.0456		0.0456	0.0456		719.1377	719.1377	0.0138	0.0132	723.5143

NaturalGas Unmitigated	0.0659	0.5633	0.2397	3.6000e-003		0.0456	0.0456		0.0456	0.0456		719.1377	719.1377	0.0138	0.0132	723.5143

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	6112.67	0.0659	0.5633	0.2397	3.6000e-003		0.0456	0.0456		0.0456	0.0456		719.1377	719.1377	0.0138	0.0132	723.5143
Total		**0.0659**	**0.5633**	**0.2397**	**3.6000e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**		**719.1377**	**719.1377**	**0.0138**	**0.0132**	**723.5143**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	6.11267	0.0659	0.5633	0.2397	3.6000e-003		0.0456	0.0456		0.0456	0.0456		719.1377	719.1377	0.0138	0.0132	723.5143
Total		**0.0659**	**0.5633**	**0.2397**	**3.6000e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**		**719.1377**	**719.1377**	**0.0138**	**0.0132**	**723.5143**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.0122	0.2390	20.7172	1.1000e-003		0.1153	0.1153		0.1153	0.1153	0.0000	37.4352	37.4352	0.0356	0.0000	38.1835
Unmitigated	6.0122	0.2390	20.7172	1.1000e-003		0.1153	0.1153		0.1153	0.1153	0.0000	37.4352	37.4352	0.0356	0.0000	38.1835

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.3928					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6194	0.2390	20.7172	1.1000e-003		0.1153	0.1153		0.1153	0.1153		37.4352	37.4352	0.0356		38.1835
Total	**6.0122**	**0.2390**	**20.7172**	**1.1000e-003**		**0.1153**	**0.1153**		**0.1153**	**0.1153**	**0.0000**	**37.4352**	**37.4352**	**0.0356**	**0.0000**	**38.1835**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.3928					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6194	0.2390	20.7172	1.1000e-003		0.1153	0.1153		0.1153	0.1153		37.4352	37.4352	0.0356		38.1835
Total	**6.0122**	**0.2390**	**20.7172**	**1.1000e-003**		**0.1153**	**0.1153**		**0.1153**	**0.1153**	**0.0000**	**37.4352**	**37.4352**	**0.0356**	**0.0000**	**38.1835**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Parnassus Existing UC Hall and Milbury

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	147.00	1000sqft	3.37	147,000.00	0
Medical Office Building	83.00	1000sqft	1.91	83,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	746.08	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parnassus generated electricity from CUP. Factor assumes a hybrid of PG&E 641.345 lb CO2/MWh and CUP .37 MT/MWh=815.7 lb CO2/MWh

Land Use - This run is to estimate existing emissions for land uses to be rennovated. "Office Building" is Milberry with square footage based on 1,000 sf per unit

Vehicle Trips - No vehicle trips this run. Net new vehicle trips are in Project run.

Woodstoves - Assume no Woodstoves or fireplaces in housing.

Landscape Equipment - No landscape emissions for existing building connversion

Area Coating - No New coating emission for existing building conversion

Energy Use - No change made

Water Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value

tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	CO2IntensityFactor	0	746.08
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0184	2.0000e-005	2.2100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1100e-003	4.1100e-003	1.0000e-005	0.0000	4.3700e-003
Energy	0.0294	0.2676	0.2248	1.6100e-003		0.0203	0.0203		0.0203	0.0203	0.0000	1,092.5928	1,092.5928	5.5800e-003	5.3400e-003	1,094.3657
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	184.2285	0.0000	184.2285	10.8876	0.0000	412.8680
Water						0.0000	0.0000		0.0000	0.0000	26.2350	153.7763	180.0113	2.6946	0.0636	256.3212
Total	**1.0479**	**0.2676**	**0.2270**	**1.6100e-003**	**0.0000**	**0.0204**	**0.0204**	**0.0000**	**0.0204**	**0.0204**	**210.4635**	**1,246.3732**	**1,456.8367**	**13.5878**	**0.0690**	**1,763.5592**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0184	2.0000e-005	2.2100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1100e-003	4.1100e-003	1.0000e-005	0.0000	4.3700e-003
Energy	0.0294	0.2676	0.2248	1.6100e-003		0.0203	0.0203		0.0203	0.0203	0.0000	1,092.5928	1,092.5928	5.5800e-003	5.3400e-003	1,094.3657
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	184.2285	0.0000	184.2285	10.8876	0.0000	412.8680
Water						0.0000	0.0000		0.0000	0.0000	20.9880	123.4910	144.4789	2.1557	0.0509	205.5269
Total	**1.0479**	**0.2676**	**0.2270**	**1.6100e-003**	**0.0000**	**0.0204**	**0.0204**	**0.0000**	**0.0204**	**0.0204**	**205.2165**	**1,216.0879**	**1,421.3044**	**13.0489**	**0.0562**	**1,712.7649**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.49**	**2.43**	**2.44**	**3.97**	**18.45**	**2.88**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627577	0.058271	0.149142	0.080550	0.026862	0.003412	0.025393	0.003562	0.003105	0.011067	0.009995	0.000558	0.000506

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	801.2782	801.2782	0.0000	0.0000	801.2782

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	801.2782	801.2782	0.0000	0.0000	801.2782
NaturalGas Mitigated	0.0294	0.2676	0.2248	1.6100e-003		0.0203	0.0203		0.0203	0.0203	0.0000	291.3146	291.3146	5.5800e-003	5.3400e-003	293.0875
NaturalGas Unmitigated	0.0294	0.2676	0.2248	1.6100e-003		0.0203	0.0203		0.0203	0.0203	0.0000	291.3146	291.3146	5.5800e-003	5.3400e-003	293.0875

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	1.68407e+006	9.0800e-003	0.0826	0.0693	5.0000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.8684	89.8684	1.7200e-003	1.6500e-003	90.4153
Research & Development	3.77496e+006	0.0204	0.1851	0.1554	1.1100e-003		0.0141	0.0141		0.0141	0.0141	0.0000	201.4462	201.4462	3.8600e-003	3.6900e-003	202.6722
Total	**5.46E+06**	**0.0294**	**0.2676**	**0.2248**	**1.6100e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**291.3146**	**291.3146**	**5.5800e-003**	**5.3400e-003**	**293.0875**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Research & Development	3.77496e+006	0.0204	0.1851	0.1554	1.1100e-003		0.0141	0.0141		0.0141	0.0141	0.0000	201.4462	201.4462	3.8600e-003	3.6900e-003	202.6722
Medical Office Building	1.68407e+006	9.0800e-003	0.0826	0.0693	5.0000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.8684	89.8684	1.7200e-003	1.6500e-003	90.4153
Total		**0.0294**	**0.2676**	**0.2248**	**1.6100e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**291.3146**	**291.3146**	**5.5800e-003**	**5.3400e-003**	**293.0875**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	1.15204e+006	389.8690	0.0000	0.0000	389.8690
Research & Development	1.21569e+006	411.4092	0.0000	0.0000	411.4092
Total	**2.37E+06**	**801.2782**	**0.0000**	**0.0000**	**801.2782**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	1.15204e+006	389.8690	0.0000	0.0000	389.8690
Research & Development	1.21569e+006	411.4092	0.0000	0.0000	411.4092
Total		**801.2782**	**0.0000**	**0.0000**	**801.2782**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Mitigated	1.0184	2.0000e-005	2.2100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1100e-003	4.1100e-003	1.0000e-005	0.0000	4.3700e-003
Unmitigated	1.0184	2.0000e-005	2.2100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1100e-003	4.1100e-003	1.0000e-005	0.0000	4.3700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8983					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.2100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1100e-003	4.1100e-003	1.0000e-005	0.0000	4.3700e-003
Total	**1.0184**	**2.0000e-005**	**2.2100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.1100e-003**	**4.1100e-003**	**1.0000e-005**	**0.0000**	**4.3700e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8983					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.2100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1100e-003	4.1100e-003	1.0000e-005	0.0000	4.3700e-003

Total	**1.0184**	**2.0000e-005**	**2.2100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.1100e-003**	**4.1100e-003**	**1.0000e-005**	**0.0000**	**4.3700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	144.4789	2.1557	0.0509	205.5269
Unmitigated	180.0113	2.6946	0.0636	256.3212

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	10.4149 / 1.98379	24.7253	0.3394	8.0100e-003	34.3362
Research & Development	72.279 / 0	155.2860	2.3552	0.0556	221.9850
Total		**180.0113**	**2.6946**	**0.0636**	**256.3212**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	8.33191 / 1.98379	20.2502	0.2715	6.4100e-003	27.9389
Research & Development	57.8232 / 0	124.2288	1.8842	0.0445	177.5880
Total		**144.4789**	**2.1557**	**0.0509**	**205.5269**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	184.2285	10.8876	0.0000	412.8680
Unmitigated	184.2285	10.8876	0.0000	412.8680

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	896.4	181.9611	10.7536	0.0000	407.7866
Research & Development	11.17	2.2674	0.1340	0.0000	5.0814
Total		**184.2285**	**10.8876**	**0.0000**	**412.8680**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	896.4	181.9611	10.7536	0.0000	407.7866
Research & Development	11.17	2.2674	0.1340	0.0000	5.0814
Total		**184.2285**	**10.8876**	**0.0000**	**412.8680**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Parnassus Existing UC Hall and Milbury

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	147.00	1000sqft	3.37	147,000.00	0
Medical Office Building	83.00	1000sqft	1.91	83,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	746.08	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parnassus generated electricity from CUP. Factor assumes a hybrid of PG&E 641.345 lb CO2/MWh and CUP .37 MT/MWh=815.7 lb CO2/MWh

Land Use - This run is to estimate existing emissions for land uses to be rennovated. "Office Building" is Milberry with quare footage bsaed on 1,000 sf per unit

Vehicle Trips - No vehicle trips this run. Net new vehicle trips are in Project run.

Woodstoves - Assume no Woodstoves or fireplaces in housing.

Landscape Equipment - No landscape emissions for existing building connversion

Area Coating - No New coating emission for existing building conversion

Energy Use - No change made

Water Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value

tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	CO2IntensityFactor	0	746.08
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5816	2.4000e-004	0.0246	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0503	0.0503	1.5000e-004		0.0535
Energy	0.1613	1.4663	1.2317	8.8000e-003		0.1114	0.1114		0.1114	0.1114		1,759.5584	1,759.5584	0.0337	0.0323	1,770.2668
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.7429**	**1.4665**	**1.2562**	**8.8000e-003**	**0.0000**	**0.1115**	**0.1115**	**0.0000**	**0.1115**	**0.1115**		**1,759.6088**	**1,759.6088**	**0.0339**	**0.0323**	**1,770.3203**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5816	2.4000e-004	0.0246	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0503	0.0503	1.5000e-004		0.0535
Energy	0.1613	1.4663	1.2317	8.8000e-003		0.1114	0.1114		0.1114	0.1114		1,759.5584	1,759.5584	0.0337	0.0323	1,770.2668
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.7429**	**1.4665**	**1.2562**	**8.8000e-003**	**0.0000**	**0.1115**	**0.1115**	**0.0000**	**0.1115**	**0.1115**		**1,759.6088**	**1,759.6088**	**0.0339**	**0.0323**	**1,770.3203**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Medical Office Building	0.00	0.00	0.00		
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627577	0.058271	0.149142	0.080550	0.026862	0.003412	0.025393	0.003562	0.003105	0.011067	0.009995	0.000558	0.000506

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1613	1.4663	1.2317	8.8000e-003		0.1114	0.1114		0.1114	0.1114		1,759.5584	1,759.5584	0.0337	0.0323	1,770.2668
NaturalGas Unmitigated	0.1613	1.4663	1.2317	8.8000e-003		0.1114	0.1114		0.1114	0.1114		1,759.5584	1,759.5584	0.0337	0.0323	1,770.2668

5.2 Energy by Land Use - NaturalGas
Unmitigated

Land Use	NaturalGa kBTU/yr	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
		lb/day										lb/day					
Medical Office Building	4613.89	0.0498	0.4523	0.3800	2.7100e-003		0.0344	0.0344		0.0344	0.0344		542.8106	542.8106	0.0104	9.9500e-003	546.1141
Research & Development	10342.4	0.1115	1.0140	0.8517	6.0800e-003		0.0771	0.0771		0.0771	0.0771		1,216.7478	1,216.7478	0.0233	0.0223	1,224.1527
Total		**0.1613**	**1.4663**	**1.2317**	**8.7900e-003**		**0.1114**	**0.1114**		**0.1114**	**0.1114**		**1,759.5584**	**1,759.5584**	**0.0337**	**0.0323**	**1,770.2668**

Land Use	NaturalGas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
		lb/day										lb/day					
Research & Development	10.3424	0.1115	1.0140	0.8517	6.0800e-003		0.0771	0.0771		0.0771	0.0771		1,216.7478	1,216.7478	0.0233	0.0223	1,224.1527
Medical Office Building	4.61389	0.0498	0.4523	0.3800	2.7100e-003		0.0344	0.0344		0.0344	0.0344		542.8106	542.8106	0.0104	9.9500e-003	546.1141
Total		**0.1613**	**1.4663**	**1.2317**	**8.7900e-003**		**0.1114**	**0.1114**		**0.1114**	**0.1114**		**1,759.5584**	**1,759.5584**	**0.0337**	**0.0323**	**1,770.2668**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	5.5816	2.4000e-004	0.0246	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0503	0.0503	1.5000e-004		0.0535

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.9220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Mitigated Operational Air Quality Emissions with TDM

Parnassus Heights (From CalEEMod)

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
New Development				
Mobile Sources[a]	0.8	1.31	2.17	0.6
Area Sources[a]	15.61	0.31	0.16	0.16
Natural gas combustion	1.04	9.38	0.72	0.72
Demolition Losses				
Area Sources[a]	-5.24	<0.01	<0.01	<0.01
Natural gas combustion	-0.13	-1.18	-0.09	-0.09
Renovation Losses				
Area Sources[a]	-5.58	<0.01	<0.01	<0.01
Natural gas combustion	-0.16	-1.47	-0.11	-0.11
Total	**6.34**	**8.36**	**2.85**	**1.28**

Mobile emission reduction from TDM: 12 percent

		ROG	Nox	PM10	PM2.5
Mitigated	Mobile	0.70	1.15	1.91	0.53
Mitigated	Total	6.24	8.20	2.59	1.21

Construction Emissions - Mission Bay 2020

Mitigated 2020

Construction Emissions in Tons/year (from CalEEMod)

ROG	NOx	PM10	PM2.5	ROG	NOx
10.6732	25.2985	1.212	1.1328	9.4079	17.2705

Construction days = 1300

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5	ROG	NOx
16.42	38.92	1.86	1.74	14.47369	26.57

Construction Emissions - Mission Bay Program by 2025

Construction Emissions in Tons/year (from CalEEMod)

ROG	NOx	PM10	PM2.5
5.6215	12.8063	0.5612	0.5256

Construction days/year = 1300

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
8.65	19.70	0.86	0.81

Construction Emissions - Mission Bay Program by 2031

Construction Emissions in Tons/year (from CalEEMod)

ROG	NOx	PM10	PM2.5
5.0399	9.5376	0.3571	0.3343

Construction days/year = 1300

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
7.75	14.67	0.55	0.51

Construction Emissions - Mission Bay Program by 2035

Construction Emissions in Tons/year (from CalEEMod)

ROG	NOx	PM10	PM2.5
10.2188	10.2462	0.2372	0.227

Construction days/year = 1300

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
15.72	15.76	0.36	0.35

Mission Bay Construction 2020

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	124.50	1000sqft	0.46	124,500.00	0
Research & Development	275.00	1000sqft	1.23	275,000.00	0
Enclosed Parking with Elevator	500.00	Space	1.23	167,000.00	0
Apartments Mid Rise	523.00	Dwelling Unit	2.89	418,200.00	1496

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This run construction only

Land Use - Adjust acreage to match Google Earth estimates. Block 33& 34 3.69 acres. one third each: paking garage, phase 1 (2020) and phas 2 (2025)

Construction Phase - No structural demolition at Mission Bay. Adjust default number of construction phase days to match 5-year window of development.

Grading - Site preparation is export of surcharge materials

Architectural Coating -

Construction Off-road Equipment Mitigation - Tier 3 equipment as mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	283,250.00	298,250.00

tblArchitecturalCoating	ConstArea_Nonresidential_Interior	849,750.00	894,750.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	282,285.00	353,025.00
tblArchitecturalCoating	ConstArea_Residential_Interior	846,855.00	1,059,075.00
tblAreaCoating	Area_Nonresidential_Interior	849750	894750
tblAreaCoating	Area_Residential_Exterior	282285	353025
tblAreaCoating	Area_Residential_Interior	846855	1059075
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	87.00
tblConstructionPhase	NumDays	300.00	997.00
tblConstructionPhase	NumDays	30.00	87.00
tblConstructionPhase	NumDays	20.00	87.00

tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	PhaseEndDate	4/26/2019	4/28/2019
tblGrading	AcresOfGrading	43.50	10.00
tblGrading	AcresOfGrading	0.00	2.89
tblGrading	MaterialExported	0.00	9,000.00
tblLandUse	LandUseSquareFeet	200,000.00	167,000.00
tblLandUse	LandUseSquareFeet	523,000.00	418,200.00
tblLandUse	LotAcreage	2.86	0.46
tblLandUse	LotAcreage	6.31	1.23
tblLandUse	LotAcreage	4.50	1.23
tblLandUse	LotAcreage	13.76	2.89
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblSolidWaste	SolidWasteGenerationRate	20.90	20.67
tblTripsAndVMT	VendorTripNumber	149.00	154.00
tblTripsAndVMT	WorkerTripNumber	575.00	587.00
tblTripsAndVMT	WorkerTripNumber	115.00	117.00
tblWater	IndoorWaterUseRate	135,215,835.48	133,740,753.64

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.8584	6.4934	7.7339	0.0113	1.0905	0.3302	1.4208	0.4747	0.3066	0.7814	0.0000	981.4752	981.4752	0.1236	0.0000	984.0712

2016	1.0090	6.0822	9.9106	0.0172	0.8233	0.2917	1.1150	0.2216	0.2734	0.4950	0.0000	1,426.1361	1,426.1361	0.1184	0.0000	1,428.6221
2017	0.9138	5.5542	9.2556	0.0171	0.8202	0.2624	1.0826	0.2208	0.2458	0.4667	0.0000	1,384.5453	1,384.5453	0.1136	0.0000	1,386.9299
2018	0.7812	4.9663	8.4679	0.0172	0.8233	0.2238	1.0471	0.2216	0.2098	0.4314	0.0000	1,352.9003	1,352.9003	0.1103	0.0000	1,355.2165
2019	7.1108	2.2025	3.5181	7.3100e-003	0.3171	0.1040	0.4210	0.0852	0.0972	0.1824	0.0000	569.7239	569.7239	0.0652	0.0000	571.0926
Total	**10.6732**	**25.2985**	**38.8861**	**0.0701**	**3.8744**	**1.2120**	**5.0865**	**1.2240**	**1.1328**	**2.3568**	**0.0000**	**5,714.7808**	**5,714.7808**	**0.5310**	**0.0000**	**5,725.9323**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4690	3.5480	7.0206	0.0113	1.0905	0.1414	1.2319	0.4747	0.1394	0.6142	0.0000	981.4748	981.4748	0.1236	0.0000	984.0707
2016	0.7117	4.2264	9.8822	0.0172	0.8233	0.1578	0.9811	0.2216	0.1550	0.3766	0.0000	1,426.1357	1,426.1357	0.1184	0.0000	1,428.6217
2017	0.6491	3.9707	9.2689	0.0171	0.8202	0.1514	0.9716	0.2208	0.1489	0.3697	0.0000	1,384.5449	1,384.5449	0.1136	0.0000	1,386.9295
2018	0.5644	3.7793	8.5521	0.0172	0.8233	0.1479	0.9712	0.2216	0.1456	0.3672	0.0000	1,352.9000	1,352.9000	0.1103	0.0000	1,355.2162
2019	7.0138	1.7461	3.6718	7.3100e-003	0.3171	0.0786	0.3956	0.0852	0.0778	0.1630	0.0000	569.7237	569.7237	0.0652	0.0000	571.0924
Total	**9.4079**	**17.2705**	**38.3955**	**0.0701**	**3.8744**	**0.6770**	**4.5514**	**1.2240**	**0.6668**	**1.8908**	**0.0000**	**5,714.7790**	**5,714.7790**	**0.5310**	**0.0000**	**5,725.9305**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**11.86**	**31.73**	**1.26**	**0.00**	**0.00**	**44.15**	**10.52**	**0.00**	**41.14**	**19.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	3/2/2015	5	43	
2	Grading	Grading	3/3/2015	7/1/2015	5	87	
3	Building Construction	Building Construction	7/2/2015	4/28/2019	5	997	
4	Paving	Paving	4/29/2019	8/27/2019	5	87	
5	Architectural Coating	Architectural Coating	8/28/2019	12/26/2019	5	87	

Acres of Grading (Site Preparation Phase): 2.89

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 1,059,075; Residential Outdoor: 353,025; Non-Residential Indoor: 894,750; Non-Residential Outdoor: 298,250

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	1,125.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	587.00	154.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	117.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3913	0.0000	0.3913	0.2139	0.0000	0.2139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1131	1.2231	0.9166	8.4000e-004		0.0664	0.0664		0.0611	0.0611	0.0000	80.1974	80.1974	0.0239	0.0000	80.7002
Total	**0.1131**	**1.2231**	**0.9166**	**8.4000e-004**	**0.3913**	**0.0664**	**0.4577**	**0.2139**	**0.0611**	**0.2750**	**0.0000**	**80.1974**	**80.1974**	**0.0239**	**0.0000**	**80.7002**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0188	0.1897	0.2592	4.0000e-004	9.3400e-003	2.6200e-003	0.0120	2.5600e-003	2.4100e-003	4.9700e-003	0.0000	36.4063	36.4063	3.0000e-004	0.0000	36.4126
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5400e-003	2.1200e-003	0.0212	5.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	3.6236	3.6236	2.0000e-004	0.0000	3.6279
Total	**0.0203**	**0.1918**	**0.2804**	**4.5000e-004**	**0.0129**	**2.6500e-003**	**0.0155**	**3.4900e-003**	**2.4400e-003**	**5.9300e-003**	**0.0000**	**40.0299**	**40.0299**	**5.0000e-004**	**0.0000**	**40.0404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3913	0.0000	0.3913	0.2139	0.0000	0.2139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0205	0.4184	0.5031	8.4000e-004		0.0207	0.0207		0.0207	0.0207	0.0000	80.1973	80.1973	0.0239	0.0000	80.7001
Total	**0.0205**	**0.4184**	**0.5031**	**8.4000e-004**	**0.3913**	**0.0207**	**0.4119**	**0.2139**	**0.0207**	**0.2345**	**0.0000**	**80.1973**	**80.1973**	**0.0239**	**0.0000**	**80.7001**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0188	0.1897	0.2592	4.0000e-004	9.3400e-003	2.6200e-003	0.0120	2.5600e-003	2.4100e-003	4.9700e-003	0.0000	36.4063	36.4063	3.0000e-004	0.0000	36.4126
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5400e-003	2.1200e-003	0.0212	5.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	3.6236	3.6236	2.0000e-004	0.0000	3.6279

Total	**0.0203**	**0.1918**	**0.2804**	**4.5000e-004**	**0.0129**	**2.6500e-003**	**0.0155**	**3.4900e-003**	**2.4400e-003**	**5.9300e-003**	**0.0000**	**40.0299**	**40.0299**	**5.0000e-004**	**0.0000**	**40.0404**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2673	0.0000	0.2673	0.1446	0.0000	0.1446	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1667	1.7581	1.1603	1.3000e-003		0.1013	0.1013		0.0932	0.0932	0.0000	123.4789	123.4789	0.0369	0.0000	124.2530
Total	**0.1667**	**1.7581**	**1.1603**	**1.3000e-003**	**0.2673**	**0.1013**	**0.3685**	**0.1446**	**0.0932**	**0.2378**	**0.0000**	**123.4789**	**123.4789**	**0.0369**	**0.0000**	**124.2530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5900e-003	3.5700e-003	0.0358	8.0000e-005	5.9200e-003	6.0000e-005	5.9800e-003	1.5700e-003	5.0000e-005	1.6300e-003	0.0000	6.1096	6.1096	3.4000e-004	0.0000	6.1167
Total	**2.5900e-003**	**3.5700e-003**	**0.0358**	**8.0000e-005**	**5.9200e-003**	**6.0000e-005**	**5.9800e-003**	**1.5700e-003**	**5.0000e-005**	**1.6300e-003**	**0.0000**	**6.1096**	**6.1096**	**3.4000e-004**	**0.0000**	**6.1167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2673	0.0000	0.2673	0.1446	0.0000	0.1446	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0315	0.6444	0.8864	1.3000e-003		0.0342	0.0342		0.0342	0.0342	0.0000	123.4788	123.4788	0.0369	0.0000	124.2529
Total	**0.0315**	**0.6444**	**0.8864**	**1.3000e-003**	**0.2673**	**0.0342**	**0.3014**	**0.1446**	**0.0342**	**0.1787**	**0.0000**	**123.4788**	**123.4788**	**0.0369**	**0.0000**	**124.2529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5900e-003	3.5700e-003	0.0358	8.0000e-005	5.9200e-003	6.0000e-005	5.9800e-003	1.5700e-003	5.0000e-005	1.6300e-003	0.0000	6.1096	6.1096	3.4000e-004	0.0000	6.1167
Total	**2.5900e-003**	**3.5700e-003**	**0.0358**	**8.0000e-005**	**5.9200e-003**	**6.0000e-005**	**5.9800e-003**	**1.5700e-003**	**5.0000e-005**	**1.6300e-003**	**0.0000**	**6.1096**	**6.1096**	**3.4000e-004**	**0.0000**	**6.1167**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.2397	1.9670	1.2278	1.7600e-003		0.1387	0.1387		0.1304	0.1304	0.0000	159.8163	159.8163	0.0401	0.0000	160.6584
Total	**0.2397**	**1.9670**	**1.2278**	**1.7600e-003**		**0.1387**	**0.1387**		**0.1304**	**0.1304**	**0.0000**	**159.8163**	**159.8163**	**0.0401**	**0.0000**	**160.6584**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1634	1.1392	2.0042	2.3200e-003	0.0644	0.0179	0.0823	0.0185	0.0164	0.0349	0.0000	211.8356	211.8356	1.8800e-003	0.0000	211.8750
Worker	0.1527	0.2106	2.1089	4.5600e-003	0.3488	3.3500e-003	0.3521	0.0928	3.0800e-003	0.0959	0.0000	360.0075	360.0075	0.0200	0.0000	360.4275
Total	**0.3160**	**1.3498**	**4.1131**	**6.8800e-003**	**0.4132**	**0.0212**	**0.4344**	**0.1112**	**0.0195**	**0.1307**	**0.0000**	**571.8431**	**571.8431**	**0.0219**	**0.0000**	**572.3025**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0780	0.9400	1.2019	1.7600e-003		0.0626	0.0626		0.0626	0.0626	0.0000	159.8161	159.8161	0.0401	0.0000	160.6582
Total	**0.0780**	**0.9400**	**1.2019**	**1.7600e-003**		**0.0626**	**0.0626**		**0.0626**	**0.0626**	**0.0000**	**159.8161**	**159.8161**	**0.0401**	**0.0000**	**160.6582**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1634	1.1392	2.0042	2.3200e-003	0.0644	0.0179	0.0823	0.0185	0.0164	0.0349	0.0000	211.8356	211.8356	1.8800e-003	0.0000	211.8750
Worker	0.1527	0.2106	2.1089	4.5600e-003	0.3488	3.3500e-003	0.3521	0.0928	3.0800e-003	0.0959	0.0000	360.0075	360.0075	0.0200	0.0000	360.4275
Total	**0.3160**	**1.3498**	**4.1131**	**6.8800e-003**	**0.4132**	**0.0212**	**0.4344**	**0.1112**	**0.0195**	**0.1307**	**0.0000**	**571.8431**	**571.8431**	**0.0219**	**0.0000**	**572.3025**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0104	316.0104	0.0784	0.0000	317.6563
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0104**	**316.0104**	**0.0784**	**0.0000**	**317.6563**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2885	1.9833	3.6965	4.6200e-003	0.1284	0.0286	0.1570	0.0368	0.0263	0.0631	0.0000	417.5784	417.5784	3.3100e-003	0.0000	417.6479
Worker	0.2760	0.3788	3.7990	9.0800e-003	0.6949	6.3600e-003	0.7012	0.1848	5.8600e-003	0.1907	0.0000	692.5472	692.5472	0.0367	0.0000	693.3178
Total	**0.5645**	**2.3621**	**7.4955**	**0.0137**	**0.8233**	**0.0350**	**0.8583**	**0.2216**	**0.0321**	**0.2538**	**0.0000**	**1,110.1256**	**1,110.1256**	**0.0400**	**0.0000**	**1,110.9658**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1472	1.8643	2.3866	3.5000e-003		0.1229	0.1229		0.1229	0.1229	0.0000	316.0101	316.0101	0.0784	0.0000	317.6560
Total	**0.1472**	**1.8643**	**2.3866**	**3.5000e-003**		**0.1229**	**0.1229**		**0.1229**	**0.1229**	**0.0000**	**316.0101**	**316.0101**	**0.0784**	**0.0000**	**317.6560**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2885	1.9833	3.6965	4.6200e-003	0.1284	0.0286	0.1570	0.0368	0.0263	0.0631	0.0000	417.5784	417.5784	3.3100e-003	0.0000	417.6479
Worker	0.2760	0.3788	3.7990	9.0800e-003	0.6949	6.3600e-003	0.7012	0.1848	5.8600e-003	0.1907	0.0000	692.5472	692.5472	0.0367	0.0000	693.3178

Total	**0.5645**	**2.3621**	**7.4955**	**0.0137**	**0.8233**	**0.0350**	**0.8583**	**0.2216**	**0.0321**	**0.2538**	**0.0000**	**1,110.1256**	**1,110.1256**	**0.0400**	**0.0000**	**1,110.9658**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2617	1.7801	3.4771	4.6000e-003	0.1280	0.0247	0.1527	0.0367	0.0227	0.0594	0.0000	409.7192	409.7192	3.1400e-003	0.0000	409.7850
Worker	0.2487	0.3414	3.4216	9.0400e-003	0.6922	6.1400e-003	0.6983	0.1841	5.6700e-003	0.1898	0.0000	663.5033	663.5033	0.0338	0.0000	664.2129
Total	**0.5105**	**2.1215**	**6.8988**	**0.0136**	**0.8202**	**0.0308**	**0.8510**	**0.2208**	**0.0284**	**0.2492**	**0.0000**	**1,073.2225**	**1,073.2225**	**0.0369**	**0.0000**	**1,073.9980**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1386	1.8492	2.3701	3.4900e-003		0.1205	0.1205		0.1205	0.1205	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.1386**	**1.8492**	**2.3701**	**3.4900e-003**		**0.1205**	**0.1205**		**0.1205**	**0.1205**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2617	1.7801	3.4771	4.6000e-003	0.1280	0.0247	0.1527	0.0367	0.0227	0.0594	0.0000	409.7192	409.7192	3.1400e-003	0.0000	409.7850
Worker	0.2487	0.3414	3.4216	9.0400e-003	0.6922	6.1400e-003	0.6983	0.1841	5.6700e-003	0.1898	0.0000	663.5033	663.5033	0.0338	0.0000	664.2129
Total	**0.5105**	**2.1215**	**6.8988**	**0.0136**	**0.8202**	**0.0308**	**0.8510**	**0.2208**	**0.0284**	**0.2492**	**0.0000**	**1,073.2225**	**1,073.2225**	**0.0369**	**0.0000**	**1,073.9980**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2054	1.6183	3.0516	4.5900e-003	0.1284	0.0227	0.1511	0.0368	0.0209	0.0577	0.0000	402.5170	402.5170	3.0800e-003	0.0000	402.5816
Worker	0.2276	0.3124	3.1283	9.0800e-003	0.6949	6.0500e-003	0.7009	0.1848	5.5900e-003	0.1904	0.0000	641.3989	641.3989	0.0316	0.0000	642.0626
Total	**0.4330**	**1.9307**	**6.1799**	**0.0137**	**0.8233**	**0.0288**	**0.8521**	**0.2216**	**0.0265**	**0.2481**	**0.0000**	**1,043.9159**	**1,043.9159**	**0.0347**	**0.0000**	**1,044.6442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1314	1.8486	2.3722	3.5000e-003		0.1191	0.1191		0.1191	0.1191	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.1314**	**1.8486**	**2.3722**	**3.5000e-003**		**0.1191**	**0.1191**		**0.1191**	**0.1191**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2054	1.6183	3.0516	4.5900e-003	0.1284	0.0227	0.1511	0.0368	0.0209	0.0577	0.0000	402.5170	402.5170	3.0800e-003	0.0000	402.5816
Worker	0.2276	0.3124	3.1283	9.0800e-003	0.6949	6.0500e-003	0.7009	0.1848	5.5900e-003	0.1904	0.0000	641.3989	641.3989	0.0316	0.0000	642.0626
Total	**0.4330**	**1.9307**	**6.1799**	**0.0137**	**0.8233**	**0.0288**	**0.8521**	**0.2216**	**0.0265**	**0.2481**	**0.0000**	**1,043.9159**	**1,043.9159**	**0.0347**	**0.0000**	**1,044.6442**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0988	0.8805	0.7191	1.1300e-003		0.0540	0.0540		0.0508	0.0508	0.0000	98.3316	98.3316	0.0239	0.0000	98.8340
Total	**0.0988**	**0.8805**	**0.7191**	**1.1300e-003**		**0.0540**	**0.0540**		**0.0508**	**0.0508**	**0.0000**	**98.3316**	**98.3316**	**0.0239**	**0.0000**	**98.8340**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0634	0.4787	0.9565	1.4800e-003	0.0414	6.8100e-003	0.0482	0.0119	6.2600e-003	0.0181	0.0000	127.7990	127.7990	9.7000e-004	0.0000	127.8194
Worker	0.0673	0.0922	0.9227	2.9200e-003	0.2236	1.9200e-003	0.2256	0.0595	1.7800e-003	0.0613	0.0000	198.9734	198.9734	9.5400e-003	0.0000	199.1738
Total	**0.1307**	**0.5709**	**1.8791**	**4.4000e-003**	**0.2650**	**8.7300e-003**	**0.2737**	**0.0713**	**8.0400e-003**	**0.0794**	**0.0000**	**326.7724**	**326.7724**	**0.0105**	**0.0000**	**326.9932**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0399	0.5925	0.7613	1.1300e-003		0.0378	0.0378		0.0378	0.0378	0.0000	98.3315	98.3315	0.0239	0.0000	98.8339
Total	**0.0399**	**0.5925**	**0.7613**	**1.1300e-003**		**0.0378**	**0.0378**		**0.0378**	**0.0378**	**0.0000**	**98.3315**	**98.3315**	**0.0239**	**0.0000**	**98.8339**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0634	0.4787	0.9565	1.4800e-003	0.0414	6.8100e-003	0.0482	0.0119	6.2600e-003	0.0181	0.0000	127.7990	127.7990	9.7000e-004	0.0000	127.8194
Worker	0.0673	0.0922	0.9227	2.9200e-003	0.2236	1.9200e-003	0.2256	0.0595	1.7800e-003	0.0613	0.0000	198.9734	198.9734	9.5400e-003	0.0000	199.1738

Total	**0.1307**	**0.5709**	**1.8791**	**4.4000e-003**	**0.2650**	**8.7300e-003**	**0.2737**	**0.0713**	**8.0400e-003**	**0.0794**	**0.0000**	**326.7724**	**326.7724**	**0.0105**	**0.0000**	**326.9932**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0620	0.6497	0.6249	9.7000e-004		0.0352	0.0352		0.0324	0.0324	0.0000	87.1717	87.1717	0.0276	0.0000	87.7509
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0620**	**0.6497**	**0.6249**	**9.7000e-004**		**0.0352**	**0.0352**		**0.0324**	**0.0324**	**0.0000**	**87.1717**	**87.1717**	**0.0276**	**0.0000**	**87.7509**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7800e-003	2.4400e-003	0.0244	8.0000e-005	5.9200e-003	5.0000e-005	5.9700e-003	1.5700e-003	5.0000e-005	1.6200e-003	0.0000	5.2661	5.2661	2.5000e-004	0.0000	5.2714
Total	**1.7800e-003**	**2.4400e-003**	**0.0244**	**8.0000e-005**	**5.9200e-003**	**5.0000e-005**	**5.9700e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**5.2661**	**5.2661**	**2.5000e-004**	**0.0000**	**5.2714**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0239	0.4813	0.7364	9.7000e-004		0.0260	0.0260		0.0260	0.0260	0.0000	87.1716	87.1716	0.0276	0.0000	87.7508
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0239**	**0.4813**	**0.7364**	**9.7000e-004**		**0.0260**	**0.0260**		**0.0260**	**0.0260**	**0.0000**	**87.1716**	**87.1716**	**0.0276**	**0.0000**	**87.7508**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7800e-003	2.4400e-003	0.0244	8.0000e-005	5.9200e-003	5.0000e-005	5.9700e-003	1.5700e-003	5.0000e-005	1.6200e-003	0.0000	5.2661	5.2661	2.5000e-004	0.0000	5.2714
Total	**1.7800e-003**	**2.4400e-003**	**0.0244**	**8.0000e-005**	**5.9200e-003**	**5.0000e-005**	**5.9700e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**5.2661**	**5.2661**	**2.5000e-004**	**0.0000**	**5.2714**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Archit. Coating	6.7920					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.0798	0.0801	1.3000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003	0.0000	11.1067	11.1067	9.4000e-004	0.0000	11.1264
Total	**6.8036**	**0.0798**	**0.0801**	**1.3000e-004**		**5.6000e-003**	**5.6000e-003**		**5.6000e-003**	**5.6000e-003**	**0.0000**	**11.1067**	**11.1067**	**9.4000e-004**	**0.0000**	**11.1264**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0139	0.0190	0.1905	6.0000e-004	0.0462	4.0000e-004	0.0466	0.0123	3.7000e-004	0.0127	0.0000	41.0755	41.0755	1.9700e-003	0.0000	41.1169
Total	**0.0139**	**0.0190**	**0.1905**	**6.0000e-004**	**0.0462**	**4.0000e-004**	**0.0466**	**0.0123**	**3.7000e-004**	**0.0127**	**0.0000**	**41.0755**	**41.0755**	**1.9700e-003**	**0.0000**	**41.1169**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.7920					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.0798	0.0801	1.3000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003	0.0000	11.1066	11.1066	9.4000e-004	0.0000	11.1263
Total	**6.8036**	**0.0798**	**0.0801**	**1.3000e-004**		**5.6000e-003**	**5.6000e-003**		**5.6000e-003**	**5.6000e-003**	**0.0000**	**11.1066**	**11.1066**	**9.4000e-004**	**0.0000**	**11.1263**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0139	0.0190	0.1905	6.0000e-004	0.0462	4.0000e-004	0.0466	0.0123	3.7000e-004	0.0127	0.0000	41.0755	41.0755	1.9700e-003	0.0000	41.1169
Total	**0.0139**	**0.0190**	**0.1905**	**6.0000e-004**	**0.0462**	**4.0000e-004**	**0.0466**	**0.0123**	**3.7000e-004**	**0.0127**	**0.0000**	**41.0755**	**41.0755**	**1.9700e-003**	**0.0000**	**41.1169**

UCSF Mission Bay Construction 2025

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	232.20	1000sqft	1.43	232,200.00	0
Research & Development	225.00	1000sqft	1.23	225,000.00	0
Enclosed Parking with Elevator	800.00	Space	0.80	271,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreages to match Google Earth estimates

Construction Phase - ADjust number of days propopsrtionally from default to reflect 5-year construction window.

Architectural Coating -

Construction Off-road Equipment Mitigation - Tier 3 equipment as mitigation.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	18.00	78.00
tblConstructionPhase	NumDays	230.00	997.00
tblConstructionPhase	NumDays	8.00	35.00
tblConstructionPhase	NumDays	18.00	78.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	PhaseEndDate	3/20/2020	3/21/2020
tblConstructionPhase	PhaseEndDate	1/31/2020	2/2/2020
tblGrading	AcresOfGrading	17.50	4.00
tblLandUse	LandUseSquareFeet	320,000.00	271,000.00
tblLandUse	LotAcreage	5.33	1.43
tblLandUse	LotAcreage	5.17	1.23

tblLandUse	LotAcreage	7.20	0.80

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4771	3.6936	5.1101	9.6600e-003	0.6286	0.1723	0.8009	0.2547	0.1608	0.4156	0.0000	762.5139	762.5139	0.0960	0.0000	764.5300
2021	0.4595	3.1926	5.3469	0.0111	0.4072	0.1404	0.5475	0.1104	0.1317	0.2420	0.0000	859.9349	859.9349	0.0867	0.0000	861.7548
2022	0.4257	2.8519	5.1831	0.0110	0.4057	0.1203	0.5260	0.1100	0.1129	0.2229	0.0000	853.1956	853.1956	0.0854	0.0000	854.9896
2023	0.3979	2.5813	5.0418	0.0110	0.4058	0.1059	0.5116	0.1100	0.0994	0.2093	0.0000	849.4950	849.4950	0.0844	0.0000	851.2667
2024	3.8612	0.4869	0.8425	1.6900e-003	0.0442	0.0223	0.0665	0.0119	0.0209	0.0327	0.0000	132.3860	132.3860	0.0251	0.0000	132.9124
Total	**5.6215**	**12.8063**	**21.5244**	**0.0445**	**1.8914**	**0.5612**	**2.4526**	**0.5969**	**0.5256**	**1.1225**	**0.0000**	**3,457.5254**	**3,457.5254**	**0.3775**	**0.0000**	**3,465.4536**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2918	2.7733	5.0953	9.6600e-003	0.6286	0.1282	0.7568	0.2547	0.1271	0.3819	0.0000	762.5135	762.5135	0.0960	0.0000	764.5296
2021	0.3257	2.7557	5.5426	0.0111	0.4072	0.1297	0.5369	0.1104	0.1285	0.2389	0.0000	859.9345	859.9345	0.0867	0.0000	861.7544
2022	0.3143	2.6452	5.4024	0.0110	0.4057	0.1278	0.5335	0.1100	0.1266	0.2365	0.0000	853.1952	853.1952	0.0854	0.0000	854.9893

2023	0.3009	2.5282	5.2742	0.0110	0.4058	0.1264	0.5322	0.1100	0.1252	0.2352	0.0000	849.4947	849.4947	0.0844	0.0000	851.2664
2024	3.8401	0.5205	0.9033	1.6900e-003	0.0442	0.0286	0.0728	0.0119	0.0285	0.0404	0.0000	132.3859	132.3859	0.0251	0.0000	132.9123
Total	**5.0729**	**11.2229**	**22.2177**	**0.0445**	**1.8914**	**0.5408**	**2.4322**	**0.5969**	**0.5360**	**1.1328**	**0.0000**	**3,457.5238**	**3,457.5238**	**0.3775**	**0.0000**	**3,465.4520**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**9.76**	**12.36**	**-3.22**	**0.00**	**0.00**	**3.64**	**0.83**	**0.00**	**-1.96**	**-0.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2020	2/2/2020	5	22	
2	Grading	Grading	2/3/2020	3/21/2020	5	35	
3	Building Construction	Building Construction	3/22/2020	1/16/2024	5	997	
4	Paving	Paving	1/17/2024	5/3/2024	5	78	
5	Architectural Coating	Architectural Coating	5/4/2024	8/21/2024	5	78	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,092,300; Non-Residential Outdoor: 364,100 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20

Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	2	6.00	130	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	260.00	119.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	52.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0410	0.4275	0.3622	4.3000e-004		0.0212	0.0212		0.0195	0.0195	0.0000	37.8433	37.8433	0.0122	0.0000	38.1003
Total	**0.0410**	**0.4275**	**0.3622**	**4.3000e-004**	**0.1987**	**0.0212**	**0.2200**	**0.1092**	**0.0195**	**0.1288**	**0.0000**	**37.8433**	**37.8433**	**0.0122**	**0.0000**	**38.1003**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	6.9000e-004	6.8900e-003	2.0000e-005	1.8000e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5335	1.5335	7.0000e-005	0.0000	1.5350
Total	**5.1000e-004**	**6.9000e-004**	**6.8900e-003**	**2.0000e-005**	**1.8000e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.5335**	**1.5335**	**7.0000e-005**	**0.0000**	**1.5350**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.2140	0.2574	4.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	37.8433	37.8433	0.0122	0.0000	38.1003
Total	**0.0105**	**0.2140**	**0.2574**	**4.3000e-004**	**0.1987**	**0.0106**	**0.2093**	**0.1092**	**0.0106**	**0.1198**	**0.0000**	**37.8433**	**37.8433**	**0.0122**	**0.0000**	**38.1003**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	6.9000e-004	6.8900e-003	2.0000e-005	1.8000e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5335	1.5335	7.0000e-005	0.0000	1.5350
Total	**5.1000e-004**	**6.9000e-004**	**6.8900e-003**	**2.0000e-005**	**1.8000e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.5335**	**1.5335**	**7.0000e-005**	**0.0000**	**1.5350**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1075	0.0000	0.1075	0.0582	0.0000	0.0582	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0447	0.4532	0.3969	5.2000e-004		0.0240	0.0240		0.0221	0.0221	0.0000	45.7163	45.7163	0.0148	0.0000	46.0268
Total	**0.0447**	**0.4532**	**0.3969**	**5.2000e-004**	**0.1075**	**0.0240**	**0.1316**	**0.0582**	**0.0221**	**0.0803**	**0.0000**	**45.7163**	**45.7163**	**0.0148**	**0.0000**	**46.0268**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.1000e-004	9.1300e-003	3.0000e-005	2.3800e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.0331	2.0331	1.0000e-004	0.0000	2.0351
Total	**6.7000e-004**	**9.1000e-004**	**9.1300e-003**	**3.0000e-005**	**2.3800e-003**	**2.0000e-005**	**2.4000e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.0331**	**2.0331**	**1.0000e-004**	**0.0000**	**2.0351**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1075	0.0000	0.1075	0.0582	0.0000	0.0582	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.2593	0.3566	5.2000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	45.7163	45.7163	0.0148	0.0000	46.0268
Total	**0.0127**	**0.2593**	**0.3566**	**5.2000e-004**	**0.1075**	**0.0138**	**0.1213**	**0.0582**	**0.0138**	**0.0719**	**0.0000**	**45.7163**	**45.7163**	**0.0148**	**0.0000**	**46.0268**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.1000e-004	9.1300e-003	3.0000e-005	2.3800e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.0331	2.0331	1.0000e-004	0.0000	2.0351
Total	**6.7000e-004**	**9.1000e-004**	**9.1300e-003**	**3.0000e-005**	**2.3800e-003**	**2.0000e-005**	**2.4000e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.0331**	**2.0331**	**1.0000e-004**	**0.0000**	**2.0351**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2154	1.9466	1.7145	2.7300e-003		0.1135	0.1135		0.1067	0.1067	0.0000	235.2629	235.2629	0.0573	0.0000	236.4666
Total	**0.2154**	**1.9466**	**1.7145**	**2.7300e-003**		**0.1135**	**0.1135**		**0.1067**	**0.1067**	**0.0000**	**235.2629**	**235.2629**	**0.0573**	**0.0000**	**236.4666**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1071	0.7728	1.6983	2.7800e-003	0.0776	0.0114	0.0890	0.0222	0.0105	0.0327	0.0000	234.7269	234.7269	1.7700e-003	0.0000	234.7640
Worker	0.0678	0.0919	0.9222	3.1400e-003	0.2406	2.0600e-003	0.2426	0.0640	1.9100e-003	0.0659	0.0000	205.3979	205.3979	9.7200e-003	0.0000	205.6021

Total	**0.1749**	**0.8647**	**2.6205**	**5.9200e-003**	**0.3182**	**0.0135**	**0.3317**	**0.0862**	**0.0124**	**0.0986**	**0.0000**	**440.1248**	**440.1248**	**0.0115**	**0.0000**	**440.3661**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0926	1.4336	1.8447	2.7300e-003		0.0904	0.0904		0.0904	0.0904	0.0000	235.2626	235.2626	0.0573	0.0000	236.4663
Total	**0.0926**	**1.4336**	**1.8447**	**2.7300e-003**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**235.2626**	**235.2626**	**0.0573**	**0.0000**	**236.4663**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1071	0.7728	1.6983	2.7800e-003	0.0776	0.0114	0.0890	0.0222	0.0105	0.0327	0.0000	234.7269	234.7269	1.7700e-003	0.0000	234.7640
Worker	0.0678	0.0919	0.9222	3.1400e-003	0.2406	2.0600e-003	0.2426	0.0640	1.9100e-003	0.0659	0.0000	205.3979	205.3979	9.7200e-003	0.0000	205.6021
Total	**0.1749**	**0.8647**	**2.6205**	**5.9200e-003**	**0.3182**	**0.0135**	**0.3317**	**0.0862**	**0.0124**	**0.0986**	**0.0000**	**440.1248**	**440.1248**	**0.0115**	**0.0000**	**440.3661**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629	2.1582	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.0339	301.0339	0.0725	0.0000	302.5568
Total	**0.2471**	**2.2629**	**2.1582**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.0339**	**301.0339**	**0.0725**	**0.0000**	**302.5568**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1304	0.8197	2.0814	3.5500e-003	0.0994	0.0131	0.1125	0.0285	0.0121	0.0405	0.0000	300.7851	300.7851	2.2700e-003	0.0000	300.8327
Worker	0.0821	0.1100	1.1073	4.0200e-003	0.3078	2.6500e-003	0.3104	0.0819	2.4600e-003	0.0843	0.0000	258.1159	258.1159	0.0119	0.0000	258.3652
Total	**0.2125**	**0.9297**	**3.1887**	**7.5700e-003**	**0.4072**	**0.0158**	**0.4229**	**0.1104**	**0.0145**	**0.1249**	**0.0000**	**558.9010**	**558.9010**	**0.0141**	**0.0000**	**559.1980**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.1133	1.8260	2.3539	3.5000e-003		0.1140	0.1140		0.1140	0.1140	0.0000	301.0335	301.0335	0.0725	0.0000	302.5565
Total	**0.1133**	**1.8260**	**2.3539**	**3.5000e-003**		**0.1140**	**0.1140**		**0.1140**	**0.1140**	**0.0000**	**301.0335**	**301.0335**	**0.0725**	**0.0000**	**302.5565**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1304	0.8197	2.0814	3.5500e-003	0.0994	0.0131	0.1125	0.0285	0.0121	0.0405	0.0000	300.7851	300.7851	2.2700e-003	0.0000	300.8327
Worker	0.0821	0.1100	1.1073	4.0200e-003	0.3078	2.6500e-003	0.3104	0.0819	2.4600e-003	0.0843	0.0000	258.1159	258.1159	0.0119	0.0000	258.3652
Total	**0.2125**	**0.9297**	**3.1887**	**7.5700e-003**	**0.4072**	**0.0158**	**0.4229**	**0.1104**	**0.0145**	**0.1249**	**0.0000**	**558.9010**	**558.9010**	**0.0141**	**0.0000**	**559.1980**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197	2.1226	3.4900e-003		0.1047	0.1047		0.0986	0.0986	0.0000	299.9946	299.9946	0.0718	0.0000	301.5017
Total	**0.2209**	**2.0197**	**2.1226**	**3.4900e-003**		**0.1047**	**0.1047**		**0.0986**	**0.0986**	**0.0000**	**299.9946**	**299.9946**	**0.0718**	**0.0000**	**301.5017**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1271	0.7291	2.0205	3.5500e-003	0.0991	0.0129	0.1120	0.0284	0.0119	0.0403	0.0000	300.3004	300.3004	2.3200e-003	0.0000	300.3490
Worker	0.0777	0.1031	1.0399	4.0000e-003	0.3066	2.6500e-003	0.3093	0.0816	2.4600e-003	0.0840	0.0000	252.9006	252.9006	0.0114	0.0000	253.1389
Total	**0.2048**	**0.8322**	**3.0605**	**7.5500e-003**	**0.4057**	**0.0156**	**0.4213**	**0.1100**	**0.0144**	**0.1243**	**0.0000**	**553.2010**	**553.2010**	**0.0137**	**0.0000**	**553.4879**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1095	1.8131	2.3419	3.4900e-003		0.1122	0.1122		0.1122	0.1122	0.0000	299.9943	299.9943	0.0718	0.0000	301.5013
Total	**0.1095**	**1.8131**	**2.3419**	**3.4900e-003**		**0.1122**	**0.1122**		**0.1122**	**0.1122**	**0.0000**	**299.9943**	**299.9943**	**0.0718**	**0.0000**	**301.5013**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1271	0.7291	2.0205	3.5500e-003	0.0991	0.0129	0.1120	0.0284	0.0119	0.0403	0.0000	300.3004	300.3004	2.3200e-003	0.0000	300.3490
Worker	0.0777	0.1031	1.0399	4.0000e-003	0.3066	2.6500e-003	0.3093	0.0816	2.4600e-003	0.0840	0.0000	252.9006	252.9006	0.0114	0.0000	253.1389
Total	**0.2048**	**0.8322**	**3.0605**	**7.5500e-003**	**0.4057**	**0.0156**	**0.4213**	**0.1100**	**0.0144**	**0.1243**	**0.0000**	**553.2010**	**553.2010**	**0.0137**	**0.0000**	**553.4879**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606	2.1072	3.4900e-003		0.0906	0.0906		0.0852	0.0852	0.0000	300.0980	300.0980	0.0713	0.0000	301.5949
Total	**0.2036**	**1.8606**	**2.1072**	**3.4900e-003**		**0.0906**	**0.0906**		**0.0852**	**0.0852**	**0.0000**	**300.0980**	**300.0980**	**0.0713**	**0.0000**	**301.5949**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1205	0.6233	1.9513	3.5500e-003	0.0992	0.0127	0.1118	0.0284	0.0117	0.0401	0.0000	300.3239	300.3239	2.1500e-003	0.0000	300.3691
Worker	0.0738	0.0974	0.9833	4.0000e-003	0.3066	2.6700e-003	0.3093	0.0816	2.4700e-003	0.0840	0.0000	249.0732	249.0732	0.0109	0.0000	249.3027

Total	**0.1944**	**0.7207**	**2.9346**	**7.5500e-003**	**0.4058**	**0.0153**	**0.4211**	**0.1100**	**0.0141**	**0.1241**	**0.0000**	**549.3970**	**549.3970**	**0.0131**	**0.0000**	**549.6718**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1066	1.8076	2.3396	3.4900e-003		0.1111	0.1111		0.1111	0.1111	0.0000	300.0976	300.0976	0.0713	0.0000	301.5946
Total	**0.1066**	**1.8076**	**2.3396**	**3.4900e-003**		**0.1111**	**0.1111**		**0.1111**	**0.1111**	**0.0000**	**300.0976**	**300.0976**	**0.0713**	**0.0000**	**301.5946**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1205	0.6233	1.9513	3.5500e-003	0.0992	0.0127	0.1118	0.0284	0.0117	0.0401	0.0000	300.3239	300.3239	2.1500e-003	0.0000	300.3691
Worker	0.0738	0.0974	0.9833	4.0000e-003	0.3066	2.6700e-003	0.3093	0.0816	2.4700e-003	0.0840	0.0000	249.0732	249.0732	0.0109	0.0000	249.3027
Total	**0.1944**	**0.7207**	**2.9346**	**7.5500e-003**	**0.4058**	**0.0153**	**0.4211**	**0.1100**	**0.0141**	**0.1241**	**0.0000**	**549.3970**	**549.3970**	**0.0131**	**0.0000**	**549.6718**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7900e-003	0.0803	0.0968	1.6000e-004		3.6600e-003	3.6600e-003		3.4500e-003	3.4500e-003	0.0000	13.8533	13.8533	3.2700e-003	0.0000	13.9220
Total	**8.7900e-003**	**0.0803**	**0.0968**	**1.6000e-004**		**3.6600e-003**	**3.6600e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**13.8533**	**13.8533**	**3.2700e-003**	**0.0000**	**13.9220**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2200e-003	0.0284	0.0843	1.6000e-004	4.5800e-003	5.9000e-004	5.1700e-003	1.3100e-003	5.4000e-004	1.8500e-003	0.0000	13.8832	13.8832	1.0000e-004	0.0000	13.8853
Worker	3.2500e-003	4.2700e-003	0.0431	1.8000e-004	0.0142	1.2000e-004	0.0143	3.7600e-003	1.1000e-004	3.8800e-003	0.0000	11.3375	11.3375	4.9000e-004	0.0000	11.3478
Total	**8.4700e-003**	**0.0327**	**0.1274**	**3.4000e-004**	**0.0187**	**7.1000e-004**	**0.0194**	**5.0700e-003**	**6.5000e-004**	**5.7300e-003**	**0.0000**	**25.2208**	**25.2208**	**5.9000e-004**	**0.0000**	**25.2331**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	4.8100e-003	0.0832	0.1079	1.6000e-004		5.0800e-003	5.0800e-003		5.0800e-003	5.0800e-003	0.0000	13.8533	13.8533	3.2700e-003	0.0000	13.9220
Total	**4.8100e-003**	**0.0832**	**0.1079**	**1.6000e-004**		**5.0800e-003**	**5.0800e-003**		**5.0800e-003**	**5.0800e-003**	**0.0000**	**13.8533**	**13.8533**	**3.2700e-003**	**0.0000**	**13.9220**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2200e-003	0.0284	0.0843	1.6000e-004	4.5800e-003	5.9000e-004	5.1700e-003	1.3100e-003	5.4000e-004	1.8500e-003	0.0000	13.8832	13.8832	1.0000e-004	0.0000	13.8853
Worker	3.2500e-003	4.2700e-003	0.0431	1.8000e-004	0.0142	1.2000e-004	0.0143	3.7600e-003	1.1000e-004	3.8800e-003	0.0000	11.3375	11.3375	4.9000e-004	0.0000	11.3478
Total	**8.4700e-003**	**0.0327**	**0.1274**	**3.4000e-004**	**0.0187**	**7.1000e-004**	**0.0194**	**5.0700e-003**	**6.5000e-004**	**5.7300e-003**	**0.0000**	**25.2208**	**25.2208**	**5.9000e-004**	**0.0000**	**25.2331**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0340	0.3187	0.4700	7.3000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	62.9467	62.9467	0.0198	0.0000	63.3618
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0340**	**0.3187**	**0.4700**	**7.3000e-004**		**0.0154**	**0.0154**		**0.0142**	**0.0142**	**0.0000**	**62.9467**	**62.9467**	**0.0198**	**0.0000**	**63.3618**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	2.1300e-003	0.0216	9.0000e-005	7.0800e-003	6.0000e-005	7.1400e-003	1.8800e-003	6.0000e-005	1.9400e-003	0.0000	5.6688	5.6688	2.4000e-004	0.0000	5.6739
Total	**1.6200e-003**	**2.1300e-003**	**0.0216**	**9.0000e-005**	**7.0800e-003**	**6.0000e-005**	**7.1400e-003**	**1.8800e-003**	**6.0000e-005**	**1.9400e-003**	**0.0000**	**5.6688**	**5.6688**	**2.4000e-004**	**0.0000**	**5.6739**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0169	0.3494	0.5197	7.3000e-004		0.0202	0.0202		0.0202	0.0202	0.0000	62.9466	62.9466	0.0198	0.0000	63.3618
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0169**	**0.3494**	**0.5197**	**7.3000e-004**		**0.0202**	**0.0202**		**0.0202**	**0.0202**	**0.0000**	**62.9466**	**62.9466**	**0.0198**	**0.0000**	**63.3618**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	2.1300e-003	0.0216	9.0000e-005	7.0800e-003	6.0000e-005	7.1400e-003	1.8800e-003	6.0000e-005	1.9400e-003	0.0000	5.6688	5.6688	2.4000e-004	0.0000	5.6739
Total	**1.6200e-003**	**2.1300e-003**	**0.0216**	**9.0000e-005**	**7.0800e-003**	**6.0000e-005**	**7.1400e-003**	**1.8800e-003**	**6.0000e-005**	**1.9400e-003**	**0.0000**	**5.6688**	**5.6688**	**2.4000e-004**	**0.0000**	**5.6739**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.7971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0500e-003	0.0475	0.0706	1.2000e-004		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	9.9577	9.9577	5.6000e-004	0.0000	9.9695
Total	**3.8042**	**0.0475**	**0.0706**	**1.2000e-004**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**9.9577**	**9.9577**	**5.6000e-004**	**0.0000**	**9.9695**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2200e-003	5.5500e-003	0.0561	2.4000e-004	0.0184	1.6000e-004	0.0186	4.8900e-003	1.5000e-004	5.0400e-003	0.0000	14.7388	14.7388	6.3000e-004	0.0000	14.7521

Total	**4.2200e-003**	**5.5500e-003**	**0.0561**	**2.4000e-004**	**0.0184**	**1.6000e-004**	**0.0186**	**4.8900e-003**	**1.5000e-004**	**5.0400e-003**	**0.0000**	**14.7388**	**14.7388**	**6.3000e-004**	**0.0000**	**14.7521**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.7971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0500e-003	0.0475	0.0706	1.2000e-004		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	9.9577	9.9577	5.6000e-004	0.0000	9.9695
Total	**3.8042**	**0.0475**	**0.0706**	**1.2000e-004**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**9.9577**	**9.9577**	**5.6000e-004**	**0.0000**	**9.9695**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2200e-003	5.5500e-003	0.0561	2.4000e-004	0.0184	1.6000e-004	0.0186	4.8900e-003	1.5000e-004	5.0400e-003	0.0000	14.7388	14.7388	6.3000e-004	0.0000	14.7521
Total	**4.2200e-003**	**5.5500e-003**	**0.0561**	**2.4000e-004**	**0.0184**	**1.6000e-004**	**0.0186**	**4.8900e-003**	**1.5000e-004**	**5.0400e-003**	**0.0000**	**14.7388**	**14.7388**	**6.3000e-004**	**0.0000**	**14.7521**

UCSF Mission Bay Construction 2031

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	377.40	1000sqft	2.75	377,400.00	0
Research & Development	323.30	1000sqft	1.12	323,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Only Run 2025-2031

Land Use - Adjust acreage to match Google-Earth estimates

Construction Phase - Adjust default number of phase days proposrtionally to reflect 5 year construction window.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblConstructionPhase	NumDays	18.00	78.00
tblConstructionPhase	NumDays	230.00	997.00

tblConstructionPhase	NumDays	8.00	35.00
tblConstructionPhase	NumDays	18.00	78.00
tblConstructionPhase	NumDays	5.00	22.00
tblGrading	AcresOfGrading	17.50	4.00
tblLandUse	LotAcreage	8.66	2.75
tblLandUse	LotAcreage	7.42	1.12
tblProjectCharacteristics	OperationalYear	2014	2030

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.3255	2.3078	4.2154	9.1500e-003	0.5929	0.0885	0.6814	0.2452	0.0825	0.3278	0.0000	715.1099	715.1099	0.0911	0.0000	717.0226
2026	0.3378	2.2746	4.5095	0.0104	0.3615	0.0832	0.4446	0.0982	0.0779	0.1761	0.0000	801.8740	801.8740	0.0815	0.0000	803.5854
2027	0.3353	2.2673	4.4619	0.0104	0.3615	0.0832	0.4448	0.0982	0.0780	0.1762	0.0000	800.4341	800.4341	0.0813	0.0000	802.1416
2028	0.3311	2.2521	4.4067	0.0104	0.3602	0.0829	0.4431	0.0978	0.0777	0.1756	0.0000	796.1925	796.1925	0.0808	0.0000	797.8897
2029	3.7102	0.4357	0.7820	1.5800e-003	0.0382	0.0193	0.0575	0.0103	0.0181	0.0283	0.0000	124.0929	124.0929	0.0244	0.0000	124.6058
Total	**5.0399**	**9.5376**	**18.3755**	**0.0420**	**1.7144**	**0.3571**	**2.0714**	**0.5496**	**0.3343**	**0.8839**	**0.0000**	**3,237.7033**	**3,237.7033**	**0.3591**	**0.0000**	**3,245.2451**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.3255	2.3078	4.2154	9.1500e-003	0.5929	0.0885	0.6814	0.2452	0.0825	0.3278	0.0000	715.1096	715.1096	0.0911	0.0000	717.0222
2026	0.3378	2.2746	4.5095	0.0104	0.3615	0.0832	0.4446	0.0982	0.0779	0.1761	0.0000	801.8736	801.8736	0.0815	0.0000	803.5850
2027	0.3353	2.2673	4.4619	0.0104	0.3615	0.0832	0.4448	0.0982	0.0780	0.1762	0.0000	800.4338	800.4338	0.0813	0.0000	802.1412
2028	0.3311	2.2521	4.4067	0.0104	0.3602	0.0829	0.4431	0.0978	0.0777	0.1756	0.0000	796.1921	796.1921	0.0808	0.0000	797.8894
2029	3.7102	0.4357	0.7820	1.5800e-003	0.0382	0.0193	0.0575	0.0103	0.0181	0.0283	0.0000	124.0928	124.0928	0.0244	0.0000	124.6057
Total	**5.0399**	**9.5376**	**18.3755**	**0.0420**	**1.7144**	**0.3571**	**2.0714**	**0.5496**	**0.3343**	**0.8839**	**0.0000**	**3,237.7018**	**3,237.7018**	**0.3591**	**0.0000**	**3,245.2436**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2025	1/30/2025	5	22	
2	Grading	Grading	1/31/2025	3/20/2025	5	35	
3	Building Construction	Building Construction	3/21/2025	1/15/2029	5	997	
4	Paving	Paving	1/16/2029	5/3/2029	5	78	
5	Architectural Coating	Architectural Coating	5/4/2029	8/21/2029	5	78	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,051,050; Non-Residential Outdoor: 350,350 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Grading	Excavators	1	8.00	162	0.38
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Graders	1	8.00	174	0.41
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Paving	Paving Equipment	2	6.00	130	0.36
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	224.00	115.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	45.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2588	0.2738	4.3000e-004		0.0113	0.0113		0.0104	0.0104	0.0000	37.8589	37.8589	0.0122	0.0000	38.1160
Total	**0.0276**	**0.2588**	**0.2738**	**4.3000e-004**	**0.1987**	**0.0113**	**0.2101**	**0.1092**	**0.0104**	**0.1197**	**0.0000**	**37.8589**	**37.8589**	**0.0122**	**0.0000**	**38.1160**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	5.2000e-004	5.2400e-003	2.0000e-005	1.8000e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4213	1.4213	6.0000e-005	0.0000	1.4226
Total	**4.0000e-004**	**5.2000e-004**	**5.2400e-003**	**2.0000e-005**	**1.8000e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4213**	**1.4213**	**6.0000e-005**	**0.0000**	**1.4226**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2588	0.2738	4.3000e-004		0.0113	0.0113		0.0104	0.0104	0.0000	37.8588	37.8588	0.0122	0.0000	38.1159
Total	**0.0276**	**0.2588**	**0.2738**	**4.3000e-004**	**0.1987**	**0.0113**	**0.2101**	**0.1092**	**0.0104**	**0.1197**	**0.0000**	**37.8588**	**37.8588**	**0.0122**	**0.0000**	**38.1159**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	5.2000e-004	5.2400e-003	2.0000e-005	1.8000e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4213	1.4213	6.0000e-005	0.0000	1.4226
Total	**4.0000e-004**	**5.2000e-004**	**5.2400e-003**	**2.0000e-005**	**1.8000e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4213**	**1.4213**	**6.0000e-005**	**0.0000**	**1.4226**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.1075	0.0000	0.1075	0.0582	0.0000	0.0582	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0287	0.2592	0.3440	5.2000e-004		0.0120	0.0120		0.0111	0.0111	0.0000	45.7716	45.7716	0.0148	0.0000	46.0824
Total	**0.0287**	**0.2592**	**0.3440**	**5.2000e-004**	**0.1075**	**0.0120**	**0.1195**	**0.0582**	**0.0111**	**0.0692**	**0.0000**	**45.7716**	**45.7716**	**0.0148**	**0.0000**	**46.0824**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	6.9000e-004	6.9500e-003	3.0000e-005	2.3800e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	1.8844	1.8844	8.0000e-005	0.0000	1.8860
Total	**5.2000e-004**	**6.9000e-004**	**6.9500e-003**	**3.0000e-005**	**2.3800e-003**	**2.0000e-005**	**2.4000e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**1.8844**	**1.8844**	**8.0000e-005**	**0.0000**	**1.8860**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1075	0.0000	0.1075	0.0582	0.0000	0.0582	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0287	0.2592	0.3440	5.2000e-004		0.0120	0.0120		0.0111	0.0111	0.0000	45.7715	45.7715	0.0148	0.0000	46.0824
Total	**0.0287**	**0.2592**	**0.3440**	**5.2000e-004**	**0.1075**	**0.0120**	**0.1195**	**0.0582**	**0.0111**	**0.0692**	**0.0000**	**45.7715**	**45.7715**	**0.0148**	**0.0000**	**46.0824**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	6.9000e-004	6.9500e-003	3.0000e-005	2.3800e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	1.8844	1.8844	8.0000e-005	0.0000	1.8860
Total	**5.2000e-004**	**6.9000e-004**	**6.9500e-003**	**3.0000e-005**	**2.3800e-003**	**2.0000e-005**	**2.4000e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**1.8844**	**1.8844**	**8.0000e-005**	**0.0000**	**1.8860**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1389	1.2658	1.6373	2.7400e-003		0.0536	0.0536		0.0504	0.0504	0.0000	235.5785	235.5785	0.0553	0.0000	236.7396
Total	**0.1389**	**1.2658**	**1.6373**	**2.7400e-003**		**0.0536**	**0.0536**		**0.0504**	**0.0504**	**0.0000**	**235.5785**	**235.5785**	**0.0553**	**0.0000**	**236.7396**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0838	0.4631	1.3430	2.7000e-003	0.0753	9.7500e-003	0.0850	0.0216	8.9700e-003	0.0306	0.0000	228.5814	228.5814	1.6500e-003	0.0000	228.6161
Worker	0.0456	0.0598	0.6052	2.7100e-003	0.2073	1.8300e-003	0.2091	0.0551	1.6900e-003	0.0568	0.0000	164.0139	164.0139	6.9500e-003	0.0000	164.1598
Total	**0.1294**	**0.5229**	**1.9482**	**5.4100e-003**	**0.2825**	**0.0116**	**0.2941**	**0.0767**	**0.0107**	**0.0874**	**0.0000**	**392.5954**	**392.5954**	**8.6000e-003**	**0.0000**	**392.7759**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1389	1.2658	1.6373	2.7400e-003		0.0536	0.0536		0.0504	0.0504	0.0000	235.5782	235.5782	0.0553	0.0000	236.7393
Total	**0.1389**	**1.2658**	**1.6373**	**2.7400e-003**		**0.0536**	**0.0536**		**0.0504**	**0.0504**	**0.0000**	**235.5782**	**235.5782**	**0.0553**	**0.0000**	**236.7393**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0838	0.4631	1.3430	2.7000e-003	0.0753	9.7500e-003	0.0850	0.0216	8.9700e-003	0.0306	0.0000	228.5814	228.5814	1.6500e-003	0.0000	228.6161
Worker	0.0456	0.0598	0.6052	2.7100e-003	0.2073	1.8300e-003	0.2091	0.0551	1.6900e-003	0.0568	0.0000	164.0139	164.0139	6.9500e-003	0.0000	164.1598

Total	**0.1294**	**0.5229**	**1.9482**	**5.4100e-003**	**0.2825**	**0.0116**	**0.2941**	**0.0767**	**0.0107**	**0.0874**	**0.0000**	**392.5954**	**392.5954**	**8.6000e-003**	**0.0000**	**392.7759**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1040	0.5817	1.6696	3.4500e-003	0.0963	0.0123	0.1086	0.0276	0.0113	0.0389	0.0000	292.8933	292.8933	2.0900e-003	0.0000	292.9373
Worker	0.0561	0.0734	0.7451	3.4600e-003	0.2652	2.3600e-003	0.2675	0.0705	2.1900e-003	0.0727	0.0000	207.5787	207.5787	8.6700e-003	0.0000	207.7607
Total	**0.1601**	**0.6552**	**2.4147**	**6.9100e-003**	**0.3615**	**0.0146**	**0.3761**	**0.0982**	**0.0135**	**0.1116**	**0.0000**	**500.4721**	**500.4721**	**0.0108**	**0.0000**	**500.6980**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1040	0.5817	1.6696	3.4500e-003	0.0963	0.0123	0.1086	0.0276	0.0113	0.0389	0.0000	292.8933	292.8933	2.0900e-003	0.0000	292.9373
Worker	0.0561	0.0734	0.7451	3.4600e-003	0.2652	2.3600e-003	0.2675	0.0705	2.1900e-003	0.0727	0.0000	207.5787	207.5787	8.6700e-003	0.0000	207.7607
Total	**0.1601**	**0.6552**	**2.4147**	**6.9100e-003**	**0.3615**	**0.0146**	**0.3761**	**0.0982**	**0.0135**	**0.1116**	**0.0000**	**500.4721**	**500.4721**	**0.0108**	**0.0000**	**500.6980**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1036	0.5771	1.6477	3.4600e-003	0.0964	0.0123	0.1087	0.0276	0.0114	0.0390	0.0000	293.4266	293.4266	2.1000e-003	0.0000	293.4706
Worker	0.0540	0.0707	0.7194	3.4600e-003	0.2652	2.3800e-003	0.2675	0.0705	2.2100e-003	0.0727	0.0000	205.6057	205.6057	8.4700e-003	0.0000	205.7835
Total	**0.1576**	**0.6479**	**2.3671**	**6.9200e-003**	**0.3615**	**0.0147**	**0.3762**	**0.0982**	**0.0136**	**0.1117**	**0.0000**	**499.0322**	**499.0322**	**0.0106**	**0.0000**	**499.2542**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1036	0.5771	1.6477	3.4600e-003	0.0964	0.0123	0.1087	0.0276	0.0114	0.0390	0.0000	293.4266	293.4266	2.1000e-003	0.0000	293.4706
Worker	0.0540	0.0707	0.7194	3.4600e-003	0.2652	2.3800e-003	0.2675	0.0705	2.2100e-003	0.0727	0.0000	205.6057	205.6057	8.4700e-003	0.0000	205.7835
Total	**0.1576**	**0.6479**	**2.3671**	**6.9200e-003**	**0.3615**	**0.0147**	**0.3762**	**0.0982**	**0.0136**	**0.1117**	**0.0000**	**499.0322**	**499.0322**	**0.0106**	**0.0000**	**499.2542**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133	2.0867	3.4900e-003		0.0683	0.0683		0.0642	0.0642	0.0000	300.2471	300.2471	0.0705	0.0000	301.7269
Total	**0.1770**	**1.6133**	**2.0867**	**3.4900e-003**		**0.0683**	**0.0683**		**0.0642**	**0.0642**	**0.0000**	**300.2471**	**300.2471**	**0.0705**	**0.0000**	**301.7269**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1023	0.5708	1.6261	3.4500e-003	0.0960	0.0123	0.1083	0.0276	0.0113	0.0389	0.0000	292.8224	292.8224	2.0900e-003	0.0000	292.8663
Worker	0.0519	0.0680	0.6938	3.4500e-003	0.2642	2.3800e-003	0.2665	0.0703	2.2100e-003	0.0725	0.0000	203.1230	203.1230	8.2600e-003	0.0000	203.2965
Total	**0.1541**	**0.6388**	**2.3199**	**6.9000e-003**	**0.3602**	**0.0147**	**0.3749**	**0.0978**	**0.0135**	**0.1113**	**0.0000**	**495.9454**	**495.9454**	**0.0104**	**0.0000**	**496.1628**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133	2.0867	3.4900e-003		0.0683	0.0683		0.0642	0.0642	0.0000	300.2467	300.2467	0.0705	0.0000	301.7266
Total	**0.1770**	**1.6133**	**2.0867**	**3.4900e-003**		**0.0683**	**0.0683**		**0.0642**	**0.0642**	**0.0000**	**300.2467**	**300.2467**	**0.0705**	**0.0000**	**301.7266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1023	0.5708	1.6261	3.4500e-003	0.0960	0.0123	0.1083	0.0276	0.0113	0.0389	0.0000	292.8224	292.8224	2.0900e-003	0.0000	292.8663
Worker	0.0519	0.0680	0.6938	3.4500e-003	0.2642	2.3800e-003	0.2665	0.0703	2.2100e-003	0.0725	0.0000	203.1230	203.1230	8.2600e-003	0.0000	203.2965

Total	**0.1541**	**0.6388**	**2.3199**	**6.9000e-003**	**0.3602**	**0.0147**	**0.3749**	**0.0978**	**0.0135**	**0.1113**	**0.0000**	**495.9454**	**495.9454**	**0.0104**	**0.0000**	**496.1628**

3.4 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4900e-003	0.0683	0.0883	1.5000e-004		2.8900e-003	2.8900e-003		2.7200e-003	2.7200e-003	0.0000	12.7028	12.7028	2.9800e-003	0.0000	12.7654
Total	**7.4900e-003**	**0.0683**	**0.0883**	**1.5000e-004**		**2.8900e-003**	**2.8900e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**12.7028**	**12.7028**	**2.9800e-003**	**0.0000**	**12.7654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2900e-003	0.0240	0.0679	1.5000e-004	4.0600e-003	5.2000e-004	4.5900e-003	1.1700e-003	4.8000e-004	1.6500e-003	0.0000	12.4061	12.4061	9.0000e-005	0.0000	12.4079
Worker	2.1100e-003	2.7800e-003	0.0284	1.5000e-004	0.0112	1.0000e-004	0.0113	2.9700e-003	9.0000e-005	3.0700e-003	0.0000	8.5319	8.5319	3.4000e-004	0.0000	8.5391
Total	**6.4000e-003**	**0.0268**	**0.0964**	**3.0000e-004**	**0.0152**	**6.2000e-004**	**0.0159**	**4.1400e-003**	**5.7000e-004**	**4.7200e-003**	**0.0000**	**20.9380**	**20.9380**	**4.3000e-004**	**0.0000**	**20.9470**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4900e-003	0.0683	0.0883	1.5000e-004		2.8900e-003	2.8900e-003		2.7200e-003	2.7200e-003	0.0000	12.7028	12.7028	2.9800e-003	0.0000	12.7654
Total	**7.4900e-003**	**0.0683**	**0.0883**	**1.5000e-004**		**2.8900e-003**	**2.8900e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**12.7028**	**12.7028**	**2.9800e-003**	**0.0000**	**12.7654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2900e-003	0.0240	0.0679	1.5000e-004	4.0600e-003	5.2000e-004	4.5900e-003	1.1700e-003	4.8000e-004	1.6500e-003	0.0000	12.4061	12.4061	9.0000e-005	0.0000	12.4079
Worker	2.1100e-003	2.7800e-003	0.0284	1.5000e-004	0.0112	1.0000e-004	0.0113	2.9700e-003	9.0000e-005	3.0700e-003	0.0000	8.5319	8.5319	3.4000e-004	0.0000	8.5391
Total	**6.4000e-003**	**0.0268**	**0.0964**	**3.0000e-004**	**0.0152**	**6.2000e-004**	**0.0159**	**4.1400e-003**	**5.7000e-004**	**4.7200e-003**	**0.0000**	**20.9380**	**20.9380**	**4.3000e-004**	**0.0000**	**20.9470**

3.5 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0316	0.2903	0.4683	7.3000e-004		0.0136	0.0136		0.0126	0.0126	0.0000	62.9390	62.9390	0.0198	0.0000	63.3541
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0316**	**0.2903**	**0.4683**	**7.3000e-004**		**0.0136**	**0.0136**		**0.0126**	**0.0126**	**0.0000**	**62.9390**	**62.9390**	**0.0198**	**0.0000**	**63.3541**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.7600e-003	0.0180	9.0000e-005	7.0800e-003	6.0000e-005	7.1400e-003	1.8800e-003	6.0000e-005	1.9400e-003	0.0000	5.4017	5.4017	2.2000e-004	0.0000	5.4063
Total	**1.3400e-003**	**1.7600e-003**	**0.0180**	**9.0000e-005**	**7.0800e-003**	**6.0000e-005**	**7.1400e-003**	**1.8800e-003**	**6.0000e-005**	**1.9400e-003**	**0.0000**	**5.4017**	**5.4017**	**2.2000e-004**	**0.0000**	**5.4063**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0316	0.2903	0.4683	7.3000e-004		0.0136	0.0136		0.0126	0.0126	0.0000	62.9389	62.9389	0.0198	0.0000	63.3540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0316**	**0.2903**	**0.4683**	**7.3000e-004**		**0.0136**	**0.0136**		**0.0126**	**0.0126**	**0.0000**	**62.9389**	**62.9389**	**0.0198**	**0.0000**	**63.3540**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.7600e-003	0.0180	9.0000e-005	7.0800e-003	6.0000e-005	7.1400e-003	1.8800e-003	6.0000e-005	1.9400e-003	0.0000	5.4017	5.4017	2.2000e-004	0.0000	5.4063
Total	**1.3400e-003**	**1.7600e-003**	**0.0180**	**9.0000e-005**	**7.0800e-003**	**6.0000e-005**	**7.1400e-003**	**1.8800e-003**	**6.0000e-005**	**1.9400e-003**	**0.0000**	**5.4017**	**5.4017**	**2.2000e-004**	**0.0000**	**5.4063**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.6537					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6600e-003	0.0447	0.0706	1.2000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	9.9577	9.9577	5.4000e-004	0.0000	9.9691
Total	**3.6604**	**0.0447**	**0.0706**	**1.2000e-004**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**9.9577**	**9.9577**	**5.4000e-004**	**0.0000**	**9.9691**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0100e-003	3.9600e-003	0.0405	2.1000e-004	0.0159	1.4000e-004	0.0161	4.2300e-003	1.3000e-004	4.3700e-003	0.0000	12.1538	12.1538	4.9000e-004	0.0000	12.1641
Total	**3.0100e-003**	**3.9600e-003**	**0.0405**	**2.1000e-004**	**0.0159**	**1.4000e-004**	**0.0161**	**4.2300e-003**	**1.3000e-004**	**4.3700e-003**	**0.0000**	**12.1538**	**12.1538**	**4.9000e-004**	**0.0000**	**12.1641**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.6537					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6600e-003	0.0447	0.0706	1.2000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	9.9577	9.9577	5.4000e-004	0.0000	9.9691
Total	**3.6604**	**0.0447**	**0.0706**	**1.2000e-004**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**9.9577**	**9.9577**	**5.4000e-004**	**0.0000**	**9.9691**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0100e-003	3.9600e-003	0.0405	2.1000e-004	0.0159	1.4000e-004	0.0161	4.2300e-003	1.3000e-004	4.3700e-003	0.0000	12.1538	12.1538	4.9000e-004	0.0000	12.1641

Total	3.0100e-003	3.9600e-003	0.0405	2.1000e-004	0.0159	1.4000e-004	0.0161	4.2300e-003	1.3000e-004	4.3700e-003	0.0000	12.1538	12.1538	4.9000e-004	0.0000	12.1641

UCSF Mission Bay Construction 2035

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	793.50	1000sqft	5.00	793,500.00	0
Enclosed Parking with Elevator	626.00	Space	0.00	250,400.00	0
Research & Development	193.00	1000sqft	0.80	193,000.00	0
Enclosed Parking with Elevator	800.00	Space	0.80	320,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction only run 2030-2035

Land Use - Adjust acreages to match GoogleEarth estimates. Acreage of smaller parking garage assumed in Hospital acreage.

Construction Phase - Adjust default number of days per phase proportionally to match 5 year development window.

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	87.00
tblConstructionPhase	NumDays	230.00	997.00
tblConstructionPhase	NumDays	20.00	87.00

tblConstructionPhase	NumDays	20.00	87.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	PhaseEndDate	3/1/2030	3/3/2030
tblGrading	AcresOfGrading	43.50	10.00
tblLandUse	LotAcreage	18.22	5.00
tblLandUse	LotAcreage	5.63	0.00
tblLandUse	LotAcreage	4.43	0.80
tblLandUse	LotAcreage	7.20	0.80
tblProjectCharacteristics	OperationalYear	2014	2035

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2030	0.3804	1.8358	4.7643	0.0126	1.0989	0.0461	1.1450	0.4782	0.0448	0.5230	0.0000	974.3548	974.3548	0.0292	0.0000	974.9685
2031	0.5043	2.4370	7.1823	0.0203	0.8709	0.0528	0.9238	0.2362	0.0502	0.2863	0.0000	1,490.9788	1,490.9788	0.0378	0.0000	1,491.7716
2032	0.4995	2.4376	7.1374	0.0204	0.8743	0.0531	0.9274	0.2371	0.0504	0.2875	0.0000	1,494.9314	1,494.9314	0.0376	0.0000	1,495.7201
2033	0.4881	2.4087	7.0248	0.0202	0.8677	0.0527	0.9204	0.2353	0.0501	0.2853	0.0000	1,481.8869	1,481.8869	0.0370	0.0000	1,482.6635
2034	8.3466	1.1272	3.1155	8.5100e-003	0.3301	0.0324	0.3625	0.0892	0.0316	0.1208	0.0000	629.1803	629.1803	0.0185	0.0000	629.5690
Total	**10.2188**	**10.2462**	**29.2242**	**0.0821**	**4.0419**	**0.2372**	**4.2790**	**1.2759**	**0.2270**	**1.5030**	**0.0000**	**6,071.3323**	**6,071.3323**	**0.1600**	**0.0000**	**6,074.6927**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2030	0.3804	1.8358	4.7643	0.0126	1.0989	0.0461	1.1450	0.4782	0.0448	0.5230	0.0000	974.3543	974.3543	0.0292	0.0000	974.9680
2031	0.5043	2.4370	7.1823	0.0203	0.8709	0.0528	0.9238	0.2362	0.0502	0.2863	0.0000	1,490.9784	1,490.9784	0.0378	0.0000	1,491.7712
2032	0.4995	2.4376	7.1374	0.0204	0.8743	0.0531	0.9274	0.2371	0.0504	0.2875	0.0000	1,494.9310	1,494.9310	0.0376	0.0000	1,495.7197
2033	0.4881	2.4087	7.0248	0.0202	0.8677	0.0527	0.9204	0.2353	0.0501	0.2853	0.0000	1,481.8865	1,481.8865	0.0370	0.0000	1,482.6631
2034	8.3466	1.1272	3.1155	8.5100e-003	0.3301	0.0324	0.3625	0.0892	0.0316	0.1208	0.0000	629.1800	629.1800	0.0185	0.0000	629.5688
Total	**10.2188**	**10.2462**	**29.2242**	**0.0821**	**4.0419**	**0.2372**	**4.2790**	**1.2759**	**0.2270**	**1.5030**	**0.0000**	**6,071.3303**	**6,071.3303**	**0.1600**	**0.0000**	**6,074.6907**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2030	3/3/2030	5	43	
2	Grading	Grading	3/4/2030	7/2/2030	5	87	
3	Building Construction	Building Construction	7/3/2030	4/27/2034	5	997	
4	Paving	Paving	4/28/2034	8/28/2034	5	87	
5	Architectural Coating	Architectural Coating	8/29/2034	12/27/2034	5	87	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,335,350; Non-Residential Outdoor: 778,450 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	1	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	555.00	255.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	111.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3884	0.0000	0.3884	0.2135	0.0000	0.2135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0522	0.2808	0.3643	9.1000e-004		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	87.8867	87.8867	4.2400e-003	0.0000	87.9757
Total	**0.0522**	**0.2808**	**0.3643**	**9.1000e-004**	**0.3884**	**9.0600e-003**	**0.3975**	**0.2135**	**9.0600e-003**	**0.2226**	**0.0000**	**87.8867**	**87.8867**	**4.2400e-003**	**0.0000**	**87.9757**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.4000e-004	8.4000e-004	8.6700e-003	5.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	2.6634	2.6634	1.1000e-004	0.0000	2.6656
Total	**6.4000e-004**	**8.4000e-004**	**8.6700e-003**	**5.0000e-005**	**3.5100e-003**	**3.0000e-005**	**3.5400e-003**	**9.3000e-004**	**3.0000e-005**	**9.6000e-004**	**0.0000**	**2.6634**	**2.6634**	**1.1000e-004**	**0.0000**	**2.6656**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3884	0.0000	0.3884	0.2135	0.0000	0.2135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0522	0.2808	0.3643	9.1000e-004		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	87.8866	87.8866	4.2400e-003	0.0000	87.9756
Total	**0.0522**	**0.2808**	**0.3643**	**9.1000e-004**	**0.3884**	**9.0600e-003**	**0.3975**	**0.2135**	**9.0600e-003**	**0.2226**	**0.0000**	**87.8866**	**87.8866**	**4.2400e-003**	**0.0000**	**87.9756**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.4000e-004	8.4000e-004	8.6700e-003	5.0000e-005	3.5100e-003	3.0000e-005	3.5400e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	2.6634	2.6634	1.1000e-004	0.0000	2.6656
Total	**6.4000e-004**	**8.4000e-004**	**8.6700e-003**	**5.0000e-005**	**3.5100e-003**	**3.0000e-005**	**3.5400e-003**	**9.3000e-004**	**3.0000e-005**	**9.6000e-004**	**0.0000**	**2.6634**	**2.6634**	**1.1000e-004**	**0.0000**	**2.6656**

3.3 Grading - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.2673	0.0000	0.2673	0.1446	0.0000	0.1446	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0707	0.3333	0.7565	1.5000e-003		0.0107	0.0107		0.0107	0.0107	0.0000	135.4989	135.4989	5.7100e-003	0.0000	135.6189
Total	**0.0707**	**0.3333**	**0.7565**	**1.5000e-003**	**0.2673**	**0.0107**	**0.2779**	**0.1446**	**0.0107**	**0.1552**	**0.0000**	**135.4989**	**135.4989**	**5.7100e-003**	**0.0000**	**135.6189**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0800e-003	1.4200e-003	0.0146	8.0000e-005	5.9200e-003	5.0000e-005	5.9700e-003	1.5700e-003	5.0000e-005	1.6200e-003	0.0000	4.4906	4.4906	1.8000e-004	0.0000	4.4943
Total	**1.0800e-003**	**1.4200e-003**	**0.0146**	**8.0000e-005**	**5.9200e-003**	**5.0000e-005**	**5.9700e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**4.4906**	**4.4906**	**1.8000e-004**	**0.0000**	**4.4943**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2673	0.0000	0.2673	0.1446	0.0000	0.1446	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0707	0.3333	0.7565	1.5000e-003		0.0107	0.0107		0.0107	0.0107	0.0000	135.4987	135.4987	5.7100e-003	0.0000	135.6187
Total	**0.0707**	**0.3333**	**0.7565**	**1.5000e-003**	**0.2673**	**0.0107**	**0.2779**	**0.1446**	**0.0107**	**0.1552**	**0.0000**	**135.4987**	**135.4987**	**5.7100e-003**	**0.0000**	**135.6187**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0800e-003	1.4200e-003	0.0146	8.0000e-005	5.9200e-003	5.0000e-005	5.9700e-003	1.5700e-003	5.0000e-005	1.6200e-003	0.0000	4.4906	4.4906	1.8000e-004	0.0000	4.4943
Total	**1.0800e-003**	**1.4200e-003**	**0.0146**	**8.0000e-005**	**5.9200e-003**	**5.0000e-005**	**5.9700e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**4.4906**	**4.4906**	**1.8000e-004**	**0.0000**	**4.4943**

3.4 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0848	0.5147	1.0485	2.0000e-003		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	170.1098	170.1098	6.8300e-003	0.0000	170.2532
Total	**0.0848**	**0.5147**	**1.0485**	**2.0000e-003**		**9.5900e-003**	**9.5900e-003**		**9.5900e-003**	**9.5900e-003**	**0.0000**	**170.1098**	**170.1098**	**6.8300e-003**	**0.0000**	**170.2532**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1114	0.6261	1.7633	3.8400e-003	0.1066	0.0137	0.1203	0.0306	0.0126	0.0432	0.0000	325.4341	325.4341	2.3300e-003	0.0000	325.4830
Worker	0.0596	0.0787	0.8084	4.2700e-003	0.3272	2.9800e-003	0.3302	0.0871	2.7600e-003	0.0898	0.0000	248.2715	248.2715	9.8300e-003	0.0000	248.4779
Total	**0.1710**	**0.7048**	**2.5717**	**8.1100e-003**	**0.4338**	**0.0167**	**0.4505**	**0.1176**	**0.0154**	**0.1330**	**0.0000**	**573.7056**	**573.7056**	**0.0122**	**0.0000**	**573.9609**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0848	0.5147	1.0485	2.0000e-003		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	170.1096	170.1096	6.8300e-003	0.0000	170.2530
Total	**0.0848**	**0.5147**	**1.0485**	**2.0000e-003**		**9.5900e-003**	**9.5900e-003**		**9.5900e-003**	**9.5900e-003**	**0.0000**	**170.1096**	**170.1096**	**6.8300e-003**	**0.0000**	**170.2530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1114	0.6261	1.7633	3.8400e-003	0.1066	0.0137	0.1203	0.0306	0.0126	0.0432	0.0000	325.4341	325.4341	2.3300e-003	0.0000	325.4830
Worker	0.0596	0.0787	0.8084	4.2700e-003	0.3272	2.9800e-003	0.3302	0.0871	2.7600e-003	0.0898	0.0000	248.2715	248.2715	9.8300e-003	0.0000	248.4779

Total	**0.1710**	**0.7048**	**2.5717**	**8.1100e-003**	**0.4338**	**0.0167**	**0.4505**	**0.1176**	**0.0154**	**0.1330**	**0.0000**	**573.7056**	**573.7056**	**0.0122**	**0.0000**	**573.9609**

3.4 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5281	341.5281	0.0137	0.0000	341.8160
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5281**	**341.5281**	**0.0137**	**0.0000**	**341.8160**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2196	1.2512	3.5003	7.7000e-003	0.2140	0.0276	0.2415	0.0614	0.0254	0.0868	0.0000	653.6581	653.6581	4.6900e-003	0.0000	653.7565
Worker	0.1146	0.1526	1.5768	8.5800e-003	0.6570	5.9900e-003	0.6630	0.1748	5.5600e-003	0.1803	0.0000	495.7927	495.7927	0.0194	0.0000	496.1991
Total	**0.3342**	**1.4037**	**5.0772**	**0.0163**	**0.8709**	**0.0336**	**0.9045**	**0.2362**	**0.0309**	**0.2671**	**0.0000**	**1,149.4507**	**1,149.4507**	**0.0240**	**0.0000**	**1,149.9556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5277	341.5277	0.0137	0.0000	341.8156
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5277**	**341.5277**	**0.0137**	**0.0000**	**341.8156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2196	1.2512	3.5003	7.7000e-003	0.2140	0.0276	0.2415	0.0614	0.0254	0.0868	0.0000	653.6581	653.6581	4.6900e-003	0.0000	653.7565
Worker	0.1146	0.1526	1.5768	8.5800e-003	0.6570	5.9900e-003	0.6630	0.1748	5.5600e-003	0.1803	0.0000	495.7927	495.7927	0.0194	0.0000	496.1991
Total	**0.3342**	**1.4037**	**5.0772**	**0.0163**	**0.8709**	**0.0336**	**0.9045**	**0.2362**	**0.0309**	**0.2671**	**0.0000**	**1,149.4507**	**1,149.4507**	**0.0240**	**0.0000**	**1,149.9556**

3.4 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.1708	1.0372	2.1132	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	342.8367	342.8367	0.0138	0.0000	343.1257
Total	**0.1708**	**1.0372**	**2.1132**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**342.8367**	**342.8367**	**0.0138**	**0.0000**	**343.1257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2184	1.2520	3.4820	7.7400e-003	0.2148	0.0277	0.2425	0.0616	0.0255	0.0872	0.0000	656.6520	656.6520	4.7100e-003	0.0000	656.7510
Worker	0.1102	0.1483	1.5422	8.6100e-003	0.6595	6.0200e-003	0.6655	0.1754	5.5800e-003	0.1810	0.0000	495.4428	495.4428	0.0191	0.0000	495.8435
Total	**0.3286**	**1.4003**	**5.0241**	**0.0164**	**0.8743**	**0.0338**	**0.9081**	**0.2371**	**0.0311**	**0.2682**	**0.0000**	**1,152.0948**	**1,152.0948**	**0.0238**	**0.0000**	**1,152.5945**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0372	2.1132	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	342.8363	342.8363	0.0138	0.0000	343.1252
Total	**0.1708**	**1.0372**	**2.1132**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**342.8363**	**342.8363**	**0.0138**	**0.0000**	**343.1252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2184	1.2520	3.4820	7.7400e-003	0.2148	0.0277	0.2425	0.0616	0.0255	0.0872	0.0000	656.6520	656.6520	4.7100e-003	0.0000	656.7510
Worker	0.1102	0.1483	1.5422	8.6100e-003	0.6595	6.0200e-003	0.6655	0.1754	5.5800e-003	0.1810	0.0000	495.4428	495.4428	0.0191	0.0000	495.8435
Total	**0.3286**	**1.4003**	**5.0241**	**0.0164**	**0.8743**	**0.0338**	**0.9081**	**0.2371**	**0.0311**	**0.2682**	**0.0000**	**1,152.0948**	**1,152.0948**	**0.0238**	**0.0000**	**1,152.5945**

3.4 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1695	1.0293	2.0971	4.0100e-003		0.0192	0.0192		0.0192	0.0192	0.0000	340.2196	340.2196	0.0137	0.0000	340.5064
Total	**0.1695**	**1.0293**	**2.0971**	**4.0100e-003**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**340.2196**	**340.2196**	**0.0137**	**0.0000**	**340.5064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2133	1.2361	3.4309	7.6800e-003	0.2132	0.0276	0.2407	0.0612	0.0254	0.0865	0.0000	651.8640	651.8640	4.6800e-003	0.0000	651.9623
Worker	0.1053	0.1432	1.4968	8.5400e-003	0.6545	5.9700e-003	0.6604	0.1741	5.5400e-003	0.1796	0.0000	489.8034	489.8034	0.0186	0.0000	490.1948
Total	**0.3186**	**1.3793**	**4.9277**	**0.0162**	**0.8677**	**0.0335**	**0.9012**	**0.2353**	**0.0309**	**0.2662**	**0.0000**	**1,141.6673**	**1,141.6673**	**0.0233**	**0.0000**	**1,142.1571**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1695	1.0293	2.0971	4.0100e-003		0.0192	0.0192		0.0192	0.0192	0.0000	340.2192	340.2192	0.0137	0.0000	340.5060
Total	**0.1695**	**1.0293**	**2.0971**	**4.0100e-003**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**340.2192**	**340.2192**	**0.0137**	**0.0000**	**340.5060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2133	1.2361	3.4309	7.6800e-003	0.2132	0.0276	0.2407	0.0612	0.0254	0.0865	0.0000	651.8640	651.8640	4.6800e-003	0.0000	651.9623
Worker	0.1053	0.1432	1.4968	8.5400e-003	0.6545	5.9700e-003	0.6604	0.1741	5.5400e-003	0.1796	0.0000	489.8034	489.8034	0.0186	0.0000	490.1948

Total	**0.3186**	**1.3793**	**4.9277**	**0.0162**	**0.8677**	**0.0335**	**0.9012**	**0.2353**	**0.0309**	**0.2662**	**0.0000**	**1,141.6673**	**1,141.6673**	**0.0233**	**0.0000**	**1,142.1571**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0548	0.3326	0.6775	1.2900e-003		6.2000e-003	6.2000e-003		6.2000e-003	6.2000e-003	0.0000	109.9171	109.9171	4.4100e-003	0.0000	110.0098
Total	**0.0548**	**0.3326**	**0.6775**	**1.2900e-003**		**6.2000e-003**	**6.2000e-003**		**6.2000e-003**	**6.2000e-003**	**0.0000**	**109.9171**	**109.9171**	**4.4100e-003**	**0.0000**	**110.0098**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0683	0.3980	1.1004	2.4800e-003	0.0689	8.9100e-003	0.0778	0.0198	8.2000e-003	0.0280	0.0000	210.7300	210.7300	1.5100e-003	0.0000	210.7618
Worker	0.0329	0.0452	0.4731	2.7600e-003	0.2114	1.9300e-003	0.2134	0.0563	1.7900e-003	0.0580	0.0000	157.7354	157.7354	5.9300e-003	0.0000	157.8599
Total	**0.1012**	**0.4431**	**1.5735**	**5.2400e-003**	**0.2803**	**0.0108**	**0.2912**	**0.0760**	**9.9900e-003**	**0.0860**	**0.0000**	**368.4653**	**368.4653**	**7.4400e-003**	**0.0000**	**368.6217**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0548	0.3326	0.6775	1.2900e-003		6.2000e-003	6.2000e-003		6.2000e-003	6.2000e-003	0.0000	109.9170	109.9170	4.4100e-003	0.0000	110.0096
Total	**0.0548**	**0.3326**	**0.6775**	**1.2900e-003**		**6.2000e-003**	**6.2000e-003**		**6.2000e-003**	**6.2000e-003**	**0.0000**	**109.9170**	**109.9170**	**4.4100e-003**	**0.0000**	**110.0096**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0683	0.3980	1.1004	2.4800e-003	0.0689	8.9100e-003	0.0778	0.0198	8.2000e-003	0.0280	0.0000	210.7300	210.7300	1.5100e-003	0.0000	210.7618
Worker	0.0329	0.0452	0.4731	2.7600e-003	0.2114	1.9300e-003	0.2134	0.0563	1.7900e-003	0.0580	0.0000	157.7354	157.7354	5.9300e-003	0.0000	157.8599
Total	**0.1012**	**0.4431**	**1.5735**	**5.2400e-003**	**0.2803**	**0.0108**	**0.2912**	**0.0760**	**9.9900e-003**	**0.0860**	**0.0000**	**368.4653**	**368.4653**	**7.4400e-003**	**0.0000**	**368.6217**

3.5 Paving - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0589	0.3036	0.6751	1.1900e-003		0.0141	0.0141		0.0141	0.0141	0.0000	102.6021	102.6021	4.8100e-003	0.0000	102.7031
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0589**	**0.3036**	**0.6751**	**1.1900e-003**		**0.0141**	**0.0141**		**0.0141**	**0.0141**	**0.0000**	**102.6021**	**102.6021**	**4.8100e-003**	**0.0000**	**102.7031**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	1.2600e-003	0.0132	8.0000e-005	5.9200e-003	5.0000e-005	5.9700e-003	1.5700e-003	5.0000e-005	1.6200e-003	0.0000	4.4154	4.4154	1.7000e-004	0.0000	4.4189
Total	**9.2000e-004**	**1.2600e-003**	**0.0132**	**8.0000e-005**	**5.9200e-003**	**5.0000e-005**	**5.9700e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**4.4154**	**4.4154**	**1.7000e-004**	**0.0000**	**4.4189**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0589	0.3036	0.6751	1.1900e-003		0.0141	0.0141		0.0141	0.0141	0.0000	102.6019	102.6019	4.8100e-003	0.0000	102.7029
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0589**	**0.3036**	**0.6751**	**1.1900e-003**		**0.0141**	**0.0141**		**0.0141**	**0.0141**	**0.0000**	**102.6019**	**102.6019**	**4.8100e-003**	**0.0000**	**102.7029**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	1.2600e-003	0.0132	8.0000e-005	5.9200e-003	5.0000e-005	5.9700e-003	1.5700e-003	5.0000e-005	1.6200e-003	0.0000	4.4154	4.4154	1.7000e-004	0.0000	4.4189
Total	**9.2000e-004**	**1.2600e-003**	**0.0132**	**8.0000e-005**	**5.9200e-003**	**5.0000e-005**	**5.9700e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**4.4154**	**4.4154**	**1.7000e-004**	**0.0000**	**4.4189**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	8.1183					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6900e-003	0.0373	0.0782	1.3000e-004		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	11.1067	11.1067	4.5000e-004	0.0000	11.1161
Total	**8.1240**	**0.0373**	**0.0782**	**1.3000e-004**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**11.1067**	**11.1067**	**4.5000e-004**	**0.0000**	**11.1161**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8100e-003	9.3600e-003	0.0980	5.7000e-004	0.0438	4.0000e-004	0.0442	0.0117	3.7000e-004	0.0120	0.0000	32.6738	32.6738	1.2300e-003	0.0000	32.6996
Total	**6.8100e-003**	**9.3600e-003**	**0.0980**	**5.7000e-004**	**0.0438**	**4.0000e-004**	**0.0442**	**0.0117**	**3.7000e-004**	**0.0120**	**0.0000**	**32.6738**	**32.6738**	**1.2300e-003**	**0.0000**	**32.6996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	8.1183					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6900e-003	0.0373	0.0782	1.3000e-004		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	11.1066	11.1066	4.5000e-004	0.0000	11.1161
Total	**8.1240**	**0.0373**	**0.0782**	**1.3000e-004**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**11.1066**	**11.1066**	**4.5000e-004**	**0.0000**	**11.1161**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8100e-003	9.3600e-003	0.0980	5.7000e-004	0.0438	4.0000e-004	0.0442	0.0117	3.7000e-004	0.0120	0.0000	32.6738	32.6738	1.2300e-003	0.0000	32.6996

Total	6.8100e-003	9.3600e-003	0.0980	5.7000e-004	0.0438	4.0000e-004	0.0442	0.0117	3.7000e-004	0.0120	0.0000	32.6738	32.6738	1.2300e-003	0.0000	32.6996

UCSF Mission Bay Operational 2035

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	793.50	1000sqft	5.00	793,500.00	0
Medical Office Building	124.50	1000sqft	0.46	124,500.00	0
Research & Development	323.00	1000sqft	1.43	323,000.00	0
Research & Development	232.00	1000sqft	1.12	232,000.00	0
Research & Development	377.40	1000sqft	2.75	377,400.00	0
Research & Development	193.00	1000sqft	0.80	193,000.00	0
Day-Care Center	18.00	1000sqft	0.00	18,000.00	0
Enclosed Parking with Elevator	1,600.00	Space	1.60	640,000.00	0
Enclosed Parking with Elevator	626.00	Space	0.00	250,400.00	0
City Park	3.21	Acre	3.21	139,827.60	0
Apartments Mid Rise	523.00	Dwelling Unit	2.89	400,200.00	913
Research & Development	275.00	1000sqft	1.23	275,000.00	0
Enclosed Parking with Elevator	500.00	Space	1.23	200,000.00	0
Research & Development	225.00	1000sqft	1.23	225,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This run operational only. Adjust GHG emission factor to match PG&E estimate fo latest predicted year (2020)

Land Use - Adjust square feet of residential to match PD. Day Care acreage assumed in Block 15 Residential. Smaller parking garage acreage assumed in value for hospital less 0.5 acres for existing garage

Construction Phase - This run is operational only. Ignore construction inputs and emissions as all land uses in the LRDP are phased over a 20-year period.

Vehicle Trips - Adjust trip rates to match trip generation ofthe travel demand analysis.

Woodstoves - Assumes no fireplaces or woodstoves in housing complex.

Energy Use - Energy Use is default

Energy Mitigation -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblFireplaces	NumberGas	287.65	0.00
tblFireplaces	NumberNoFireplace	162.13	523.00
tblFireplaces	NumberWood	73.22	0.00
tblLandUse	LandUseSquareFeet	523,000.00	400,200.00
tblLandUse	LotAcreage	18.22	5.00
tblLandUse	LotAcreage	2.86	0.46
tblLandUse	LotAcreage	4.43	0.80
tblLandUse	LotAcreage	5.33	1.12
tblLandUse	LotAcreage	7.42	1.43
tblLandUse	LotAcreage	8.66	2.75
tblLandUse	LotAcreage	0.41	0.00
tblLandUse	LotAcreage	14.40	1.60

tblLandUse	LotAcreage	5.63	0.00
tblLandUse	LotAcreage	13.76	2.89
tblLandUse	LotAcreage	6.31	1.23
tblLandUse	LotAcreage	4.50	1.23
tblLandUse	LotAcreage	5.17	1.23
tblLandUse	Population	1,496.00	913.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	1.16
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	6.21	1.08
tblVehicleTrips	ST_TR	10.18	2.76
tblVehicleTrips	ST_TR	8.96	1.11
tblVehicleTrips	ST_TR	1.90	1.05
tblVehicleTrips	SU_TR	6.07	0.98
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	5.83	1.01
tblVehicleTrips	SU_TR	8.91	2.41
tblVehicleTrips	SU_TR	1.55	0.19
tblVehicleTrips	SU_TR	1.11	0.61
tblVehicleTrips	WD_TR	6.59	1.07
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	79.26	13.78
tblVehicleTrips	WD_TR	16.50	4.47
tblVehicleTrips	WD_TR	36.13	4.47
tblVehicleTrips	WD_TR	8.11	4.47
tblWoodstoves	NumberCatalytic	2.62	0.00
tblWoodstoves	NumberNoncatalytic	2.62	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	18.7501	0.0451	3.9180	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4379	6.4379	6.2800e-003	0.0000	6.5698
Energy	0.6980	6.3318	5.2303	0.0381		0.4823	0.4823		0.4823	0.4823	0.0000	11,881.9394	11,881.9394	0.6298	0.2296	11,966.3280
Mobile	3.1967	5.5561	29.3932	0.1311	9.1054	0.1490	9.2544	2.4676	0.1377	2.6052	0.0000	8,158.3448	8,158.3448	0.2399	0.0000	8,163.3835
Waste						0.0000	0.0000		0.0000	0.0000	2,091.2494	0.0000	2,091.2494	123.5893	0.0000	4,686.6248
Water						0.0000	0.0000		0.0000	0.0000	301.1494	698.3085	999.4580	31.0008	0.7448	1,881.3602
Total	**22.6448**	**11.9330**	**38.5415**	**0.1693**	**9.1054**	**0.6529**	**9.7583**	**2.4676**	**0.6416**	**3.1092**	**2,392.3989**	**20,745.0306**	**23,137.4294**	**155.4661**	**0.9744**	**26,704.2664**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	18.7501	0.0451	3.9180	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4379	6.4379	6.2800e-003	0.0000	6.5698
Energy	0.5569	5.0518	4.1731	0.0304		0.3848	0.3848		0.3848	0.3848	0.0000	10,054.9659	10,054.9659	0.5600	0.1951	10,127.1904
Mobile	3.1967	5.5561	29.3932	0.1311	9.1054	0.1490	9.2544	2.4676	0.1377	2.6052	0.0000	8,158.3448	8,158.3448	0.2399	0.0000	8,163.3835
Waste						0.0000	0.0000		0.0000	0.0000	2,091.2494	0.0000	2,091.2494	123.5893	0.0000	4,686.6248
Water						0.0000	0.0000		0.0000	0.0000	301.1494	698.3085	999.4580	30.9951	0.7436	1,880.8798

Total	**22.5037**	**10.6530**	**37.4843**	**0.1616**	**9.1054**	**0.5554**	**9.6608**	**2.4676**	**0.5441**	**3.0117**	**2,392.3989**	**18,918.0571**	**21,310.4559**	**155.3906**	**0.9387**	**24,864.6483**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.62**	**10.73**	**2.74**	**4.54**	**0.00**	**14.93**	**1.00**	**0.00**	**15.19**	**3.14**	**0.00**	**8.81**	**7.90**	**0.05**	**3.66**	**6.89**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	3.1967	5.5561	29.3932	0.1311	9.1054	0.1490	9.2544	2.4676	0.1377	2.6052	0.0000	8,158.3448	8,158.3448	0.2399	0.0000	8,163.3835
Mitigated	3.1967	5.5561	29.3932	0.1311	9.1054	0.1490	9.2544	2.4676	0.1377	2.6052	0.0000	8,158.3448	8,158.3448	0.2399	0.0000	8,163.3835

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	558.04	606.68	512.54	1,246,753	1,246,753
City Park	0.00	0.00	0.00		
Day-Care Center	248.04	19.44	18.18	214,971	214,971
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hospital	3,546.95	2,190.06	1912.34	7,856,486	7,856,486
Medical Office Building	556.52	138.20	23.66	823,282	823,282
Research & Development	1,443.81	339.15	197.03	2,776,646	2,776,646
Research & Development	1,037.04	243.60	141.52	1,994,371	1,994,371

Research & Development	1,686.98	396.27	230.21	3,244,292	3,244,292
Research & Development	862.71	202.65	117.73	1,659,111	1,659,111
Research & Development	1,229.25	288.75	167.75	2,364,018	2,364,018
Research & Development	1,005.75	236.25	137.25	1,934,196	1,934,196
Total	12,175.08	4,661.05	3,458.20	24,114,126	24,114,126

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.629311	0.058303	0.147059	0.076368	0.026204	0.003252	0.029759	0.004830	0.003411	0.010105	0.010495	0.000440	0.000462

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.5569	5.0518	4.1731	0.0304		0.3848	0.3848		0.3848	0.3848	0.0000	5,511.3460	5,511.3460	0.1056	0.1010	5,544.8871
NaturalGas Unmitigated	0.6980	6.3318	5.2303	0.0381		0.4823	0.4823		0.4823	0.4823	0.0000	6,907.7351	6,907.7351	0.1324	0.1266	6,949.7744
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4,543.6199	4,543.6199	0.4544	0.0940	4,582.3034
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4,974.2043	4,974.2043	0.4974	0.1029	5,016.5536

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.63047e+006	0.0250	0.2134	0.0908	1.3600e-003		0.0173	0.0173		0.0173	0.0173	0.0000	247.0995	247.0995	4.7400e-003	4.5300e-003	248.6033
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	310500	1.6700e-003	0.0152	0.0128	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.5695	16.5695	3.2000e-004	3.0000e-004	16.6703
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hospital	8.02387e+007	0.4327	3.9333	3.3040	0.0236		0.2989	0.2989		0.2989	0.2989	0.0000	4,281.8437	4,281.8437	0.0821	0.0785	4,307.9023
Medical Office Building	2.52611e+006	0.0136	0.1238	0.1040	7.4000e-004		9.4100e-003	9.4100e-003		9.4100e-003	9.4100e-003	0.0000	134.8026	134.8026	2.5800e-003	2.4700e-003	135.6230
Research & Development	4.95624e+006	0.0267	0.2430	0.2041	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	264.4838	264.4838	5.0700e-003	4.8500e-003	266.0935
Research & Development	5.778e+006	0.0312	0.2832	0.2379	1.7000e-003		0.0215	0.0215		0.0215	0.0215	0.0000	308.3361	308.3361	5.9100e-003	5.6500e-003	310.2126

Research & Development	5.95776e+006	0.0321	0.2921	0.2453	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	317.9288	317.9288	6.0900e-003	5.8300e-003	319.8636
Research & Development	7.062e+006	0.0381	0.3462	0.2908	2.0800e-003		0.0263	0.0263		0.0263	0.0263	0.0000	376.8552	376.8552	7.2200e-003	6.9100e-003	379.1487
Research & Development	8.29464e+006	0.0447	0.4066	0.3415	2.4400e-003		0.0309	0.0309		0.0309	0.0309	0.0000	442.6336	442.6336	8.4800e-003	8.1100e-003	445.3274
Research & Development	9.69163e+006	0.0523	0.4751	0.3991	2.8500e-003		0.0361	0.0361		0.0361	0.0361	0.0000	517.1824	517.1824	9.9100e-003	9.4800e-003	520.3299
Total		**0.6980**	**6.3318**	**5.2303**	**0.0381**		**0.4823**	**0.4823**		**0.4823**	**0.4823**	**0.0000**	**6,907.7351**	**6,907.7351**	**0.1324**	**0.1266**	**6,949.7744**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	240165	1.3000e-003	0.0118	9.8900e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.8161	12.8161	2.5000e-004	2.3000e-004	12.8941
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hospital	6.33134e+007	0.3414	3.1036	2.6070	0.0186		0.2359	0.2359		0.2359	0.2359	0.0000	3,378.6423	3,378.6423	0.0648	0.0619	3,399.2041
Medical Office Building	1.92602e+006	0.0104	0.0944	0.0793	5.7000e-004		7.1800e-003	7.1800e-003		7.1800e-003	7.1800e-003	0.0000	102.7795	102.7795	1.9700e-003	1.8800e-003	103.4050
Apartments Mid Rise	3.69016e+006	0.0199	0.1700	0.0724	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	196.9209	196.9209	3.7700e-003	3.6100e-003	198.1193
Research & Development	4.05011e+006	0.0218	0.1985	0.1668	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.1290	216.1290	4.1400e-003	3.9600e-003	217.4444
Research & Development	4.72163e+006	0.0255	0.2315	0.1944	1.3900e-003		0.0176	0.0176		0.0176	0.0176	0.0000	251.9639	251.9639	4.8300e-003	4.6200e-003	253.4973
Research & Development	4.86852e+006	0.0263	0.2387	0.2005	1.4300e-003		0.0181	0.0181		0.0181	0.0181	0.0000	259.8028	259.8028	4.9800e-003	4.7600e-003	261.3839
Research & Development	5.77088e+006	0.0311	0.2829	0.2376	1.7000e-003		0.0215	0.0215		0.0215	0.0215	0.0000	307.9559	307.9559	5.9000e-003	5.6500e-003	309.8300
Research & Development	6.77816e+006	0.0366	0.3323	0.2791	1.9900e-003		0.0253	0.0253		0.0253	0.0253	0.0000	361.7082	361.7082	6.9300e-003	6.6300e-003	363.9095
Research & Development	7.91974e+006	0.0427	0.3882	0.3261	2.3300e-003		0.0295	0.0295		0.0295	0.0295	0.0000	422.6274	422.6274	8.1000e-003	7.7500e-003	425.1995

Total	**1.033E+08**	**0.5569**	**5.0518**	**4.1731**	**0.0304**		**0.3848**	**0.3848**		**0.3848**	**0.3848**	**0.0000**	**5,511.3460**	**5,511.3460**	**0.1056**	**0.1010**	**5,544.8871**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.89083e+006	248.7229	0.0249	5.1500e-003	250.8405
City Park	0	0.0000	0.0000	0.0000	0.0000
Day-Care Center	89460	11.7677	1.1800e-003	2.4000e-004	11.8679
Enclosed Parking with Elevator	1.348e+006	177.3183	0.0177	3.6700e-003	178.8280
Enclosed Parking with Elevator	1.6877e+006	222.0026	0.0222	4.5900e-003	223.8926
Enclosed Parking with Elevator	4.3136e+006	567.4187	0.0567	0.0117	572.2495
Hospital	1.33149e+007	1,751.4697	0.1752	0.0362	1,766.3813
Medical Office Building	1.72806e+006	227.3121	0.0227	4.7000e-003	229.2474
Research & Development	1.59611e+006	209.9552	0.0210	4.3400e-003	211.7427
Research & Development	1.86075e+006	244.7664	0.0245	5.0600e-003	246.8503
Research & Development	1.91864e+006	252.3813	0.0252	5.2200e-003	254.5301
Research & Development	2.27425e+006	299.1589	0.0299	6.1900e-003	301.7059
Research & Development	2.67121e+006	351.3757	0.0351	7.2700e-003	354.3673
Research & Development	3.1211e+006	410.5548	0.0411	8.4900e-003	414.0502
Total		**4,974.2043**	**0.4974**	**0.1029**	**5,016.5537**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.79202e+006	235.7250	0.0236	4.8800e-003	237.7319
City Park	0	0.0000	0.0000	0.0000	0.0000
Day-Care Center	85815	11.2883	1.1300e-003	2.3000e-004	11.3844
Enclosed Parking with Elevator	1.152e+006	151.5361	0.0152	3.1400e-003	152.8263
Enclosed Parking with Elevator	1.4423e+006	189.7233	0.0190	3.9300e-003	191.3385
Enclosed Parking with Elevator	3.6864e+006	484.9156	0.0485	0.0100	489.0441
Hospital	1.19699e+007	1,574.5483	0.1575	0.0326	1,587.9537
Medical Office Building	1.57212e+006	206.8000	0.0207	4.2800e-003	208.5606
Research & Development	1.5247e+006	200.5618	0.0201	4.1500e-003	202.2693
Research & Development	1.7775e+006	233.8155	0.0234	4.8400e-003	235.8062
Research & Development	1.8328e+006	241.0898	0.0241	4.9900e-003	243.1424
Research & Development	2.1725e+006	285.7745	0.0286	5.9100e-003	288.2076
Research & Development	2.5517e+006	335.6552	0.0336	6.9400e-003	338.5129
Research & Development	2.98146e+006	392.1866	0.0392	8.1100e-003	395.5256
Total	**3.45E+07**	**4,543.6199**	**0.4544**	**0.0940**	**4,582.3034**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	18.7501	0.0451	3.9180	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4379	6.4379	6.2800e-003	0.0000	6.5698
Mitigated	18.7501	0.0451	3.9180	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4379	6.4379	6.2800e-003	0.0000	6.5698

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.2588					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	16.3712					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1201	0.0451	3.9180	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4379	6.4379	6.2800e-003	0.0000	6.5698
Total	**18.7501**	**0.0451**	**3.9180**	**2.1000e-004**		**0.0217**	**0.0217**		**0.0217**	**0.0217**	**0.0000**	**6.4379**	**6.4379**	**6.2800e-003**	**0.0000**	**6.5698**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.2588					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	16.3712					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1201	0.0451	3.9180	2.1000e-004		0.0217	0.0217		0.0217	0.0217	0.0000	6.4379	6.4379	6.2800e-003	0.0000	6.5698
Total	**18.7501**	**0.0451**	**3.9180**	**2.1000e-004**		**0.0217**	**0.0217**		**0.0217**	**0.0217**	**0.0000**	**6.4379**	**6.4379**	**6.2800e-003**	**0.0000**	**6.5698**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	999.4580	31.0008	0.7448	1,881.3602
Mitigated	999.4580	30.9951	0.7436	1,880.8798

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			

Apartments Mid Rise	34.0756 / 21.4824		44.9551	1.1138	0.0269	76.6907
City Park	0 / 3.82466		1.7609	1.8000e-004	4.0000e-005	1.7759
Day-Care Center	0.772012 / 1.98517		1.7084	0.0253	6.2000e-004	2.4333
Enclosed Parking with Elevator	0 / 0		0.0000	0.0000	0.0000	0.0000
Hospital	99.5688 / 18.9655		111.1906	3.2524	0.0783	203.7504
Medical Office Building	15.6223 / 2.97568		17.4458	0.5103	0.0123	31.9684
Research & Development	799.199 / 0		822.3973	26.0988	0.6267	1,564.7416
Total			**999.4580**	**31.0008**	**0.7448**	**1,881.3602**

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	34.0756 / 21.4824		44.9551	1.1136	0.0269	76.6735
City Park	0 / 3.82466		1.7609	1.8000e-004	4.0000e-005	1.7759
Day-Care Center	0.772012 / 1.98517		1.7084	0.0253	6.2000e-004	2.4329
Enclosed Parking with Elevator	0 / 0		0.0000	0.0000	0.0000	0.0000
Hospital	99.5688 / 18.9655		111.1906	3.2518	0.0781	203.7000
Medical Office Building	15.6223 / 2.97568		17.4458	0.5102	0.0123	31.9605
Research & Development	799.199 / 0		822.3973	26.0941	0.6257	1,564.3371
Total			**999.4580**	**30.9951**	**0.7436**	**1,880.8798**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2,091.2494	123.5893	0.0000	4,686.6248
Unmitigated	2,091.2494	123.5893	0.0000	4,686.6248

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	240.58		48.8356	2.8861	0.0000	109.4437
City Park	0.28		0.0568	3.3600e-003	0.0000	0.1274
Day-Care Center	23.4		4.7500	0.2807	0.0000	10.6450
Enclosed Parking with Elevator	0		0.0000	0.0000	0.0000	0.0000
Hospital	8569.8		1,739.5920	102.8069	0.0000	3,898.5377
Medical Office Building	1344.6		272.9417	16.1304	0.0000	611.6798
Research & Development	123.52		25.0734	1.4818	0.0000	56.1912

Total			**2,091.2494**	**123.5893**	**0.0000**	**4,686.6248**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	240.58		48.8356	2.8861	0.0000	109.4437
City Park	0.28		0.0568	3.3600e-003	0.0000	0.1274
Day-Care Center	23.4		4.7500	0.2807	0.0000	10.6450
Enclosed Parking with Elevator	0		0.0000	0.0000	0.0000	0.0000
Hospital	8569.8		1,739.5920	102.8069	0.0000	3,898.5377
Medical Office Building	1344.6		272.9417	16.1304	0.0000	611.6798
Research & Development	123.52		25.0734	1.4818	0.0000	56.1912
Total			**2,091.2494**	**123.5893**	**0.0000**	**4,686.6248**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Mission Bay

Parse Out of Trip Generation by Land Use

Residential Land use: The only residential use is Block 15. Used Mission Bay Pages 11 and 17 of Adavant pdf to determine by subtraction (2035-2015)

2015 daily Residential trips =	901
2035 daily Residential trips =	1459
Block 15 residential trips =	558

Child Care Land Use: Same as residential

2015 day care trips =	187
2035 Day care trips =	435
Block 15 Day care trips =	248

Other Land Uses:

		GSF		%GSF
Block 23:	Reseach Land use	232200	SF	9%
Cancer Outpatient: Medical Land Use		124500	SF	5%
Block 25:	Reseach Land use	323000	SF	13%
Block 16:	Research w/CPU	377400	SF	15%
Block 33:	Reseach Land use	275,000		11%
Block 34:	Reseach Land use	225,000		9%
Block 18:	Research/office	193000	SF	8%
MC Phase 2	Hospital	793500	SF	31%
Total:		2543600	SF	100%

2015 daily trips Non residential/child care uses from Page Mission Bay-11 of Adavant Travel Demand

Staff	3480
Patients & Visitors	2054
Other Visitors	1052
Total	6586

2035 daily trips Non residential/child care uses from Updated 041114 travel demand

Staff	11087
Patients & Visitors	4633
Other Visitors	2234
Total	17954

LRDP increase in vehicle trips from non residential/child care uses = 11368

Allocate these trips to each development project using percentage of SF

	Daily trips
Block 23:	1037.76
Cancer Outpatient: Medical Land Use	556.42
Block 25:	1443.57
Block 16:	1686.70
Block 33:	1229.05
Block 34:	1005.58
Block 18:	862.57
MC Phase 2	3546.35

Weekend Vehicle Trip Calculations - UCSF Mission Bay 2035

Per Adavant Project Trip Generation for weekday =

				Size		Rate
Residential	558	trips		523	units	1.067
Child Care	248	trips		18	ksf	13.778
Block 23	1038	trips		232.2	ksf	4.470
Cancer Outpatient	556	trips		124.5	ksf	4.466
Block 25:	1444	trips		323	ksf	4.471
Block 16:	1687	trips		377.4	ksf	4.470
Block 33:	1229	trips		275	ksf	4.469
Block 34:	1006	trips		225	ksf	4.471
Block 18:	863	trips		193	ksf	4.472
MC Phase 2	3546	trips		793.5	ksf	4.469
Total =	12175	trips	This is weekday			

CalEEMod Weekday and Weekend default rates from ITE =

	Weekday	Saturday	Sunday
Residential	6.59	7.16	6.07
Child Care	79.26	6.21	5.83
Block 23	8.11	1.9	1.11
Cancer Outpatient	36.13	8.96	1.55
Block 25:	8.11	1.9	1.11
Block 16:	8.11	1.9	1.11
Block 33:	8.11	1.9	1.11
Block 34:	8.11	1.9	1.11
Block 18:	8.11	1.9	1.11
MC Phase 2	16.5	10.18	8.91

Calculate weekend trips based on Project specific weekday Trip demand from Adavant

	Saturday		Rate		Sunday		Rate	
Residential	606	trips	1.159205	trip/unit	514	trips	0.982734	trip/unit
Child Care	19	trips	1.079485	trip/ksf	18	trips	1.01343	trip/ksf
Block 23	243	trips	1.047292	trip/ksf	142	trips	0.611839	trip/ksf
Cancer Outpatient	138	trips	1.107504	trip/ksf	24	trips	0.191588	trip/ksf
Block 25:	338		1.047363	trip/ksf	198	trips	0.611881	trip/ksf
Block 16:	395		1.047239	trip/ksf	231	trips	0.611808	trip/ksf
Block 33:	288		1.047013	trip/ksf	168	trips	0.611676	trip/ksf
Block 34:	236		1.047486	trip/ksf	138	trips	0.611952	trip/ksf
Block 18:	202		1.047578	trip/ksf	118	trips	0.612006	trip/ksf
MC Phase 2	2188		2.75712	trip/ksf	1915	trips	2.413157	trip/ksf
	4654	trips			3466	trips		

Mitigated Operational Air Quality Emissions with TDM

Mission Bay (From CalEEMod)

	ROG
Area	103.4169
Energy	3.0515
Mobile	23.1383
Total	**129.6066**

	NOx
Area	0.5009
Energy	27.6813
Mobile	39.2023
Total	**67.3845**

	PM10
Area	0.2412
Energy	2.1083
Mobile	65.3831
Total	**67.7325**

	PM2.5
Area	0.2412
Energy	2.1083
Mobile	18.3224
Total	**20.6719**

Mobile emission reduction from TDM: 12 percent

	ROG	Nox	PM10	PM2.5
Area	103.4169	0.5009	0.2412	0.2412
Energy	3.0515	27.6813	2.1083	2.1083
Mobile	20.36	34.50	57.54	16.12
Total	126.83	62.68	59.89	18.47

Mitigated Operational Air Quality Emissions with TDM

Mount Zion (From CalEEMod)

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Mobile Sources[a]	3.42	6.23	5.55	1.56
Area Sources[a]	6.24	<0.001	<0.001	<0.001
Natural gas combustion	0.15	1.4	0.11	0.11
Total	**9.82**	**7.64**	**5.66**	**1.67**

Mobile emission reduction from TDM: 12 percent

	ROG	Nox	PM10	PM2.5
Mitigated Mobile	3.01	5.48	4.88	1.37
Mitigated Total	9.41	6.89	4.99	1.48

UCSF Zion

Weekend Vehicle Trip Calculations - UCSF Zion

Per Adavant Project Trip Generation for weekday =

			Size		Rate
New Medical office bldg.	1292	trips	257.3	ksf	5.021

Total =	1292	trips	This is weekday

CalEEMod Weekday and Weekend default rates from ITE =

	Weekday	Saturday	Sunday
New Medical office bldg.	36.13	8.96	1.55

Calculate weekend trips based on Project specific weekday Trip demand from Adavant

	Saturday		Rate		Sunday		Rate	
New Medical office bldg.	320	trips	1.245268	trip/unit	55	trips	0.21542	trip/unit

UCSF Mount Zion Construction - Demolition Losses

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	85.00	1000sqft	0.83	85,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This run to estimate nonmobile operational losses from demolition of three buidings. Ignore construction and monile source omission this run.

Land Use - Adjust acreage to match GoogleEarth estimates.

Construction Phase - Building construction phase for rennovation of hospital. Assume no off-road equipment but construction worker and vendor trips.

Off-road Equipment - Assume no offroad equipment with hospital rennovation.

Off-road Equipment -

Trips and VMT -

Demolition -

Vehicle Trips - The run costruction only. Ignore operational input and emissions htis run.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	127500	97701
tblLandUse	LotAcreage	1.95	0.83

tblTripsAndVMT	VendorTripNumber	14.00	11.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3695	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Energy	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	435.2512	435.2512	0.0173	4.9000e-003	437.1326
Mobile	1.6194	3.2017	14.8038	0.0250	1.7168	0.0512	1.7681	0.4655	0.0470	0.5126	0.0000	2,081.8041	2,081.8041	0.1029	0.0000	2,083.9639
Waste						0.0000	0.0000		0.0000	0.0000	186.3457	0.0000	186.3457	11.0127	0.0000	417.6127
Water						0.0000	0.0000		0.0000	0.0000	3.3838	18.8579	22.2417	0.3484	8.3800e-003	32.1567
Total	**1.9982**	**3.2862**	**14.8756**	**0.0255**	**1.7168**	**0.0577**	**1.7745**	**0.4655**	**0.0535**	**0.5190**	**189.7295**	**2,535.9148**	**2,725.6443**	**11.4813**	**0.0133**	**2,970.8676**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3695	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Energy	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	435.2512	435.2512	0.0173	4.9000e-003	437.1326

Mobile	1.6194	3.2017	14.8038	0.0250	1.7168	0.0512	1.7681	0.4655	0.0470	0.5126	0.0000	2,081.8041	2,081.8041	0.1029	0.0000	2,083.9639
Waste						0.0000	0.0000		0.0000	0.0000	186.3457	0.0000	186.3457	11.0127	0.0000	417.6127
Water						0.0000	0.0000		0.0000	0.0000	3.3838	18.8579	22.2417	0.3483	8.3700e-003	32.1513
Total	**1.9982**	**3.2862**	**14.8756**	**0.0255**	**1.7168**	**0.0577**	**1.7745**	**0.4655**	**0.0535**	**0.5190**	**189.7295**	**2,535.9148**	**2,725.6443**	**11.4812**	**0.0133**	**2,970.8622**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.08**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6194	3.2017	14.8038	0.0250	1.7168	0.0512	1.7681	0.4655	0.0470	0.5126	0.0000	2,081.8041	2,081.8041	0.1029	0.0000	2,083.9639
Unmitigated	1.6194	3.2017	14.8038	0.0250	1.7168	0.0512	1.7681	0.4655	0.0470	0.5126	0.0000	2,081.8041	2,081.8041	0.1029	0.0000	2,083.9639

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	3,071.05	761.60	131.75	4,543,224	4,543,224
Total	3,071.05	761.60	131.75	4,543,224	4,543,224

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627577	0.058271	0.149142	0.080550	0.026862	0.003412	0.025393	0.003562	0.003105	0.011067	0.009995	0.000558	0.000506

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	343.2174	343.2174	0.0155	3.2100e-003	344.5386
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	343.2174	343.2174	0.0155	3.2100e-003	344.5386
NaturalGas Mitigated	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940
NaturalGas Unmitigated	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	1.72465e+006	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940
Total		**9.3000e-003**	**0.0845**	**0.0710**	**5.1000e-004**		**6.4300e-003**	**6.4300e-003**		**6.4300e-003**	**6.4300e-003**	**0.0000**	**92.0339**	**92.0339**	**1.7600e-003**	**1.6900e-003**	**92.5940**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	1.72465e+006	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940
Total		**9.3000e-003**	**0.0845**	**0.0710**	**5.1000e-004**		**6.4300e-003**	**6.4300e-003**		**6.4300e-003**	**6.4300e-003**	**0.0000**	**92.0339**	**92.0339**	**1.7600e-003**	**1.6900e-003**	**92.5940**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	1.1798e+006	343.2174	0.0155	3.2100e-003	344.5386
Total		**343.2174**	**0.0155**	**3.2100e-003**	**344.5386**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	1.1798e+006	343.2174	0.0155	3.2100e-003	344.5386
Total		**343.2174**	**0.0155**	**3.2100e-003**	**344.5386**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3695	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Unmitigated	0.3695	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Total	**0.3695**	**1.0000e-005**	**8.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5200e-003**	**1.5200e-003**	**0.0000**	**0.0000**	**1.6100e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Total	**0.3695**	**1.0000e-005**	**8.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5200e-003**	**1.5200e-003**	**0.0000**	**0.0000**	**1.6100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	22.2417	0.3483	8.3700e-003	32.1513
Unmitigated	22.2417	0.3484	8.3800e-003	32.1567

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	10.6658 / 2.03159	22.2417	0.3484	8.3800e-003	32.1567
Total		**22.2417**	**0.3484**	**8.3800e-003**	**32.1567**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	10.6658 / 2.03159	22.2417	0.3483	8.3700e-003	32.1513
Total		**22.2417**	**0.3483**	**8.3700e-003**	**32.1513**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	186.3457	11.0127	0.0000	417.6127
Unmitigated	186.3457	11.0127	0.0000	417.6127

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	918	186.3457	11.0127	0.0000	417.6127
Total		**186.3457**	**11.0127**	**0.0000**	**417.6127**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	918	186.3457	11.0127	0.0000	417.6127
Total		**186.3457**	**11.0127**	**0.0000**	**417.6127**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Zion Construction - Program

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	257.30	1000sqft	0.83	257,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreage to match GoogleEarth estimate.

Construction Phase -

Vehicle Trips - This run construction only. Ignore operational input and emissions this run.

Construction Off-road Equipment Mitigation - Tier 3 as mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblLandUse	LotAcreage	5.91	0.83
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	3.1110	1.0334	1.0981	1.6000e-003	0.0525	0.0577	0.1102	0.0144	0.0532	0.0676	0.0000	142.1134	142.1134	0.0198	0.0000	142.5297
Total	**3.1110**	**1.0334**	**1.0981**	**1.6000e-003**	**0.0525**	**0.0577**	**0.1102**	**0.0144**	**0.0532**	**0.0676**	**0.0000**	**142.1134**	**142.1134**	**0.0198**	**0.0000**	**142.5297**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	3.0490	0.5965	1.0794	1.6000e-003	0.0525	0.0254	0.0779	0.0144	0.0251	0.0395	0.0000	142.1134	142.1134	0.0198	0.0000	142.5297
Total	**3.0490**	**0.5965**	**1.0794**	**1.6000e-003**	**0.0525**	**0.0254**	**0.0779**	**0.0144**	**0.0251**	**0.0395**	**0.0000**	**142.1134**	**142.1134**	**0.0198**	**0.0000**	**142.5297**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.99**	**42.28**	**1.70**	**0.00**	**0.00**	**56.00**	**29.33**	**0.00**	**52.88**	**41.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/15/2015	1/15/2015	5	1	
2	Grading	Grading	1/16/2015	1/19/2015	5	2	
3	Building Construction	Building Construction	1/20/2015	6/8/2015	5	100	
4	Paving	Paving	6/9/2015	6/15/2015	5	5	
5	Architectural Coating	Architectural Coating	6/16/2015	6/22/2015	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 385,950; Non-Residential Outdoor: 128,650 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	82.00	42.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1000e-004	7.1500e-003	3.7000e-003	0.0000		4.4000e-004	4.4000e-004		4.0000e-004	4.0000e-004	0.0000	0.4466	0.4466	1.3000e-004	0.0000	0.4494
Total	**7.1000e-004**	**7.1500e-003**	**3.7000e-003**	**0.0000**	**2.7000e-004**	**4.4000e-004**	**7.1000e-004**	**3.0000e-005**	**4.0000e-004**	**4.3000e-004**	**0.0000**	**0.4466**	**0.4466**	**1.3000e-004**	**0.0000**	**0.4494**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.4000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0234	0.0234	0.0000	0.0000	0.0234
Total	**1.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0234**	**0.0234**	**0.0000**	**0.0000**	**0.0234**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	2.3300e-003	3.5000e-003	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.4466	0.4466	1.3000e-004	0.0000	0.4494
Total	**1.1000e-004**	**2.3300e-003**	**3.5000e-003**	**0.0000**	**2.7000e-004**	**1.3000e-004**	**4.0000e-004**	**3.0000e-005**	**1.3000e-004**	**1.6000e-004**	**0.0000**	**0.4466**	**0.4466**	**1.3000e-004**	**0.0000**	**0.4494**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.4000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0234	0.0234	0.0000	0.0000	0.0234
Total	**1.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0234**	**0.0234**	**0.0000**	**0.0000**	**0.0234**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4100e-003	0.0119	8.8100e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.4000e-004	8.4000e-004	0.0000	1.0892	1.0892	2.2000e-004	0.0000	1.0939
Total	**1.4100e-003**	**0.0119**	**8.8100e-003**	**1.0000e-005**	**7.5000e-004**	**8.7000e-004**	**1.6200e-003**	**4.1000e-004**	**8.4000e-004**	**1.2500e-003**	**0.0000**	**1.0892**	**1.0892**	**2.2000e-004**	**0.0000**	**1.0939**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	5.0000e-005	5.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0936	0.0936	1.0000e-005	0.0000	0.0937
Total	**4.0000e-005**	**5.0000e-005**	**5.5000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0936**	**0.0936**	**1.0000e-005**	**0.0000**	**0.0937**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	8.1200e-003	7.9000e-003	1.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	1.0892	1.0892	2.2000e-004	0.0000	1.0939
Total	**8.5000e-004**	**8.1200e-003**	**7.9000e-003**	**1.0000e-005**	**7.5000e-004**	**5.9000e-004**	**1.3400e-003**	**4.1000e-004**	**5.9000e-004**	**1.0000e-003**	**0.0000**	**1.0892**	**1.0892**	**2.2000e-004**	**0.0000**	**1.0939**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	5.0000e-005	5.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0936	0.0936	1.0000e-005	0.0000	0.0937
Total	**4.0000e-005**	**5.0000e-005**	**5.5000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0936**	**0.0936**	**1.0000e-005**	**0.0000**	**0.0937**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0727	0.7189	0.4149	5.7000e-004		0.0500	0.0500		0.0460	0.0460	0.0000	54.0547	54.0547	0.0161	0.0000	54.3936
Total	**0.0727**	**0.7189**	**0.4149**	**5.7000e-004**		**0.0500**	**0.0500**		**0.0460**	**0.0460**	**0.0000**	**54.0547**	**54.0547**	**0.0161**	**0.0000**	**54.3936**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0340	0.2372	0.4173	4.8000e-004	0.0134	3.7200e-003	0.0171	3.8400e-003	3.4100e-003	7.2600e-003	0.0000	44.1018	44.1018	3.9000e-004	0.0000	44.1100
Worker	0.0163	0.0225	0.2249	4.9000e-004	0.0372	3.6000e-004	0.0376	9.8900e-003	3.3000e-004	0.0102	0.0000	38.3898	38.3898	2.1300e-003	0.0000	38.4346
Total	**0.0503**	**0.2596**	**0.6421**	**9.7000e-004**	**0.0506**	**4.0800e-003**	**0.0547**	**0.0137**	**3.7400e-003**	**0.0175**	**0.0000**	**82.4916**	**82.4916**	**2.5200e-003**	**0.0000**	**82.5446**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0139	0.3050	0.3965	5.7000e-004		0.0192	0.0192		0.0192	0.0192	0.0000	54.0546	54.0546	0.0161	0.0000	54.3935
Total	**0.0139**	**0.3050**	**0.3965**	**5.7000e-004**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**54.0546**	**54.0546**	**0.0161**	**0.0000**	**54.3935**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0340	0.2372	0.4173	4.8000e-004	0.0134	3.7200e-003	0.0171	3.8400e-003	3.4100e-003	7.2600e-003	0.0000	44.1018	44.1018	3.9000e-004	0.0000	44.1100
Worker	0.0163	0.0225	0.2249	4.9000e-004	0.0372	3.6000e-004	0.0376	9.8900e-003	3.3000e-004	0.0102	0.0000	38.3898	38.3898	2.1300e-003	0.0000	38.4346

Total	**0.0503**	**0.2596**	**0.6421**	**9.7000e-004**	**0.0506**	**4.0800e-003**	**0.0547**	**0.0137**	**3.7400e-003**	**0.0175**	**0.0000**	**82.4916**	**82.4916**	**2.5200e-003**	**0.0000**	**82.5446**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0200e-003	0.0289	0.0184	3.0000e-005		1.8100e-003	1.8100e-003		1.6800e-003	1.6800e-003	0.0000	2.4801	2.4801	6.7000e-004	0.0000	2.4943
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0200e-003**	**0.0289**	**0.0184**	**3.0000e-005**		**1.8100e-003**	**1.8100e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**2.4801**	**2.4801**	**6.7000e-004**	**0.0000**	**2.4943**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.5000e-004	2.4700e-003	1.0000e-005	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.4214	0.4214	2.0000e-005	0.0000	0.4218
Total	**1.8000e-004**	**2.5000e-004**	**2.4700e-003**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4214**	**0.4214**	**2.0000e-005**	**0.0000**	**0.4218**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9000e-004	0.0145	0.0193	3.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	2.4801	2.4801	6.7000e-004	0.0000	2.4943
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9000e-004**	**0.0145**	**0.0193**	**3.0000e-005**		**8.3000e-004**	**8.3000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**2.4801**	**2.4801**	**6.7000e-004**	**0.0000**	**2.4943**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.5000e-004	2.4700e-003	1.0000e-005	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.4214	0.4214	2.0000e-005	0.0000	0.4218
Total	**1.8000e-004**	**2.5000e-004**	**2.4700e-003**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4214**	**0.4214**	**2.0000e-005**	**0.0000**	**0.4218**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Archit. Coating	2.9815					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	6.4300e-003	4.7500e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6401
Total	**2.9825**	**6.4300e-003**	**4.7500e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6401**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	2.2000e-004	2.1900e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3745	0.3745	2.0000e-005	0.0000	0.3750
Total	**1.6000e-004**	**2.2000e-004**	**2.1900e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3745**	**0.3745**	**2.0000e-005**	**0.0000**	**0.3750**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.9815					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	6.4300e-003	4.7500e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6401
Total	**2.9825**	**6.4300e-003**	**4.7500e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6401**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	2.2000e-004	2.1900e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3745	0.3745	2.0000e-005	0.0000	0.3750
Total	**1.6000e-004**	**2.2000e-004**	**2.1900e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3745**	**0.3745**	**2.0000e-005**	**0.0000**	**0.3750**

UCSF Zion Operational Program

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	257.30	1000sqft	5.91	257,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreage to match Google Earth estimate.

Vehicle Trips - Adjust Vehicle trips to match travel demand study.

Energy Use -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2020

tblVehicleTrips	ST_TR	8.96	1.25
tblVehicleTrips	SU_TR	1.55	0.22
tblVehicleTrips	WD_TR	36.13	5.02

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.2439	2.4000e-004	0.0264	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0563	0.0563	1.5000e-004		0.0595
Energy	0.1543	1.4023	1.1779	8.4100e-003		0.1066	0.1066		0.1066	0.1066		1,682.7130	1,682.7130	0.0323	0.0309	1,692.9537
Mobile	3.4172	6.2335	29.5058	0.0760	5.4508	0.0989	5.5497	1.4727	0.0913	1.5640		5,754.7054	5,754.7054	0.2212		5,759.3511
Total	**9.8153**	**7.6360**	**30.7102**	**0.0844**	**5.4508**	**0.2056**	**5.6564**	**1.4727**	**0.1980**	**1.6706**		**7,437.4747**	**7,437.4747**	**0.2536**	**0.0309**	**7,452.3643**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.2439	2.4000e-004	0.0264	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0563	0.0563	1.5000e-004		0.0595
Energy	0.1396	1.2690	1.0660	7.6100e-003		0.0965	0.0965		0.0965	0.0965		1,522.8179	1,522.8179	0.0292	0.0279	1,532.0855
Mobile	3.4172	6.2335	29.5058	0.0760	5.4508	0.0989	5.5497	1.4727	0.0913	1.5640		5,754.7054	5,754.7054	0.2212		5,759.3511

Total	**9.8006**	**7.5028**	**30.5983**	**0.0836**	**5.4508**	**0.1955**	**5.6462**	**1.4727**	**0.1878**	**1.6605**		**7,277.5796**	**7,277.5796**	**0.2506**	**0.0279**	**7,291.4961**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.15**	**1.75**	**0.36**	**0.95**	**0.00**	**4.92**	**0.18**	**0.00**	**5.11**	**0.61**	**0.00**	**2.15**	**2.15**	**1.21**	**9.50**	**2.16**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4172	6.2335	29.5058	0.0760	5.4508	0.0989	5.5497	1.4727	0.0913	1.5640		5,754.7054	5,754.7054	0.2212		5,759.3511
Unmitigated	3.4172	6.2335	29.5058	0.0760	5.4508	0.0989	5.5497	1.4727	0.0913	1.5640		5,754.7054	5,754.7054	0.2212		5,759.3511

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	1,291.90	320.34	55.42	1,911,192	1,911,192
Total	1,291.90	320.34	55.42	1,911,192	1,911,192

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.631289	0.058518	0.148045	0.077273	0.026007	0.003276	0.026188	0.004043	0.003129	0.010899	0.010305	0.000529	0.000500

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1396	1.2690	1.0660	7.6100e-003		0.0965	0.0965		0.0965	0.0965		1,522.8179	1,522.8179	0.0292	0.0279	1,532.0855
NaturalGas Unmitigated	0.1543	1.4023	1.1779	8.4100e-003		0.1066	0.1066		0.1066	0.1066		1,682.7130	1,682.7130	0.0323	0.0309	1,692.9537

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	14303.1	0.1543	1.4023	1.1779	8.4100e-003		0.1066	0.1066		0.1066	0.1066		1,682.7130	1,682.7130	0.0323	0.0309	1,692.9537

Total		**0.1543**	**1.4023**	**1.1779**	**8.4100e-003**		**0.1066**	**0.1066**		**0.1066**	**0.1066**		**1,682.7130**	**1,682.7130**	**0.0323**	**0.0309**	**1,692.9537**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	12.944	0.1396	1.2690	1.0660	7.6100e-003		0.0965	0.0965		0.0965	0.0965		1,522.8179	1,522.8179	0.0292	0.0279	1,532.0855
Total		**0.1396**	**1.2690**	**1.0660**	**7.6100e-003**		**0.0965**	**0.0965**		**0.0965**	**0.0965**		**1,522.8179**	**1,522.8179**	**0.0292**	**0.0279**	**1,532.0855**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.2439	2.4000e-004	0.0264	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0563	0.0563	1.5000e-004		0.0595
Unmitigated	6.2439	2.4000e-004	0.0264	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0563	0.0563	1.5000e-004		0.0595

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7352					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.5062					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.4900e-003	2.4000e-004	0.0264	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0563	0.0563	1.5000e-004		0.0595
Total	**6.2439**	**2.4000e-004**	**0.0264**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0563**	**0.0563**	**1.5000e-004**		**0.0595**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7352					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.5062					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.4900e-003	2.4000e-004	0.0264	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0563	0.0563	1.5000e-004		0.0595
Total	**6.2439**	**2.4000e-004**	**0.0264**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0563**	**0.0563**	**1.5000e-004**		**0.0595**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Mount Zion Construction - Project

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	91.00	Bed	0.73	65,133.94	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreage to match GoogleEarth estimates.

Construction Phase - Building construction phase for rennovation of hospital. Assume no off-road equipment but construction worker and vendor trips.

Off-road Equipment - Assume no offroad equipment with hospital rennovation.

Off-road Equipment -

Trips and VMT -

Demolition -

Vehicle Trips - The run costruction only. Ignore operational input and emissions htis run.

Construction Off-road Equipment Mitigation - Tier 3 as mitigation

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblLandUse	LotAcreage	1.50	0.73
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	SU_TR	7.19	0.00
tblVehicleTrips	WD_TR	11.81	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.0268	0.1931	0.3028	4.5000e-004	0.0620	6.3400e-003	0.0683	0.0114	5.9900e-003	0.0174	0.0000	39.8200	39.8200	1.8900e-003	0.0000	39.8596
Total	**0.0268**	**0.1931**	**0.3028**	**4.5000e-004**	**0.0620**	**6.3400e-003**	**0.0683**	**0.0114**	**5.9900e-003**	**0.0174**	**0.0000**	**39.8200**	**39.8200**	**1.8900e-003**	**0.0000**	**39.8596**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.0240	0.1740	0.2983	4.5000e-004	0.0620	4.9200e-003	0.0669	0.0114	4.7600e-003	0.0162	0.0000	39.8199	39.8199	1.8900e-003	0.0000	39.8596
Total	**0.0240**	**0.1740**	**0.2983**	**4.5000e-004**	**0.0620**	**4.9200e-003**	**0.0669**	**0.0114**	**4.7600e-003**	**0.0162**	**0.0000**	**39.8199**	**39.8199**	**1.8900e-003**	**0.0000**	**39.8596**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.45**	**9.90**	**1.51**	**0.00**	**0.00**	**22.40**	**2.08**	**0.00**	**20.53**	**7.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/14/2015	5	10	
2	Building Construction	Building Construction	1/15/2015	6/3/2015	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40

Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	0	4.00	226	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	387.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	21.00	11.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0453	0.0000	0.0453	6.8600e-003	0.0000	6.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0600e-003	0.0597	0.0441	6.0000e-005		4.3700e-003	4.3700e-003		4.1800e-003	4.1800e-003	0.0000	5.4460	5.4460	1.1100e-003	0.0000	5.4694
Total	**7.0600e-003**	**0.0597**	**0.0441**	**6.0000e-005**	**0.0453**	**4.3700e-003**	**0.0497**	**6.8600e-003**	**4.1800e-003**	**0.0110**	**0.0000**	**5.4460**	**5.4460**	**1.1100e-003**	**0.0000**	**5.4694**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.4600e-003	0.0653	0.0892	1.4000e-004	3.2100e-003	9.0000e-004	4.1200e-003	8.8000e-004	8.3000e-004	1.7100e-003	0.0000	12.5238	12.5238	1.0000e-004	0.0000	12.5259
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	2.7000e-004	2.7400e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4682	0.4682	3.0000e-005	0.0000	0.4687
Total	**6.6600e-003**	**0.0655**	**0.0919**	**1.5000e-004**	**3.6600e-003**	**9.0000e-004**	**4.5800e-003**	**1.0000e-003**	**8.3000e-004**	**1.8300e-003**	**0.0000**	**12.9919**	**12.9919**	**1.3000e-004**	**0.0000**	**12.9946**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0453	0.0000	0.0453	6.8600e-003	0.0000	6.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2700e-003	0.0406	0.0395	6.0000e-005		2.9500e-003	2.9500e-003		2.9500e-003	2.9500e-003	0.0000	5.4460	5.4460	1.1100e-003	0.0000	5.4694
Total	**4.2700e-003**	**0.0406**	**0.0395**	**6.0000e-005**	**0.0453**	**2.9500e-003**	**0.0482**	**6.8600e-003**	**2.9500e-003**	**9.8100e-003**	**0.0000**	**5.4460**	**5.4460**	**1.1100e-003**	**0.0000**	**5.4694**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	6.4600e-003	0.0653	0.0892	1.4000e-004	3.2100e-003	9.0000e-004	4.1200e-003	8.8000e-004	8.3000e-004	1.7100e-003	0.0000	12.5238	12.5238	1.0000e-004	0.0000	12.5259
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	2.7000e-004	2.7400e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4682	0.4682	3.0000e-005	0.0000	0.4687
Total	**6.6600e-003**	**0.0655**	**0.0919**	**1.5000e-004**	**3.6600e-003**	**9.0000e-004**	**4.5800e-003**	**1.0000e-003**	**8.3000e-004**	**1.8300e-003**	**0.0000**	**12.9919**	**12.9919**	**1.3000e-004**	**0.0000**	**12.9946**

3.3 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.9100e-003	0.0621	0.1093	1.3000e-004	3.5100e-003	9.7000e-004	4.4900e-003	1.0100e-003	8.9000e-004	1.9000e-003	0.0000	11.5505	11.5505	1.0000e-004	0.0000	11.5526
Worker	4.1700e-003	5.7500e-003	0.0576	1.2000e-004	9.5200e-003	9.0000e-005	9.6200e-003	2.5300e-003	8.0000e-005	2.6200e-003	0.0000	9.8315	9.8315	5.5000e-004	0.0000	9.8430
Total	**0.0131**	**0.0679**	**0.1669**	**2.5000e-004**	**0.0130**	**1.0600e-003**	**0.0141**	**3.5400e-003**	**9.7000e-004**	**4.5200e-003**	**0.0000**	**21.3820**	**21.3820**	**6.5000e-004**	**0.0000**	**21.3956**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.9100e-003	0.0621	0.1093	1.3000e-004	3.5100e-003	9.7000e-004	4.4900e-003	1.0100e-003	8.9000e-004	1.9000e-003	0.0000	11.5505	11.5505	1.0000e-004	0.0000	11.5526
Worker	4.1700e-003	5.7500e-003	0.0576	1.2000e-004	9.5200e-003	9.0000e-005	9.6200e-003	2.5300e-003	8.0000e-005	2.6200e-003	0.0000	9.8315	9.8315	5.5000e-004	0.0000	9.8430
Total	**0.0131**	**0.0679**	**0.1669**	**2.5000e-004**	**0.0130**	**1.0600e-003**	**0.0141**	**3.5400e-003**	**9.7000e-004**	**4.5200e-003**	**0.0000**	**21.3820**	**21.3820**	**6.5000e-004**	**0.0000**	**21.3956**

UCSF Zion Operational Project

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	85.00	1000sqft	0.72	85,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Theis run calculates reduction in emissions from demolition of 3 buildings.

Land Use - Adjust acreage to match Google Earth estimate.

Vehicle Trips - No reduction in vehicle trips assumed at the project level from demolition. Occupants shift to rennovated hospital per PD.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblLandUse	LotAcreage	1.95	0.72
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00

tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0628	9.0000e-005	9.0700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0186	0.0186	6.0000e-005		0.0198
Energy	0.0510	0.4632	0.3891	2.7800e-003		0.0352	0.0352		0.0352	0.0352		555.8904	555.8904	0.0107	0.0102	559.2735
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.1137**	**0.4633**	**0.3982**	**2.7800e-003**	**0.0000**	**0.0352**	**0.0352**	**0.0000**	**0.0352**	**0.0352**		**555.9090**	**555.9090**	**0.0107**	**0.0102**	**559.2932**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0628	9.0000e-005	9.0700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0186	0.0186	6.0000e-005		0.0198
Energy	0.0510	0.4632	0.3891	2.7800e-003		0.0352	0.0352		0.0352	0.0352		555.8904	555.8904	0.0107	0.0102	559.2735
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.1137**	**0.4633**	**0.3982**	**2.7800e-003**	**0.0000**	**0.0352**	**0.0352**	**0.0000**	**0.0352**	**0.0352**		**555.9090**	**555.9090**	**0.0107**	**0.0102**	**559.2932**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627577	0.058271	0.149142	0.080550	0.026862	0.003412	0.025393	0.003562	0.003105	0.011067	0.009995	0.000558	0.000506

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0510	0.4632	0.3891	2.7800e-003		0.0352	0.0352		0.0352	0.0352		555.8904	555.8904	0.0107	0.0102	559.2735
NaturalGas Unmitigated	0.0510	0.4632	0.3891	2.7800e-003		0.0352	0.0352		0.0352	0.0352		555.8904	555.8904	0.0107	0.0102	559.2735

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	4725.07	0.0510	0.4632	0.3891	2.7800e-003		0.0352	0.0352		0.0352	0.0352		555.8904	555.8904	0.0107	0.0102	559.2735
Total		**0.0510**	**0.4632**	**0.3891**	**2.7800e-003**		**0.0352**	**0.0352**		**0.0352**	**0.0352**		**555.8904**	**555.8904**	**0.0107**	**0.0102**	**559.2735**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	4.72507	0.0510	0.4632	0.3891	2.7800e-003		0.0352	0.0352		0.0352	0.0352		555.8904	555.8904	0.0107	0.0102	559.2735
Total		**0.0510**	**0.4632**	**0.3891**	**2.7800e-003**		**0.0352**	**0.0352**		**0.0352**	**0.0352**		**555.8904**	**555.8904**	**0.0107**	**0.0102**	**559.2735**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0628	9.0000e-005	9.0700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0186	0.0186	6.0000e-005		0.0198
Unmitigated	2.0628	9.0000e-005	9.0700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0186	0.0186	6.0000e-005		0.0198

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2429					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8190					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.2000e-004	9.0000e-005	9.0700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0186	0.0186	6.0000e-005		0.0198
Total	**2.0628**	**9.0000e-005**	**9.0700e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0186**	**0.0186**	**6.0000e-005**		**0.0198**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2429					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8190					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.2000e-004	9.0000e-005	9.0700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0186	0.0186	6.0000e-005		0.0198
Total	**2.0628**	**9.0000e-005**	**9.0700e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0186**	**0.0186**	**6.0000e-005**		**0.0198**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Construction Emissions - Zion Program

Construction Emissions in Tons/year (from CalEEMod)

2020 Mitigated

ROG	NOx	PM10	PM2.5	ROG	NOx
3.11	1.0334	0.0577	0.0532	3.049	0.5965

Construction days/year = 113

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5	ROG	NOx
55.04	18.29	1.02	0.94	53.9646	10.55752

Construction Emissions - Mount Zion Prioject by 2020

Construction Emissions in Tons/year (from CalEEMod)

ROG	NOx	PM10	PM2.5	ROG	NOx
0.0268	0.1931	0.0063	0.0059	0.024	0.174

Construction days = 110

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5	ROG	NOx
0.49	3.51	0.11	0.11	0.44	3.163636

All Zion Emissions

				Mitigated	
ROG	NOx	PM10	PM2.5	ROG	NOx
55.53	21.80	1.14	1.05	54.40	13.72

Construction Emissions - Mission Center Program

Construction Emissions in Tons/year (from CalEEMod)

ROG	NOx	PM10	PM2.5
2.8164	3.5375	0.2154	0.2057

Construction days/year = 249

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
22.62	28.41	1.73	1.65

UCSF Mission Center Construction

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	100.00	1000sqft	1.40	100,000.00	0
Enclosed Parking with Elevator	95.00	1000sqft	1.00	95,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreage to match GoogleEarth estimates.

Construction Phase -

Vehicle Trips - This run construction only. Ignore operational input and emissions this run.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblLandUse	LotAcreage	2.30	1.40

tblLandUse	LotAcreage	2.18	1.00
tblProjectCharacteristics	OperationalYear	2014	2025
tblVehicleTrips	ST_TR	2.37	0.00
tblVehicleTrips	SU_TR	0.98	0.00
tblVehicleTrips	WD_TR	11.01	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	1.0071	3.5277	3.1680	4.6900e-003	0.1176	0.2146	0.3321	0.0362	0.2049	0.2412	0.0000	403.0481	403.0481	0.0666	0.0000	404.4463
2016	1.8093	9.7700e-003	0.0103	2.0000e-005	5.1000e-004	7.9000e-004	1.3000e-003	1.4000e-004	7.9000e-004	9.3000e-004	0.0000	1.5276	1.5276	1.5000e-004	0.0000	1.5307
Total	**2.8164**	**3.5375**	**3.1783**	**4.7100e-003**	**0.1181**	**0.2154**	**0.3334**	**0.0364**	**0.2057**	**0.2421**	**0.0000**	**404.5757**	**404.5757**	**0.0667**	**0.0000**	**405.9770**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	1.0071	3.5277	3.1680	4.6900e-003	0.1176	0.2146	0.3321	0.0362	0.2049	0.2412	0.0000	403.0478	403.0478	0.0666	0.0000	404.4460
2016	1.8093	9.7700e-003	0.0103	2.0000e-005	5.1000e-004	7.9000e-004	1.3000e-003	1.4000e-004	7.9000e-004	9.3000e-004	0.0000	1.5276	1.5276	1.5000e-004	0.0000	1.5307

Total	2.8164	3.5375	3.1783	4.7100e-003	0.1181	0.2154	0.3334	0.0364	0.2057	0.2421	0.0000	404.5754	404.5754	0.0667	0.0000	405.9767

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2015	2/2/2015	5	3	
2	Grading	Grading	2/3/2015	2/10/2015	5	6	
3	Building Construction	Building Construction	2/11/2015	12/15/2015	5	220	
4	Paving	Paving	12/16/2015	12/29/2015	5	10	
5	Architectural Coating	Architectural Coating	12/30/2015	1/12/2016	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 292,500; Non-Residential Outdoor: 97,500 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Paving	Pavers	1	8.00	125	0.42

Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	1	8.00	130	0.36
Site Preparation	Scrapers	1	8.00	361	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	72.00	32.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	4.2300e-003	0.0487	0.0280	4.0000e-005		2.4000e-003	2.4000e-003		2.2000e-003	2.2000e-003	0.0000	3.4131	3.4131	1.0200e-003	0.0000	3.4345
Total	**4.2300e-003**	**0.0487**	**0.0280**	**4.0000e-005**	**2.3900e-003**	**2.4000e-003**	**4.7900e-003**	**2.6000e-004**	**2.2000e-003**	**2.4600e-003**	**0.0000**	**3.4131**	**3.4131**	**1.0200e-003**	**0.0000**	**3.4345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	6.6000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1124	0.1124	1.0000e-005	0.0000	0.1125
Total	**5.0000e-005**	**7.0000e-005**	**6.6000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1124**	**0.1124**	**1.0000e-005**	**0.0000**	**0.1125**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2300e-003	0.0487	0.0280	4.0000e-005		2.4000e-003	2.4000e-003		2.2000e-003	2.2000e-003	0.0000	3.4131	3.4131	1.0200e-003	0.0000	3.4345
Total	**4.2300e-003**	**0.0487**	**0.0280**	**4.0000e-005**	**2.3900e-003**	**2.4000e-003**	**4.7900e-003**	**2.6000e-004**	**2.2000e-003**	**2.4600e-003**	**0.0000**	**3.4131**	**3.4131**	**1.0200e-003**	**0.0000**	**3.4345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	6.6000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1124	0.1124	1.0000e-005	0.0000	0.1125
Total	**5.0000e-005**	**7.0000e-005**	**6.6000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1124**	**0.1124**	**1.0000e-005**	**0.0000**	**0.1125**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9000e-003	0.0938	0.0606	6.0000e-005		5.2600e-003	5.2600e-003		4.8400e-003	4.8400e-003	0.0000	5.8897	5.8897	1.7600e-003	0.0000	5.9266
Total	**8.9000e-003**	**0.0938**	**0.0606**	**6.0000e-005**	**0.0197**	**5.2600e-003**	**0.0249**	**0.0101**	**4.8400e-003**	**0.0149**	**0.0000**	**5.8897**	**5.8897**	**1.7600e-003**	**0.0000**	**5.9266**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.6000e-004	1.6500e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2809	0.2809	2.0000e-005	0.0000	0.2812
Total	**1.2000e-004**	**1.6000e-004**	**1.6500e-003**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2809**	**0.2809**	**2.0000e-005**	**0.0000**	**0.2812**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9000e-003	0.0938	0.0606	6.0000e-005		5.2600e-003	5.2600e-003		4.8400e-003	4.8400e-003	0.0000	5.8897	5.8897	1.7600e-003	0.0000	5.9266
Total	**8.9000e-003**	**0.0938**	**0.0606**	**6.0000e-005**	**0.0197**	**5.2600e-003**	**0.0249**	**0.0101**	**4.8400e-003**	**0.0149**	**0.0000**	**5.8897**	**5.8897**	**1.7600e-003**	**0.0000**	**5.9266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.6000e-004	1.6500e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2809	0.2809	2.0000e-005	0.0000	0.2812
Total	**1.2000e-004**	**1.6000e-004**	**1.6500e-003**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2809**	**0.2809**	**2.0000e-005**	**0.0000**	**0.2812**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4430	2.8423	1.8751	2.7400e-003		0.1936	0.1936		0.1856	0.1856	0.0000	235.9123	235.9123	0.0565	0.0000	237.0988
Total	**0.4430**	**2.8423**	**1.8751**	**2.7400e-003**		**0.1936**	**0.1936**		**0.1856**	**0.1856**	**0.0000**	**235.9123**	**235.9123**	**0.0565**	**0.0000**	**237.0988**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0570	0.3975	0.6994	8.1000e-004	0.0225	6.2300e-003	0.0287	6.4400e-003	5.7200e-003	0.0122	0.0000	73.9230	73.9230	6.5000e-004	0.0000	73.9367
Worker	0.0314	0.0434	0.4344	9.4000e-004	0.0718	6.9000e-004	0.0725	0.0191	6.3000e-004	0.0197	0.0000	74.1579	74.1579	4.1200e-003	0.0000	74.2444
Total	**0.0885**	**0.4409**	**1.1338**	**1.7500e-003**	**0.0943**	**6.9200e-003**	**0.1013**	**0.0256**	**6.3500e-003**	**0.0319**	**0.0000**	**148.0809**	**148.0809**	**4.7700e-003**	**0.0000**	**148.1811**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4430	2.8423	1.8751	2.7400e-003		0.1936	0.1936		0.1856	0.1856	0.0000	235.9120	235.9120	0.0565	0.0000	237.0985
Total	**0.4430**	**2.8423**	**1.8751**	**2.7400e-003**		**0.1936**	**0.1936**		**0.1856**	**0.1856**	**0.0000**	**235.9120**	**235.9120**	**0.0565**	**0.0000**	**237.0985**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0570	0.3975	0.6994	8.1000e-004	0.0225	6.2300e-003	0.0287	6.4400e-003	5.7200e-003	0.0122	0.0000	73.9230	73.9230	6.5000e-004	0.0000	73.9367
Worker	0.0314	0.0434	0.4344	9.4000e-004	0.0718	6.9000e-004	0.0725	0.0191	6.3000e-004	0.0197	0.0000	74.1579	74.1579	4.1200e-003	0.0000	74.2444
Total	**0.0885**	**0.4409**	**1.1338**	**1.7500e-003**	**0.0943**	**6.9200e-003**	**0.1013**	**0.0256**	**6.3500e-003**	**0.0319**	**0.0000**	**148.0809**	**148.0809**	**4.7700e-003**	**0.0000**	**148.1811**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7200e-003	0.0988	0.0613	9.0000e-005		6.2100e-003	6.2100e-003		5.7200e-003	5.7200e-003	0.0000	8.2702	8.2702	2.4200e-003	0.0000	8.3212

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.7200e-003**	**0.0988**	**0.0613**	**9.0000e-005**		**6.2100e-003**	**6.2100e-003**		**5.7200e-003**	**5.7200e-003**	**0.0000**	**8.2702**	**8.2702**	**2.4200e-003**	**0.0000**	**8.3212**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	4.1000e-004	4.1100e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.7023	0.7023	4.0000e-005	0.0000	0.7031
Total	**3.0000e-004**	**4.1000e-004**	**4.1100e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7023**	**0.7023**	**4.0000e-005**	**0.0000**	**0.7031**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7200e-003	0.0988	0.0613	9.0000e-005		6.2100e-003	6.2100e-003		5.7200e-003	5.7200e-003	0.0000	8.2702	8.2702	2.4200e-003	0.0000	8.3211
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.7200e-003**	**0.0988**	**0.0613**	**9.0000e-005**		**6.2100e-003**	**6.2100e-003**		**5.7200e-003**	**5.7200e-003**	**0.0000**	**8.2702**	**8.2702**	**2.4200e-003**	**0.0000**	**8.3211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	4.1000e-004	4.1100e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.7023	0.7023	4.0000e-005	0.0000	0.7031
Total	**3.0000e-004**	**4.1000e-004**	**4.1100e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7023**	**0.7023**	**4.0000e-005**	**0.0000**	**0.7031**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	2.5700e-003	1.9000e-003	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	0.2553	0.2553	3.0000e-005	0.0000	0.2560
Total	**0.4523**	**2.5700e-003**	**1.9000e-003**	**0.0000**		**2.2000e-004**	**2.2000e-004**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.2553**	**0.2553**	**3.0000e-005**	**0.0000**	**0.2560**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	8.0000e-005	7.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1311	0.1311	1.0000e-005	0.0000	0.1312
Total	**6.0000e-005**	**8.0000e-005**	**7.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1311**	**0.1311**	**1.0000e-005**	**0.0000**	**0.1312**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	2.5700e-003	1.9000e-003	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	0.2553	0.2553	3.0000e-005	0.0000	0.2560
Total	**0.4523**	**2.5700e-003**	**1.9000e-003**	**0.0000**		**2.2000e-004**	**2.2000e-004**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.2553**	**0.2553**	**3.0000e-005**	**0.0000**	**0.2560**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	8.0000e-005	7.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1311	0.1311	1.0000e-005	0.0000	0.1312
Total	**6.0000e-005**	**8.0000e-005**	**7.7000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1311**	**0.1311**	**1.0000e-005**	**0.0000**	**0.1312**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8077					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4700e-003	9.4900e-003	7.5400e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	1.0213	1.0213	1.2000e-004	0.0000	1.0238
Total	**1.8091**	**9.4900e-003**	**7.5400e-003**	**1.0000e-005**		**7.9000e-004**	**7.9000e-004**		**7.9000e-004**	**7.9000e-004**	**0.0000**	**1.0213**	**1.0213**	**1.2000e-004**	**0.0000**	**1.0238**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	2.8000e-004	2.7800e-003	1.0000e-005	5.1000e-004	0.0000	5.1000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.5063	0.5063	3.0000e-005	0.0000	0.5068
Total	**2.0000e-004**	**2.8000e-004**	**2.7800e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.5063**	**0.5063**	**3.0000e-005**	**0.0000**	**0.5068**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8077					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4700e-003	9.4900e-003	7.5400e-003	1.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	1.0213	1.0213	1.2000e-004	0.0000	1.0238
Total	**1.8091**	**9.4900e-003**	**7.5400e-003**	**1.0000e-005**		**7.9000e-004**	**7.9000e-004**		**7.9000e-004**	**7.9000e-004**	**0.0000**	**1.0213**	**1.0213**	**1.2000e-004**	**0.0000**	**1.0238**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	2.8000e-004	2.7800e-003	1.0000e-005	5.1000e-004	0.0000	5.1000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.5063	0.5063	3.0000e-005	0.0000	0.5068
Total	**2.0000e-004**	**2.8000e-004**	**2.7800e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.5063**	**0.5063**	**3.0000e-005**	**0.0000**	**0.5068**

UCSF Mission Center

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	100.00	1000sqft	1.40	100,000.00	0
Enclosed Parking with Elevator	95.00		1.00		0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreage to match GoogleEarth estimate.

Vehicle Trips - Adjust trip rates to match travel demand study.

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblLandUse	LotAcreage	2.30	1.40

tblProjectCharacteristics	OperationalYear	2014	2025
tblVehicleTrips	ST_TR	2.37	1.16
tblVehicleTrips	SU_TR	0.98	0.48
tblVehicleTrips	WD_TR	11.01	5.40

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4276	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0427	0.0427	1.1000e-004		0.0450
Energy	0.0600	0.5450	0.4578	3.2700e-003		0.0414	0.0414		0.0414	0.0414		653.9887	653.9887	0.0125	0.0120	657.9688
Mobile	1.2753	2.3917	11.2930	0.0385	2.7815	0.0474	2.8288	0.7514	0.0438	0.7952		2,756.1386	2,756.1386	0.0920		2,758.0696
Total	**3.7628**	**2.9369**	**11.7707**	**0.0418**	**2.7815**	**0.0889**	**2.8703**	**0.7514**	**0.0852**	**0.8366**		**3,410.1700**	**3,410.1700**	**0.1046**	**0.0120**	**3,416.0834**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4276	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0427	0.0427	1.1000e-004		0.0450
Energy	0.0543	0.4932	0.4143	2.9600e-003		0.0375	0.0375		0.0375	0.0375		591.8453	591.8453	0.0113	0.0109	595.4472

Mobile	1.2753	2.3917	11.2930	0.0385	2.7815	0.0474	2.8288	0.7514	0.0438	0.7952		2,756.1386	2,756.1386	0.0920		2,758.0696
Total	**3.7571**	**2.8851**	**11.7272**	**0.0415**	**2.7815**	**0.0849**	**2.8664**	**0.7514**	**0.0813**	**0.8327**		**3,348.0266**	**3,348.0266**	**0.1034**	**0.0109**	**3,353.5618**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.15**	**1.76**	**0.37**	**0.74**	**0.00**	**4.43**	**0.14**	**0.00**	**4.62**	**0.47**	**0.00**	**1.82**	**1.82**	**1.14**	**9.51**	**1.83**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2753	2.3917	11.2930	0.0385	2.7815	0.0474	2.8288	0.7514	0.0438	0.7952		2,756.1386	2,756.1386	0.0920		2,758.0696
Unmitigated	1.2753	2.3917	11.2930	0.0385	2.7815	0.0474	2.8288	0.7514	0.0438	0.7952		2,756.1386	2,756.1386	0.0920		2,758.0696

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	540.00	116.20	48.00	977,819	977,819
Total	540.00	116.20	48.00	977,819	977,819

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.630348	0.058305	0.148471	0.076665	0.026166	0.003250	0.027367	0.004239	0.003204	0.010671	0.010334	0.000497	0.000484

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0543	0.4932	0.4143	2.9600e-003		0.0375	0.0375		0.0375	0.0375		591.8453	591.8453	0.0113	0.0109	595.4472
NaturalGas Unmitigated	0.0600	0.5450	0.4578	3.2700e-003		0.0414	0.0414		0.0414	0.0414		653.9887	653.9887	0.0125	0.0120	657.9688

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	5558.9	0.0600	0.5450	0.4578	3.2700e-003		0.0414	0.0414		0.0414	0.0414		653.9887	653.9887	0.0125	0.0120	657.9688

Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0600**	**0.5450**	**0.4578**	**3.2700e-003**		**0.0414**	**0.0414**		**0.0414**	**0.0414**		**653.9887**	**653.9887**	**0.0125**	**0.0120**	**657.9688**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	5.03068	0.0543	0.4932	0.4143	2.9600e-003		0.0375	0.0375		0.0375	0.0375		591.8453	591.8453	0.0113	0.0109	595.4472
Total		**0.0543**	**0.4932**	**0.4143**	**2.9600e-003**		**0.0375**	**0.0375**		**0.0375**	**0.0375**		**591.8453**	**591.8453**	**0.0113**	**0.0109**	**595.4472**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4276	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0427	0.0427	1.1000e-004		0.0450
Unmitigated	2.4276	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0427	0.0427	1.1000e-004		0.0450

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8300e-003	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0427	0.0427	1.1000e-004		0.0450
Total	**2.4276**	**1.8000e-004**	**0.0199**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0427**	**0.0427**	**1.1000e-004**		**0.0450**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8300e-003	1.8000e-004	0.0199	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0427	0.0427	1.1000e-004		0.0450
Total	**2.4276**	**1.8000e-004**	**0.0199**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0427**	**0.0427**	**1.1000e-004**		**0.0450**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Mitigated Operational Air Quality Emissions with TDM

Mission Center (From CalEEMod)

Air Pollutant	Estimated Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Mobile Sources[a]	1.28	2.39	2.83	0.8
Area Sources[a]	2.43	<0.001	<0.001	<0.001
Natural gas combustion	0.06	0.55	0.04	0.04
Total	**3.76**	**2.94**	**2.87**	**0.84**

Mobile emission reduction from TDM: 12 percent

	ROG	Nox	PM10	PM2.5
Mitigated Mobile	1.13	2.10	2.49	0.70
Mitigated Total	3.61	2.65	2.53	0.74

UCSF Mission Center

Weekend Vehicle Trip Calculations - UCSF Mission Center

Per Adavant Project Trip Generation for weekday =

			Size		Rate
New Office bldg.	540	trips	100	ksf	5.400

Total = 540 trips This is weekday

CalEEMod Weekday and Weekend default rates from ITE =

	Weekday	Saturday	Sunday
New Medical office bldg.	11.01	2.37	0.98

Calculate weekend trips based on Project specific weekday Trip demand from Adavant

	Saturday		Rate		Sunday		Rate	
New Medic Residential	116	trips	1.162398	trip/unit	48	trips	0.480654	trip/unit

TECHNICAL ANALYSIS
Greenhouse Gas Emissions

GHG Emission Factor for Parnassus Campus

PCUP total CO2e emissions (2011) = 68,522 MT
2011 Cogen electricity output: 95,944 MWh = 327,457 MMBtu
2011 Cogen heat output = 692,776 MMBtu
Assumed efficiency of steam production = 0.8
Assumed efficiency of electricity production = 0.35

Emissions from steam production: 32,937 MT
Emission from electricity production: 35,585 MT

Emission factor for PCUP electricity = 35,585 MT/95,944 MWh = 0.37 MT CO2e/MWh

Emission factor for PCUP steam = 32,937/692,776 MMBtu = 0.048 MT/MMBtu

I have some useful info for you in the attached spreadsheet, but I think we need to discuss so I understand what you really need for your analysis.
For the latest verified GHG inventory we have (CY 2011), it looks like 18,305 metric tons CO2e was attributed to 63,786,245 kWh of purchased electricity from PG&E and No
is attributed to the cogeneration plant, which produces electricity and steam for heating. What I don't know is how those emissions are allocated to electricity and to steam.
they are required to by the TCR protocol. Depending on what you need, we may have to allocate emissions to electricity and steam using information about the plant inputs
The CARB GHG report for 2011 (also attached) appears to show cogen output to be 95,944 MWh and 692,776 MMBtu . By my quick calculation (using the TCR-provided meth
), the emissions would be apportioned at 46,812 to electricity and 20,982 to steam, therefor the cogen electricity EF would be 46,812 divided by 94,774 = 0.49 MT CO2/MWh

CLS Calculations:

PG&E=	290	lb/MWh	(CalEEMOd)			Conversion factor	
PCUP =	0.37	MT/MWh	=	815.7138	lb/MWh	2204.632	lb/MT

2011 power =	PG&E & Noble	63786.25	MWh
	CPUC =	95944	MWh
	Total =	159730.2	MWh
Composite emission factor =		605.7767	lb/MWh

UCSF Parnassus Operational Program

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	308.00	1000sqft	2.75	308,000.00	0
Apartments Low Rise	77.00	Dwelling Unit	0.30	77,000.00	99

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	605.8	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parnassus generated electricity from CUP. Factor assumes a hybrid of PG&E 290 lb CO2/MWh and CUP .37 MT/MWh=605.8 lb CO2/MWh

Land Use - Adjust population to match UCSF estimates

Vehicle Trips - Adjust trip rates to match travel demand analysis.

Woodstoves - Assume no woodstoves or fireplaces in campus housing.

Energy Mitigation - UCSF Polic to acheive energy reduction 10 perecnt beyond Title 24

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblFireplaces	NumberGas	42.35	0.00
tblFireplaces	NumberNoFireplace	23.87	77.00
tblFireplaces	NumberWood	10.78	0.00
tblLandUse	LotAcreage	7.07	2.75
tblLandUse	LotAcreage	4.81	0.30
tblLandUse	Population	220.00	99.00
tblProjectCharacteristics	CO2IntensityFactor	0	605.8
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	0.97
tblVehicleTrips	ST_TR	10.18	0.22
tblVehicleTrips	SU_TR	6.07	0.83
tblVehicleTrips	SU_TR	8.91	0.19
tblVehicleTrips	WD_TR	6.59	0.90
tblVehicleTrips	WD_TR	16.50	0.36
tblWoodstoves	NumberCatalytic	0.39	0.00
tblWoodstoves	NumberNoncatalytic	0.39	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7357	6.6000e-003	0.5725	3.0000e-005		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003	0.0000	0.9394	0.9394	9.0000e-004	0.0000	0.9584
Energy	0.1777	1.6098	1.3178	9.6900e-003		0.1228	0.1228		0.1228	0.1228	0.0000	3,253.6084	3,253.6084	0.0337	0.0322	3,264.3085
Mobile	0.0536	0.0924	0.4895	2.1700e-003	0.1509	2.4700e-003	0.1534	0.0409	2.2900e-003	0.0432	0.0000	135.2780	135.2780	3.9800e-003	0.0000	135.3616

Waste						0.0000	0.0000		0.0000	0.0000	682.4191	0.0000	682.4191	40.3298	0.0000	1,529.3451
Water						0.0000	0.0000		0.0000	0.0000	13.8529	75.0457	88.8986	1.4228	0.0336	129.1925
Total	**1.9670**	**1.7088**	**2.3798**	**0.0119**	**0.1509**	**0.1284**	**0.2793**	**0.0409**	**0.1282**	**0.1691**	**696.2719**	**3,464.8715**	**4,161.1435**	**41.7912**	**0.0658**	**5,059.1662**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7357	6.6000e-003	0.5725	3.0000e-005		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003	0.0000	0.9394	0.9394	9.0000e-004	0.0000	0.9584
Energy	0.1476	1.3375	1.0951	8.0500e-003		0.1020	0.1020		0.1020	0.1020	0.0000	2,838.3876	2,838.3876	0.0280	0.0268	2,847.2776
Mobile	0.0536	0.0924	0.4895	2.1700e-003	0.1509	2.4700e-003	0.1534	0.0409	2.2900e-003	0.0432	0.0000	135.2780	135.2780	3.9800e-003	0.0000	135.3616
Waste						0.0000	0.0000		0.0000	0.0000	682.4191	0.0000	682.4191	40.3298	0.0000	1,529.3451
Water						0.0000	0.0000		0.0000	0.0000	11.0823	62.0609	73.1432	1.1383	0.0269	105.3784
Total	**1.9370**	**1.4365**	**2.1572**	**0.0103**	**0.1509**	**0.1076**	**0.2585**	**0.0409**	**0.1075**	**0.1483**	**693.5014**	**3,036.6660**	**3,730.1674**	**41.5010**	**0.0537**	**4,618.3211**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.53**	**15.93**	**9.36**	**13.79**	**0.00**	**16.18**	**7.44**	**0.00**	**16.20**	**12.28**	**0.40**	**12.36**	**10.36**	**0.69**	**18.49**	**8.71**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0536	0.0924	0.4895	2.1700e-003	0.1509	2.4700e-003	0.1534	0.0409	2.2900e-003	0.0432	0.0000	135.2780	135.2780	3.9800e-003	0.0000	135.3616
Unmitigated	0.0536	0.0924	0.4895	2.1700e-003	0.1509	2.4700e-003	0.1534	0.0409	2.2900e-003	0.0432	0.0000	135.2780	135.2780	3.9800e-003	0.0000	135.3616

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	69.30	74.69	63.91	154,703	154,703
Hospital	110.88	67.76	58.52	244,893	244,893
Total	180.18	142.45	122.43	399,596	399,596

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.629311	0.058303	0.147059	0.076368	0.026204	0.003252	0.029759	0.004830	0.003411	0.010105	0.010495	0.000440	0.000462

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,377.6278	1,377.6278	0.0000	0.0000	1,377.6278
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,495.4087	1,495.4087	0.0000	0.0000	1,495.4087
NaturalGas Mitigated	0.1476	1.3375	1.0951	8.0500e-003		0.1020	0.1020		0.1020	0.1020	0.0000	1,460.7598	1,460.7598	0.0280	0.0268	1,469.6498
NaturalGas Unmitigated	0.1777	1.6098	1.3178	9.6900e-003		0.1228	0.1228		0.1228	0.1228	0.0000	1,758.1997	1,758.1997	0.0337	0.0322	1,768.8998

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.80246e+006	9.7200e-003	0.0831	0.0353	5.3000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	96.1860	96.1860	1.8400e-003	1.7600e-003	96.7714
Hospital	3.1145e+007	0.1679	1.5267	1.2824	9.1600e-003		0.1160	0.1160		0.1160	0.1160	0.0000	1,662.0137	1,662.0137	0.0319	0.0305	1,672.1284
Total	**3.29E+07**	**0.1777**	**1.6098**	**1.3178**	**9.6900e-003**		**0.1228**	**0.1228**		**0.1228**	**0.1228**	**0.0000**	**1,758.1997**	**1,758.1997**	**0.0337**	**0.0322**	**1,768.8998**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hospital	2.58892e+007	0.1396	1.2691	1.0660	7.6100e-003		0.0965	0.0965		0.0965	0.0965	0.0000	1,381.5489	1,381.5489	0.0265	0.0253	1,389.9567
Apartments Low Rise	1.48436e+006	8.0000e-003	0.0684	0.0291	4.4000e-004		5.5300e-003	5.5300e-003		5.5300e-003	5.5300e-003	0.0000	79.2110	79.2110	1.5200e-003	1.4500e-003	79.6930
Total	**2.74E+07**	**0.1476**	**1.3375**	**1.0951**	**8.0500e-003**		**0.1020**	**0.1020**		**0.1020**	**0.1020**	**0.0000**	**1,460.7598**	**1,460.7598**	**0.0280**	**0.0268**	**1,469.6498**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	273840	75.2474	0.0000	0.0000	75.2474
Hospital	5.16824e+006	1,420.1613	0.0000	0.0000	1,420.1613
Total		**1,495.4087**	**0.0000**	**0.0000**	**1,495.4087**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	262860	72.2304	0.0000	0.0000	72.2304

Hospital	4.75059e+006	1,305.3974	0.0000	0.0000	1,305.3974
Total	**5.01E+06**	**1,377.6278**	**0.0000**	**0.0000**	**1,377.6278**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7357	6.6000e-003	0.5725	3.0000e-005		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003	0.0000	0.9394	0.9394	9.0000e-004	0.0000	0.9584
Unmitigated	1.7357	6.6000e-003	0.5725	3.0000e-005		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003	0.0000	0.9394	0.9394	9.0000e-004	0.0000	0.9584

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0173	6.6000e-003	0.5725	3.0000e-005		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003	0.0000	0.9394	0.9394	9.0000e-004	0.0000	0.9584

Total	**1.7357**	**6.6000e-003**	**0.5725**	**3.0000e-005**		**3.1800e-003**	**3.1800e-003**		**3.1800e-003**	**3.1800e-003**	**0.0000**	**0.9394**	**0.9394**	**9.0000e-004**	**0.0000**	**0.9584**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0173	6.6000e-003	0.5725	3.0000e-005		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003	0.0000	0.9394	0.9394	9.0000e-004	0.0000	0.9584
Total	**1.7357**	**6.6000e-003**	**0.5725**	**3.0000e-005**		**3.1800e-003**	**3.1800e-003**		**3.1800e-003**	**3.1800e-003**	**0.0000**	**0.9394**	**0.9394**	**9.0000e-004**	**0.0000**	**0.9584**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	73.1432	1.1383	0.0269	105.3784

Unmitigated	88.8986	1.4228	0.0336	129.1925

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	5.01686 / 3.1628	12.0929	0.1635	3.8600e-003	16.7224
Hospital	38.648 / 7.36152	76.8057	1.2594	0.0297	112.4701
Total		**88.8986**	**1.4228**	**0.0336**	**129.1925**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	4.01349 / 3.1628	10.2827	0.1308	3.0900e-003	13.9863
Hospital	30.9184 / 7.36152	62.8605	1.0075	0.0238	91.3921
Total		**73.1432**	**1.1383**	**0.0269**	**105.3784**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	682.4191	40.3298	0.0000	1,529.3451
Unmitigated	682.4191	40.3298	0.0000	1,529.3451

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	35.42	7.1899	0.4249	0.0000	16.1131
Hospital	3326.4	675.2291	39.9049	0.0000	1,513.2320
Total		**682.4191**	**40.3298**	**0.0000**	**1,529.3451**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Apartments Low Rise	35.42	7.1899	0.4249	0.0000	16.1131
Hospital	3326.4	675.2291	39.9049	0.0000	1,513.2320
Total		**682.4191**	**40.3298**	**0.0000**	**1,529.3451**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Parnassus Operational Project

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	252.00	Dwelling Unit	6.63	252,000.00	317

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2035
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	605.78	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parnassus generated electricity from CUP. Factor assumes a hybrid of PG&E 290 lb CO2/MWh and CUP .37 MT/MWh=815.7 lb CO2/MWh

Land Use - Population adjusted to match UCSF Estimates

Vehicle Trips - Adjust trip rates to match travel demand estimates.

Woodstoves - Assume no Woodstoves or fireplaces in housing.

Area Coating - No New coating emission for existing building conversion

Landscape Equipment - No landscape emissions for existing building connversion

Energy Use - No change made

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblFireplaces	NumberGas	138.60	0.00
tblFireplaces	NumberNoFireplace	78.12	252.00
tblFireplaces	NumberWood	35.28	0.00
tblLandUse	Population	721.00	317.00
tblProjectCharacteristics	CO2IntensityFactor	0	605.78
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	ST_TR	7.16	0.97
tblVehicleTrips	SU_TR	6.07	0.83
tblVehicleTrips	WD_TR	6.59	0.90
tblWoodstoves	NumberCatalytic	1.26	0.00
tblWoodstoves	NumberNoncatalytic	1.26	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0399	0.0215	1.8646	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0565	3.0565	2.9100e-003	0.0000	3.1176
Energy	0.0120	0.1028	0.0438	6.6000e-004		8.3100e-003	8.3100e-003		8.3100e-003	8.3100e-003	0.0000	369.4021	369.4021	2.2800e-003	2.1800e-003	370.1267
Mobile	0.0712	0.1188	0.6322	2.7600e-003	0.1912	3.1700e-003	0.1944	0.0518	2.9300e-003	0.0547	0.0000	171.8242	171.8242	5.0700e-003	0.0000	171.9307
Waste						0.0000	0.0000		0.0000	0.0000	23.5307	0.0000	23.5307	1.3906	0.0000	52.7338

Water						0.0000	0.0000		0.0000	0.0000	5.2089	34.3666	39.5755	0.5350	0.0126	54.7268
Total	**1.1232**	**0.2431**	**2.5405**	**3.5200e-003**	**0.1912**	**0.0219**	**0.2130**	**0.0518**	**0.0216**	**0.0734**	**28.7396**	**578.6493**	**607.3889**	**1.9359**	**0.0148**	**652.6355**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0399	0.0215	1.8646	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0565	3.0565	2.9100e-003	0.0000	3.1176
Energy	0.0101	0.0861	0.0366	5.5000e-004		6.9600e-003	6.9600e-003		6.9600e-003	6.9600e-003	0.0000	338.0578	338.0578	1.9100e-003	1.8300e-003	338.6646
Mobile	0.0712	0.1188	0.6322	2.7600e-003	0.1912	3.1700e-003	0.1944	0.0518	2.9300e-003	0.0547	0.0000	171.8242	171.8242	5.0700e-003	0.0000	171.9307
Waste						0.0000	0.0000		0.0000	0.0000	23.5307	0.0000	23.5307	1.3906	0.0000	52.7338
Water						0.0000	0.0000		0.0000	0.0000	4.1672	29.4842	33.6514	0.4280	0.0101	45.7724
Total	**1.1212**	**0.2264**	**2.5334**	**3.4100e-003**	**0.1912**	**0.0205**	**0.2117**	**0.0518**	**0.0203**	**0.0721**	**27.6979**	**542.4226**	**570.1205**	**1.8285**	**0.0119**	**612.2191**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.17**	**6.87**	**0.28**	**3.13**	**0.00**	**6.18**	**0.63**	**0.00**	**6.24**	**1.84**	**3.62**	**6.26**	**6.14**	**5.55**	**19.38**	**6.19**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0712	0.1188	0.6322	2.7600e-003	0.1912	3.1700e-003	0.1944	0.0518	2.9300e-003	0.0547	0.0000	171.8242	171.8242	5.0700e-003	0.0000	171.9307
Unmitigated	0.0712	0.1188	0.6322	2.7600e-003	0.1912	3.1700e-003	0.1944	0.0518	2.9300e-003	0.0547	0.0000	171.8242	171.8242	5.0700e-003	0.0000	171.9307

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	226.80	244.44	209.16	506,301	506,301
Total	226.80	244.44	209.16	506,301	506,301

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.629311	0.058303	0.147059	0.076368	0.026204	0.003252	0.029759	0.004830	0.003411	0.010105	0.010495	0.000440	0.000462

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	238.3387	238.3387	0.0000	0.0000	238.3387
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	250.3408	250.3408	0.0000	0.0000	250.3408
NaturalGas Mitigated	0.0101	0.0861	0.0366	5.5000e-004		6.9600e-003	6.9600e-003		6.9600e-003	6.9600e-003	0.0000	99.7191	99.7191	1.9100e-003	1.8300e-003	100.3259
NaturalGas Unmitigated	0.0120	0.1028	0.0438	6.6000e-004		8.3100e-003	8.3100e-003		8.3100e-003	8.3100e-003	0.0000	119.0613	119.0613	2.2800e-003	2.1800e-003	119.7859

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.23112e+006	0.0120	0.1028	0.0438	6.6000e-004		8.3100e-003	8.3100e-003		8.3100e-003	8.3100e-003	0.0000	119.0613	119.0613	2.2800e-003	2.1800e-003	119.7859
Total		**0.0120**	**0.1028**	**0.0438**	**6.6000e-004**		**8.3100e-003**	**8.3100e-003**		**8.3100e-003**	**8.3100e-003**	**0.0000**	**119.0613**	**119.0613**	**2.2800e-003**	**2.1800e-003**	**119.7859**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

Apartments Mid Rise	1.86866e+006	0.0101	0.0861	0.0366	5.5000e-004		6.9600e-003	6.9600e-003		6.9600e-003	6.9600e-003	0.0000	99.7191	99.7191	1.9100e-003	1.8300e-003	100.3259
Total		**0.0101**	**0.0861**	**0.0366**	**5.5000e-004**		**6.9600e-003**	**6.9600e-003**		**6.9600e-003**	**6.9600e-003**	**0.0000**	**99.7191**	**99.7191**	**1.9100e-003**	**1.8300e-003**	**100.3259**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	911068	250.3408	0.0000	0.0000	250.3408
Total		**250.3408**	**0.0000**	**0.0000**	**250.3408**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	867389	238.3387	0.0000	0.0000	238.3387
Total		**238.3387**	**0.0000**	**0.0000**	**238.3387**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0399	0.0215	1.8646	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0565	3.0565	2.9100e-003	0.0000	3.1176
Unmitigated	1.0399	0.0215	1.8646	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0565	3.0565	2.9100e-003	0.0000	3.1176

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9842					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0558	0.0215	1.8646	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0565	3.0565	2.9100e-003	0.0000	3.1176
Total	**1.0399**	**0.0215**	**1.8646**	**1.0000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**	**0.0000**	**3.0565**	**3.0565**	**2.9100e-003**	**0.0000**	**3.1176**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9842					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0558	0.0215	1.8646	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0565	3.0565	2.9100e-003	0.0000	3.1176
Total	**1.0399**	**0.0215**	**1.8646**	**1.0000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**	**0.0000**	**3.0565**	**3.0565**	**2.9100e-003**	**0.0000**	**3.1176**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	33.6514	0.4280	0.0101	45.7724
Unmitigated	39.5755	0.5350	0.0126	54.7268

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.4188 / 10.351	39.5755	0.5350	0.0126	54.7268
Total		**39.5755**	**0.5350**	**0.0126**	**54.7268**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	13.1351 / 10.351	33.6514	0.4280	0.0101	45.7724
Total		**33.6514**	**0.4280**	**0.0101**	**45.7724**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	23.5307	1.3906	0.0000	52.7338
Unmitigated	23.5307	1.3906	0.0000	52.7338

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	115.92	23.5307	1.3906	0.0000	52.7338
Total		**23.5307**	**1.3906**	**0.0000**	**52.7338**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	115.92	23.5307	1.3906	0.0000	52.7338
Total		**23.5307**	**1.3906**	**0.0000**	**52.7338**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Zion Operational Program

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	257.30	1000sqft	5.91	257,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust acreage to match Google Earth estimate.

Vehicle Trips - Adjust Vehicle trips to match travel demand study.

Energy Use -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	OperationalYear	2014	2020

tblVehicleTrips	ST_TR	8.96	1.25
tblVehicleTrips	SU_TR	1.55	0.22
tblVehicleTrips	WD_TR	36.13	5.02

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1393	2.0000e-005	2.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6000e-003	4.6000e-003	1.0000e-005	0.0000	4.8600e-003
Energy	0.0282	0.2559	0.2150	1.5400e-003		0.0195	0.0195		0.0195	0.0195	0.0000	1,317.5311	1,317.5311	0.0523	0.0148	1,323.2262
Mobile	0.4407	0.8285	3.7848	0.0105	0.7221	0.0136	0.7357	0.1958	0.0125	0.2083	0.0000	719.0235	719.0235	0.0276	0.0000	719.6023
Waste						0.0000	0.0000		0.0000	0.0000	564.0794	0.0000	564.0794	33.3361	0.0000	1,264.1383
Water						0.0000	0.0000		0.0000	0.0000	10.2429	57.0839	67.3268	1.0546	0.0254	97.3403
Total	**1.6081**	**1.0844**	**4.0022**	**0.0120**	**0.7221**	**0.0330**	**0.7552**	**0.1958**	**0.0320**	**0.2278**	**574.3223**	**2,093.6431**	**2,667.9654**	**34.4707**	**0.0402**	**3,404.3119**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1393	2.0000e-005	2.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6000e-003	4.6000e-003	1.0000e-005	0.0000	4.8600e-003

Energy	0.0255	0.2316	0.1945	1.3900e-003		0.0176	0.0176		0.0176	0.0176	0.0000	1,253.5581	1,253.5581	0.0501	0.0140	1,258.9477
Mobile	0.4407	0.8285	3.7848	0.0105	0.7221	0.0136	0.7357	0.1958	0.0125	0.2083	0.0000	719.0235	719.0235	0.0276	0.0000	719.6023
Waste						0.0000	0.0000		0.0000	0.0000	564.0794	0.0000	564.0794	33.3361	0.0000	1,264.1383
Water						0.0000	0.0000		0.0000	0.0000	10.2429	57.0839	67.3268	1.0544	0.0253	97.3239
Total	**1.6055**	**1.0601**	**3.9818**	**0.0119**	**0.7221**	**0.0312**	**0.7533**	**0.1958**	**0.0301**	**0.2259**	**574.3223**	**2,029.6701**	**2,603.9924**	**34.4683**	**0.0393**	**3,340.0170**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.17**	**2.24**	**0.51**	**1.25**	**0.00**	**5.60**	**0.24**	**0.00**	**5.79**	**0.81**	**0.00**	**3.06**	**2.40**	**0.01**	**2.19**	**1.89**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4407	0.8285	3.7848	0.0105	0.7221	0.0136	0.7357	0.1958	0.0125	0.2083	0.0000	719.0235	719.0235	0.0276	0.0000	719.6023
Unmitigated	0.4407	0.8285	3.7848	0.0105	0.7221	0.0136	0.7357	0.1958	0.0125	0.2083	0.0000	719.0235	719.0235	0.0276	0.0000	719.6023

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	1,291.90	320.34	55.42	1,911,192	1,911,192
Total	1,291.90	320.34	55.42	1,911,192	1,911,192

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.631289	0.058518	0.148045	0.077273	0.026007	0.003276	0.026188	0.004043	0.003129	0.010899	0.010305	0.000529	0.000500

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,001.4385	1,001.4385	0.0453	9.3700e-003	1,005.2937
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,038.9391	1,038.9391	0.0470	9.7200e-003	1,042.9387
NaturalGas Mitigated	0.0255	0.2316	0.1945	1.3900e-003		0.0176	0.0176		0.0176	0.0176	0.0000	252.1196	252.1196	4.8300e-003	4.6200e-003	253.6539
NaturalGas Unmitigated	0.0282	0.2559	0.2150	1.5400e-003		0.0195	0.0195		0.0195	0.0195	0.0000	278.5920	278.5920	5.3400e-003	5.1100e-003	280.2875

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	5.22062e+006	0.0282	0.2559	0.2150	1.5400e-003		0.0195	0.0195		0.0195	0.0195	0.0000	278.5920	278.5920	5.3400e-003	5.1100e-003	280.2875
Total		**0.0282**	**0.2559**	**0.2150**	**1.5400e-003**		**0.0195**	**0.0195**		**0.0195**	**0.0195**	**0.0000**	**278.5920**	**278.5920**	**5.3400e-003**	**5.1100e-003**	**280.2875**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	4.72454e+006	0.0255	0.2316	0.1945	1.3900e-003		0.0176	0.0176		0.0176	0.0176	0.0000	252.1196	252.1196	4.8300e-003	4.6200e-003	253.6539
Total		**0.0255**	**0.2316**	**0.1945**	**1.3900e-003**		**0.0176**	**0.0176**		**0.0176**	**0.0176**	**0.0000**	**252.1196**	**252.1196**	**4.8300e-003**	**4.6200e-003**	**253.6539**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	3.57132e+006	1,038.9391	0.0470	9.7200e-003	1,042.9387

Total		**1,038.9391**	**0.0470**	**9.7200e-003**	**1,042.9387**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	3.44242e+006	1,001.4385	0.0453	9.3700e-003	1,005.2937
Total		**1,001.4385**	**0.0453**	**9.3700e-003**	**1,005.2937**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1393	2.0000e-005	2.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6000e-003	4.6000e-003	1.0000e-005	0.0000	4.8600e-003
Unmitigated	1.1393	2.0000e-005	2.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6000e-003	4.6000e-003	1.0000e-005	0.0000	4.8600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6000e-003	4.6000e-003	1.0000e-005	0.0000	4.8600e-003
Total	**1.1393**	**2.0000e-005**	**2.3800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.6000e-003**	**4.6000e-003**	**1.0000e-005**	**0.0000**	**4.8600e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6000e-003	4.6000e-003	1.0000e-005	0.0000	4.8600e-003
Total	**1.1393**	**2.0000e-005**	**2.3800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.6000e-003**	**4.6000e-003**	**1.0000e-005**	**0.0000**	**4.8600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.3268	1.0544	0.0253	97.3239
Unmitigated	67.3268	1.0546	0.0254	97.3403

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	32.2861 / 6.14974	67.3268	1.0546	0.0254	97.3403
Total		**67.3268**	**1.0546**	**0.0254**	**97.3403**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	32.2861 / 6.14974	67.3268	1.0544	0.0253	97.3239
Total		**67.3268**	**1.0544**	**0.0253**	**97.3239**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	564.0794	33.3361	0.0000	1,264.1383
Unmitigated	564.0794	33.3361	0.0000	1,264.1383

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	2778.84	564.0794	33.3361	0.0000	1,264.1383
Total		**564.0794**	**33.3361**	**0.0000**	**1,264.1383**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	2778.84	564.0794	33.3361	0.0000	1,264.1383
Total		**564.0794**	**33.3361**	**0.0000**	**1,264.1383**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Zion Operational Project

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	85.00	1000sqft	0.72	85,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Theis run calculates reduction in emissions from demolition of 3 buildings.

Land Use - Adjust acreage to match Google Earth estimate.

Vehicle Trips - No reduction in vehicle trips assumed at the project level from demolition. Occupants shift to rennovated hospital per PD.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblLandUse	LotAcreage	1.95	0.72
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00

tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3764	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Energy	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	435.2512	435.2512	0.0173	4.9000e-003	437.1326
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	186.3457	0.0000	186.3457	11.0127	0.0000	417.6127
Water						0.0000	0.0000		0.0000	0.0000	3.3838	18.8579	22.2417	0.3484	8.3800e-003	32.1567
Total	**0.3857**	**0.0846**	**0.0718**	**5.1000e-004**	**0.0000**	**6.4300e-003**	**6.4300e-003**	**0.0000**	**6.4300e-003**	**6.4300e-003**	**189.7295**	**454.1107**	**643.8401**	**11.3784**	**0.0133**	**886.9037**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3764	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Energy	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	435.2512	435.2512	0.0173	4.9000e-003	437.1326
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Waste						0.0000	0.0000		0.0000	0.0000	186.3457	0.0000	186.3457	11.0127	0.0000	417.6127
Water						0.0000	0.0000		0.0000	0.0000	3.3838	18.8579	22.2417	0.3483	8.3700e-003	32.1513
Total	**0.3857**	**0.0846**	**0.0718**	**5.1000e-004**	**0.0000**	**6.4300e-003**	**6.4300e-003**	**0.0000**	**6.4300e-003**	**6.4300e-003**	**189.7295**	**454.1107**	**643.8401**	**11.3783**	**0.0133**	**886.8983**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.08**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627577	0.058271	0.149142	0.080550	0.026862	0.003412	0.025393	0.003562	0.003105	0.011067	0.009995	0.000558	0.000506

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	343.2174	343.2174	0.0155	3.2100e-003	344.5386
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	343.2174	343.2174	0.0155	3.2100e-003	344.5386
NaturalGas Mitigated	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940
NaturalGas Unmitigated	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	1.72465e+006	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940
Total		**9.3000e-003**	**0.0845**	**0.0710**	**5.1000e-004**		**6.4300e-003**	**6.4300e-003**		**6.4300e-003**	**6.4300e-003**	**0.0000**	**92.0339**	**92.0339**	**1.7600e-003**	**1.6900e-003**	**92.5940**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	1.72465e+006	9.3000e-003	0.0845	0.0710	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.0339	92.0339	1.7600e-003	1.6900e-003	92.5940
Total		**9.3000e-003**	**0.0845**	**0.0710**	**5.1000e-004**		**6.4300e-003**	**6.4300e-003**		**6.4300e-003**	**6.4300e-003**	**0.0000**	**92.0339**	**92.0339**	**1.7600e-003**	**1.6900e-003**	**92.5940**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	1.1798e+006	343.2174	0.0155	3.2100e-003	344.5386
Total		**343.2174**	**0.0155**	**3.2100e-003**	**344.5386**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	1.1798e+006	343.2174	0.0155	3.2100e-003	344.5386
Total		**343.2174**	**0.0155**	**3.2100e-003**	**344.5386**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3764	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Unmitigated	0.3764	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0443					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Total	**0.3764**	**1.0000e-005**	**8.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5200e-003**	**1.5200e-003**	**0.0000**	**0.0000**	**1.6100e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0443					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5200e-003	1.5200e-003	0.0000	0.0000	1.6100e-003
Total	**0.3764**	**1.0000e-005**	**8.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5200e-003**	**1.5200e-003**	**0.0000**	**0.0000**	**1.6100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	22.2417	0.3483	8.3700e-003	32.1513
Unmitigated	22.2417	0.3484	8.3800e-003	32.1567

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	10.6658 / 2.03159	22.2417	0.3484	8.3800e-003	32.1567
Total		**22.2417**	**0.3484**	**8.3800e-003**	**32.1567**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	10.6658 / 2.03159	22.2417	0.3483	8.3700e-003	32.1513
Total		**22.2417**	**0.3483**	**8.3700e-003**	**32.1513**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	186.3457	11.0127	0.0000	417.6127
Unmitigated	186.3457	11.0127	0.0000	417.6127

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	918	186.3457	11.0127	0.0000	417.6127
Total		**186.3457**	**11.0127**	**0.0000**	**417.6127**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Medical Office Building	918	186.3457	11.0127	0.0000	417.6127
Total		**186.3457**	**11.0127**	**0.0000**	**417.6127**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCSF Mission Center

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	100.00	1000sqft	1.40	100,000.00	0
Enclosed Parking with Elevator	95.00	1000sqft	1.00	95,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjust CO2 intensity factor to match PG&E estimate for latest predicted year available (2020).

Land Use - Adjust acreage to match GoogleEarth estimate.

Vehicle Trips - Adjust trip rates to match travel demand study.

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblLandUse	LotAcreage	2.30	1.40

tblLandUse	LotAcreage	2.18	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2025
tblVehicleTrips	ST_TR	2.37	1.16
tblVehicleTrips	SU_TR	0.98	0.48
tblVehicleTrips	WD_TR	11.01	5.40

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8139	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4800e-003	3.4800e-003	1.0000e-005	0.0000	3.6700e-003
Energy	0.0109	0.0995	0.0836	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003	0.0000	375.0814	375.0814	0.0288	7.5100e-003	378.0119
Mobile	0.1656	0.3184	1.4657	5.3200e-003	0.3694	6.5100e-003	0.3759	0.1001	6.0200e-003	0.1062	0.0000	345.1725	345.1725	0.0115	0.0000	345.4136
Waste						0.0000	0.0000		0.0000	0.0000	18.8782	0.0000	18.8782	1.1157	0.0000	42.3072
Water						0.0000	0.0000		0.0000	0.0000	5.6387	17.6659	23.3045	0.5809	0.0140	39.8562
Total	**0.9904**	**0.4179**	**1.5510**	**5.9200e-003**	**0.3694**	**0.0141**	**0.3835**	**0.1001**	**0.0136**	**0.1137**	**24.5168**	**737.9232**	**762.4400**	**1.7368**	**0.0216**	**805.5925**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.8139	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4800e-003	3.4800e-003	1.0000e-005	0.0000	3.6700e-003
Energy	8.8600e-003	0.0806	0.0677	4.8000e-004		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	331.5266	331.5266	0.0261	6.6500e-003	334.1362
Mobile	0.1656	0.3184	1.4657	5.3200e-003	0.3694	6.5100e-003	0.3759	0.1001	6.0200e-003	0.1062	0.0000	345.1725	345.1725	0.0115	0.0000	345.4136
Waste						0.0000	0.0000		0.0000	0.0000	18.8782	0.0000	18.8782	1.1157	0.0000	42.3072
Water						0.0000	0.0000		0.0000	0.0000	5.6387	17.6659	23.3045	0.5808	0.0140	39.8472
Total	**0.9884**	**0.3990**	**1.5351**	**5.8000e-003**	**0.3694**	**0.0126**	**0.3820**	**0.1001**	**0.0122**	**0.1123**	**24.5168**	**694.3684**	**718.8852**	**1.7340**	**0.0207**	**761.7079**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.21**	**4.52**	**1.02**	**2.03**	**0.00**	**10.23**	**0.38**	**0.00**	**10.60**	**1.27**	**0.00**	**5.90**	**5.71**	**0.16**	**4.08**	**5.45**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1656	0.3184	1.4657	5.3200e-003	0.3694	6.5100e-003	0.3759	0.1001	6.0200e-003	0.1062	0.0000	345.1725	345.1725	0.0115	0.0000	345.4136
Unmitigated	0.1656	0.3184	1.4657	5.3200e-003	0.3694	6.5100e-003	0.3759	0.1001	6.0200e-003	0.1062	0.0000	345.1725	345.1725	0.0115	0.0000	345.4136

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	540.00	116.00	48.00	977,750	977,750
Total	540.00	116.00	48.00	977,750	977,750

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.630348	0.058305	0.148471	0.076665	0.026166	0.003250	0.027367	0.004239	0.003204	0.010671	0.010334	0.000497	0.000484

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	243.8285	243.8285	0.0244	5.0400e-003	245.9044
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	266.8062	266.8062	0.0267	5.5200e-003	269.0777
NaturalGas Mitigated	8.8600e-003	0.0806	0.0677	4.8000e-004		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	87.6981	87.6981	1.6800e-003	1.6100e-003	88.2318
NaturalGas Unmitigated	0.0109	0.0995	0.0836	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003	0.0000	108.2752	108.2752	2.0800e-003	1.9900e-003	108.9341

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	2.029e+006	0.0109	0.0995	0.0836	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003	0.0000	108.2752	108.2752	2.0800e-003	1.9900e-003	108.9341
Total		**0.0109**	**0.0995**	**0.0836**	**6.0000e-004**		**7.5600e-003**	**7.5600e-003**		**7.5600e-003**	**7.5600e-003**	**0.0000**	**108.2752**	**108.2752**	**2.0800e-003**	**1.9900e-003**	**108.9341**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.6434e+006	8.8600e-003	0.0806	0.0677	4.8000e-004		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	87.6981	87.6981	1.6800e-003	1.6100e-003	88.2318
Total		**8.8600e-003**	**0.0806**	**0.0677**	**4.8000e-004**		**6.1200e-003**	**6.1200e-003**		**6.1200e-003**	**6.1200e-003**	**0.0000**	**87.6981**	**87.6981**	**1.6800e-003**	**1.6100e-003**	**88.2318**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	640300	84.2262	8.4200e-003	1.7400e-003	84.9433
General Office Building	1.388e+006	182.5800	0.0183	3.7800e-003	184.1345
Total		**266.8062**	**0.0267**	**5.5200e-003**	**269.0777**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	565820	74.4290	7.4400e-003	1.5400e-003	75.0627
General Office Building	1.2878e+006	169.3995	0.0169	3.5000e-003	170.8418
Total	**1.85E+06**	**243.8285**	**0.0244**	**5.0400e-003**	**245.9044**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8139	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4800e-003	3.4800e-003	1.0000e-005	0.0000	3.6700e-003
Unmitigated	0.8139	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4800e-003	3.4800e-003	1.0000e-005	0.0000	3.6700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7616					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4800e-003	3.4800e-003	1.0000e-005	0.0000	3.6700e-003
Total	**0.8139**	**2.0000e-005**	**1.7900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4800e-003**	**3.4800e-003**	**1.0000e-005**	**0.0000**	**3.6700e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7616					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4800e-003	3.4800e-003	1.0000e-005	0.0000	3.6700e-003
Total	**0.8139**	**2.0000e-005**	**1.7900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4800e-003**	**3.4800e-003**	**1.0000e-005**	**0.0000**	**3.6700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	23.3045	0.5808	0.0140	39.8472
Unmitigated	23.3045	0.5809	0.0140	39.8562

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	17.7734 / 10.8934	23.3045	0.5809	0.0140	39.8562
Total		**23.3045**	**0.5809**	**0.0140**	**39.8562**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

General Office Building	17.7734 / 10.8934	23.3045	0.5808	0.0140	39.8472
Total		**23.3045**	**0.5808**	**0.0140**	**39.8472**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.8782	1.1157	0.0000	42.3072
Unmitigated	18.8782	1.1157	0.0000	42.3072

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	93	18.8782	1.1157	0.0000	42.3072
Total		**18.8782**	**1.1157**	**0.0000**	**42.3072**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	93	18.8782	1.1157	0.0000	42.3072
Total		**18.8782**	**1.1157**	**0.0000**	**42.3072**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

TECHNICAL ANALYSIS
Health Risk Assessment

Toxic Air Contaminants – Project Construction

Impact AIR-3: The Project would expose persons to substantial levels of TACs, during short-term construction activities, which may lead to adverse health effects (Criterion 4). (Less than Significant)

Project construction activities would produce DPM and $PM_{2.5}$ emissions due to combustion equipment such as loaders, backhoes, and cranes, as well as haul truck trips. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences and schools). These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Detailed assumptions and methodology for the HRA are included in **Appendix HRA**.

Parnassus Heights. A summary of the health impacts related to construction of Parnassus Heights are found in **Table 4.2-1**.

TABLE 4.2-1
CONSTRUCTION-RELATED HEALTH IMPACTS - PARNASSUS HEIGHTS

Receptor Type	Cancer Risk (persons per million)	Chronic Impact	Acute Impact	PM2.5 Concentration ($\mu g/m^3$)
New Residence (adult/child)	0.05/0.59	<0.01	<0.01	<0.01
School Children	0.02	<0.01	<0.01	<0.01
Existing Residence (adult/child)	0.03/0.29	<0.01	<0.01	<0.01
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

As shown in **Table 4.2-1**, the maximum cancer risk for the new residence-adult and residence-child associated with the project (located at Millberry Union and UC Hall) would be 0.1 and 0.6 persons per million, respectively. The maximum cancer risk for an existing residence-adult and residence-child (located to the north-northeast-northwest of the project site and Aldea Housing) would be 0.1 and 0.3 persons per million, respectively. The maximum cancer risk for a school-child receptor (such as Gratton Elementary School, Haight Ashbury Community Nursery School, and Marilyn Reed Lucia Child Care) would be less than 0.1 persons per million. Thus, the cancer risk due to construction activities alone is below the BAAQMD threshold of 10 per million and would be less than significant.

The chronic HI would be less than 0.1 at all receptors. The chronic HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant. The acute HI would be less than 0.1 at all receptors including recreational receptors at Mount Sutro Open Space Reserve. The acute HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.1 µg/m^3 for the new residences associated with the project, a school-child and the existing residences. The construction-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 µg/m^3, and hence is considered less than significant.

Mitigation: None required.

Mission Bay. A summary of the health impacts related to construction of Mission Bay are found in **Table 4.2-2**.

TABLE 4.2-2
CONSTRUCTION-RELATED HEALTH IMPACTS - MISSION BAY

Receptor Type	Cancer Risk (persons per million)	Chronic Impact	Acute Impact	PM2.5 Concentration (µg/m^3)
New Residence (adult/child)	0.63/7.11	0.01	0.08	0.07
School Children	0.35	0.01	0.01	0.03
Existing Residence (adult/child)	0.73/8.21	0.01	0.17	0.05
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

As shown in **Table 4.2-2**, the maximum cancer risk for the new residence-adult and residence-child associated with the project (Mission Bay Housing within Block 15) would be 0.7 and 8.2 persons per million, respectively. The maximum cancer risk for an existing residence-adult and residence-child (Mission Bay Housing within Block 20) would be 0.6 and 7.1 persons per million, respectively. No school children receptors are located within the project area. Thus, the cancer risk due to construction activities alone is below the BAAQMD threshold of 10 per million and would be less than significant.

The chronic HI would be less than 0.1 at all receptors. The chronic HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant. The acute HI would be less than 0.2 at all receptors including recreational receptors within the Campus Sport Field, Koret Quad, and Mission Creek Park. The acute HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.1 µg/m^3 for the new residences associated with the project, a school-child and the existing residences. The construction-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 µg/m^3, and hence is considered less than significant.

Mitigation: None required.

Mount Zion. A summary of the health impacts related to construction of Mount Zion are found in **Table 4.2-3**.

TABLE 4.2-3CONSTRUCTION-RELATED HEALTH IMPACTS - MOUNT ZION

Receptor Type	Cancer Risk (persons per million)	Chronic Impact	Acute Impact	PM2.5 Concentration ($\mu g/m^3$)
School Children	0.01	0.01	0.01	0.01
Existing Residence (adult/child)	0.05/0.54	0.01	0.01	0.01
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

As shown in **Table 4.2-3**, the maximum cancer risk for an existing residence-adult and residence-child (located to the south of Sutter and west of Divisadero) would be 0.1 and 0.5 persons per million, respectively. The maximum cancer risk for a school-child receptor (Ben Franklin Middle School and Gateway High School) would be less than 0.1 persons per million. Thus, the cancer risk due to construction activities alone is below the BAAQMD threshold of 10 per million and would be less than significant.

The chronic HI would be less than 0.1 at all receptors. The chronic HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant. The acute HI would be less than 0.1 at all receptors including Hamilton Recreational Center. The acute HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.1 $\mu g/m^3$ for the school-child and the existing residences. The construction-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Mission Center. A summary of the health impacts related to construction of Mission Center are found in **Table 4.2-4**.

TABLE 4.2-4
CONSTRUCTION-RELATED HEALTH IMPACTS - MISSION CENTER

Receptor Type	Cancer Risk (persons per million)	Chronic Impact	Acute Impact	PM2.5 Concentration ($\mu g/m^3$)
School Children	0.04	0.01	0.01	0.01
Existing Residence (adult/child)	0.64/7.19	0.02	0.21	0.08
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

As shown in **Table 4.2-4**, the maximum cancer risk for an existing residence-adult and residence-child (located to the west of the project site) would be 0.6 and 7.2 persons per million, respectively. The maximum cancer risk for a school-child receptor (including Marshall Elementary School) would be less than 0.1 persons per million. Thus, the cancer risk due to construction activities alone is below the BAAQMD threshold of 10 per million and would be less than significant.

The chronic HI would be less than 0.1 at all receptors. The chronic HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant. The acute HI would be 0.2 or less at all receptors. The acute HI would be below the BAAQMD threshold of 1 and the impact of the Project would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be less than 0.1 $\mu g/m^3$ for the school-child and the existing residences. The construction-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

A summary of the cancer risks related to construction for the UCSF LRDP is found in **Table 4.2-5**. All values are below the BAAQMD threshold of 10 per million and would be less than significant.

TABLE 4.2-5
CONSTRUCTION-RELATED CANCER RISKS - UCSF LRDP

Project	New Receptor (adult/child)	Existing Receptor (adult/child)	School
Parnassus Heights	0.05/0.59	0.03/0.29	0.02
Mission Bay	0.63/7.11	0.73/8.21	0.35
Mount Zion	-	0.05/0.54	0.01
Mission Center	-	0.64/7.19	0.04

SOURCE: KB Environmental Sciences, Inc., 2014.

Toxic Air Contaminants – Project Operation

The Project would expose persons to substantial levels of TACs during Project operations, which may lead to adverse health effects (Criterion 4). (Less than Significant)

Project operation would produce DPM and $PM_{2.5}$ emissions due to motor vehicle traffic including employees, customers, deliveries, and new residences. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts.

Mission Bay. A summary of the health impacts related to operations of Mission Bay are found in **Table 4.2-6**.

TABLE 4.2-6
OPERATION-RELATED HEALTH IMPACTS - MISSION BAY

Receptor Type	Cancer Risk (persons per million)	Chronic Impact	Acute Impact	PM2.5 Concentration ($\mu g/m^3$)
New Residence (adult/child)	0.85/0.41	<0.01	<0.01	<0.01
School Children	0.17	<0.01	<0.01	<0.01
Existing Residence (adult/child)	0.98/0.47	<0.01	<0.01	<0.01
BAAQMD Significance Criteria	10	1	1	0.3
Significant Impact?	No	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

As shown above in **Table 4.2-6**, the maximum cancer risk for the new residence-adult and residence-child at the Project Site would be 0.9 and 0.4 persons per million, respectively. The maximum cancer risk for an existing residence-adult and residence-child would be 1.0 and 0.5 persons per million, respectively. The maximum cancer risk for a school-child receptor would be 0.1 persons per million. Thus, the cancer risk is below the BAAQMD threshold of 10 per million and would be less than significant.

The chronic HI would be less than 0.1 at all receptors. The chronic HI would be well below the BAAQMD threshold of 1 and the impact of the Project would be less than significant. The acute HI would be less than 0.1 at all receptors. The acute HI would be well below the BAAQMD threshold of 1 and the impact of the Project would be less than significant.

The maximum annual $PM_{2.5}$ concentrations would be 0.1 $\mu g/m^3$ for the new residences associated with the project, a school-child receptor, and the existing residences. The operation-related annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Toxic Air Contaminants – New Receptors

The Project would expose persons (new receptors) to substantial levels of TACs, which may lead to adverse health effects (Criterion 4). (Less than Significant)

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of health risk impacts for new receptors resulting from the Project. The method for determining health risk requires the review of health risk from permitted sources and major

roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source), then adding the project impacts to determine whether the health risk thresholds for new receptors are exceeded.

BAAQMD has developed a geo-referenced database of permitted emissions sources throughout the San Francisco Bay Area, and has developed the Stationary Source Risk & Hazard Analysis Tool (dated May 2011) for estimating cumulative health risks from permitted sources. Eight permitted sources are located within 1,000 feet of new residences associated with the Project and included in the cumulative analysis.

BAAQMD has also developed a geo-referenced database of major roadways throughout the San Francisco Bay Area and has developed the *Highway Screening Analysis Tool (*dated May 2011*)* for estimating cumulative health risks from roadways. No major roadways are near the Parnassus Heights or Mount Zion project sites. Interstate 280 is located adjacent (approximately 400 feet to the west) to the Mission Bay project. US 101 is located to the north of the Mission Center project site (approximately 640 feet to the north).

BAAQMD *CEQA Air Quality Guidelines* also require the inclusion of surface streets within 1,000 feet of the project with annual average daily traffic (AADT) of 10,000 or greater[1].

Upon review the health impacts from Parnassus Avenue with 11,700 AADT was included for the Parnassus Heights. Foe the Mission Bay project, Third Street (30,265 AADT), 7th Street (22,188 AADT), and 16th Street (20,436 AADT) were included. The Mount Zion included Divisadero Street and Geary Boulevard. Mission Center included the roadways of 14th Street, Van Ness Avenue (52,718 AADT), 15th Street, Folsom Street, and Harrison Street.

A summary of the cumulative health impacts for the new residences under the Parnassus Heights project is found in **Table 4.2-7**.

Notably, for individual projects/new receptors, the threshold of significance is based the source with the highest cancer risk, $PM_{2.5}$ concentration, or hazard in comparison to other sources within the 1,000 foot radius of the receptor.[2]

[1] BAAQMD County Surface Street Screening Tables, May 2011 and CEHTP Traffic Linkage Service Demonstration, http://www.ehib.org/traffic_tool.jsp

[2] BAAQMD, *Recommended Methods for Screening and Modeling Local Risk and Hazards*, May 2011.

TABLE 4. 2-7
HEALTH IMPACTS FOR NEW RECEPTORS - PARNASSUS HEIGHTS

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Hazard Impact	PM2.5 Concentration ($\mu g/m^3$)
2479	UCSF/Parnassus	3rd Avenue/Parnassus	4.59	<0.01	0.01
		Parnassus Avenue	0.90	<0.01	0.09
		Proposed Project (adult/child)	0.05/0.59	<0.01	<0.01
		Highest Single Source Impact	4.59	<0.01	0.09
		BAAQMD Significance Criteria (new receptor)	10	1	0.3
		Potentially Significant Impact?	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

The health impacts from nearby sources in the area would have an impact on new residence associated with the Parnassus Heights project. The highest cancer risk from any of the nearby sources would be 4.6 persons per million. Thus, the cancer risk for new receptors is below the BAAQMD threshold of 10 per million and would be less than significant.

The highest hazard index from nearby sources would be less than 0.1; well below the BAAQMD threshold of 1 and the impact of the proposed residences of the Project would be less than significant. The highest annual $PM_{2.5}$ concentrations would be 0.1 $\mu g/m^3$ as a result of roadway traffic on Parnassus Avenue. This $PM_{2.5}$ concentration at new residences would be below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

A summary of the cumulative health impacts for the new residences under the Mission Bay project is found in **Table 4.2-8**.

TABLE 4. 2-8
HEALTH IMPACTS FOR NEW RECEPTORS - MISSION BAY

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Hazard Impact	PM2.5 Concentration ($\mu g/m^3$)
13160	UCSF/Mission Bay	600 16th Street	2.89	<0.01	0.01
17357	Alexandrea Real Estate	1700 Owens Street	3.26	<0.01	<0.01
15874	David Gladstone	1650 Owens Street	0.54	<0.01	0.02
19073	Alexandrea Real Estate	1500 Owens Street	1.11	0.01	<0.01
		I-280	5.32	0.01	0.05
		4th Street	0.34	<0.01	0.01
		7th Street	0.29	<0.01	0.01
		16th Street	0.39	<0.01	0.01
		Proposed Project (adult/child)	0.63/7.11	0.01	0.07
		Highest Single Source Impact	7.11	0.01	0.07
		BAAQMD Significance Criteria (new receptor)	10	1	0.3
		Potentially Significant Impact?	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

The health impacts from nearby sources in the area would have an impact on new residence associated with the Mission Bay project. The highest cancer risk from any of the nearby sources would be 7.1 persons per million. Thus, the cancer risk for new receptors is below the BAAQMD threshold of 10 per million and would be less than significant.

The highest hazard index from nearby sources would be less than 0.1; well below the BAAQMD threshold of 1 and the impact of the proposed residences of the Project would be less than significant. The highest annual $PM_{2.5}$ concentrations would be 0.1 $\mu g/m^3$. This $PM_{2.5}$ concentration at new residences would be below the BAAQMD threshold of 0.3 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Cumulative Impacts

Toxic Air Contaminants – Cumulative Exposure

The Project would cumulatively expose persons to substantial levels of toxic air contaminants (TACs), which may lead to adverse health effects (Criterion 4). (Less than Significant)

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of cumulative health risk impacts for new projects. The method for determining health risk requires the review of health risk from permitted sources and major roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source), then adding the project impacts

to determine whether the cumulative health risk thresholds are exceeded. A summary of the cumulative health impacts for the existing residences for Parnassus Heights are found in **Table 4.2-9**.

TABLE 4.2-9
CUMULATIVE HEALTH IMPACTS - PARNASSUS HEIGHTS

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Chronic Hazard Impact	PM2.5 Concentration ($\mu g/m^3$)
2479	UCSF/Parnassus	3rd Avenue/Parnassus	4.59	<0.01	0.01
		Parnassus Avenue	0.90	<0.01	0.09
		Proposed Project (adult/child)	0.03/0.29	<0.01	<0.01
		Grand Total (adult/child)	**5.52/5.78**	**0.03**	**0.11**
		BAAQMD Cumulative Significance Criteria	100	10	0.8
		Significant Cumulative Impact?	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

The health impacts from the Project construction and operations plus other sources (permitted sources and roadways) in the area would have a cumulative impact on nearby residence receptors. The maximum cumulative cancer risk for existing residence would be 5.5 and 5.8 persons per million for residence-adult and residence child, respectively. Thus, the cumulative cancer risk is below the BAAQMD threshold of 100 per million and would be less than significant.

The cumulative HI would be less than 0.1. The HI would be well below the BAAQMD threshold of 10 and the impact of the Project would be less than significant. The maximum cumulative annual $PM_{2.5}$ concentrations would be 0.1 $\mu g/m^3$. The cumulative annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.8 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

A summary of the cumulative health impacts for the existing residences for Mission Bay are found in **Table 4.2-10**.

TABLE 4.2-10
CUMULATIVE HEALTH IMPACTS - MISSION BAY

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Chronic Hazard Impact	PM2.5 Concentration ($\mu g/m^3$)
13160	UCSF/Mission Bay	600 16th Street	2.89	<0.01	0.01
17357	Alexandrea Real Estate	1700 Owens Street	3.26	<0.01	<0.01
15874	David Gladstone	1650 Owens Street	0.54	<0.01	0.02
19073	Alexandrea Real Estate	1500 Owens Street	1.11	0.01	<0.01
		I-280	5.32	0.01	0.05
		4th Street	0.34	<0.01	0.01
		7th Street	0.29	<0.01	0.01
		16th Street	0.39	<0.01	0.01
		Proposed Project (adult/child)	0.73/8.21	0.01	0.07
		Grand Total (adult/child)	**14.9/22.4**	**0.09**	**0.2**
		BAAQMD Cumulative Significance Criteria	100	10	0.8
		Significant Cumulative Impact?	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

The health impacts from the Project construction and operations plus other sources (permitted sources and roadways) in the area would have a cumulative impact on nearby residence receptors. The maximum cumulative cancer risk for existing residence would be 14.9 and 22.4 persons per million for residence-adult and residence child, respectively. Thus, the cumulative cancer risk is below the BAAQMD threshold of 100 per million and would be less than significant.

The cumulative HI would be less than 0.1. The HI would be well below the BAAQMD threshold of 10 and the impact of the Project would be less than significant. The maximum cumulative annual $PM_{2.5}$ concentrations would be 0.2 $\mu g/m^3$. The cumulative annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.8 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

A summary of the cumulative health impacts for the existing residences for Mount Zion are found in **Table 4.2-11**.

TABLE 4.2-11
CUMULATIVE HEALTH IMPACTS - MOUNT ZION

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Chronic Hazard Impact	PM2.5 Concentration ($\mu g/m^3$)
9701	Town Cleaners	2840 California Street	1.37	0.02	<0.01
5755	UCSF/Mt Zion	1600 Divisadero	2.46	<0.01	0.01
8462	Sunshine Cleaners	1818 Divisadero	-	-	-
3829	Lofrano and Sons	1745 Divisadero	<0.01	<0.01	0.01
13887	Kaiser Permanente MOB	2238 Geary Blvd	6.45	0.02	0.11
13888	Kaiser Permanente Employee Garage	2130 O'Farrell Street	3.79	0.02	0.02
13889	Kaiser Permanente Public Garage	2190 O'Farrell Street	2.63	0.02	0.01
		Bush Street	0.60	<0.01	0.02
		Divisadero Street	0.54	<0.01	0.02
		Geary Boulevard	1.84	<0.01	0.06
		Proposed Project (adult/child)	0.05/0.54	0.01	0.01
		Grand Total (adult/child)	**19.7/20.2**	**0.14**	**0.28**
		BAAQMD Cumulative Significance Criteria	100	10	0.8
		Significant Cumulative Impact?	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

The health impacts from the Project construction plus other sources (permitted sources and roadways) in the area would have a cumulative impact on nearby residence receptors. The maximum cumulative cancer risk for existing residence would be 19.7 and 20.2 persons per million for residence-adult and residence-child, respectively. Thus, the cumulative cancer risk is below the BAAQMD threshold of 100 per million and would be less than significant.

The cumulative HI would be 0.1. The HI would be well below the BAAQMD threshold of 10 and the impact of the Project would be less than significant. The maximum cumulative annual $PM_{2.5}$ concentrations would be 0.3 $\mu g/m^3$. The cumulative annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.8 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

A summary of the cumulative health impacts for the existing residences for Mission Center are found in **Table 4.2-12**.

TABLE 4.2-12
CUMULATIVE HEALTH IMPACTS - MISSION CENTER

Site #	Facility Type	Address/Source	Cancer Risk (persons per million)	Chronic Hazard Impact	PM2.5 Concentration ($\mu g/m^3$)
7563	Major Auto Body Repair	240 12th Street	-	-	-
17792	Sheriff's Dept	120 14th Street	3.91	<0.01	<0.01
18193	Van Ness Auto Body	164 14th Street	-	-	-
15661	UCSF/Mission Center	1855 Folsom Street	3.06	<0.01	0.01
19811	Folsom Auto Body	1728 Folsom Street	-	-	-
5287	Aliato's Garage	1835 Folsom Street	0.10	<0.01	<0.01
3796	Anderson Enterprises	165 14th Street	-	-	-
8347	Avenue Auto Body	333 South Van Ness Avenue	-	-	-
G11266	Hetrz Equipment Rental	435 South Van Ness Avenue	<0.01	<0.01	<0.01
G10573	Auto City Food Mart	501 South Van Ness Avenue	1.01	0.06	<0.01
19459	SPCA-SF	201 Alabama Street	8.67	<0.01	0.03
		US101	3.71	0.01	0.03
		14th Street	0.23	<0.01	0.01
		Van Ness Avenue	1.68	<0.01	0.06
		15th Street	4.35	<0.01	0.15
		Folsom Street	2.19	<0.01	0.08
		Harrison Street	0.36	<0.01	0.01
		Proposed Project (adult/child)	0.64/7.19	0.01	0.08
		Grand Total (adult/child)	**29.9/36.5**	**0.18**	**0.51**
		BAAQMD Cumulative Significance Criteria	100	10	0.8
		Significant Cumulative Impact?	No	No	No

SOURCE: KB Environmental Sciences, Inc., 2014.

The health impacts from the Project construction and operations plus other sources (permitted sources and roadways) in the area would have a cumulative impact on nearby residence receptors. The maximum cumulative cancer risk for existing residence would be 29.9 and 36.5 persons per million for residence-adult and residence child, respectively. Thus, the cumulative cancer risk is below the BAAQMD threshold of 100 per million and would be less than significant.

The cumulative HI would be 0.2. The HI would be well below the BAAQMD threshold of 10 and the impact of the Project would be less than significant. The maximum cumulative annual $PM_{2.5}$ concentrations would be 0.5 $\mu g/m^3$. The cumulative annual $PM_{2.5}$ concentration is below the BAAQMD threshold of 0.8 $\mu g/m^3$, and hence is considered less than significant.

Mitigation: None required.

Health Risk Assessment

A health risk assessment (HRA) is accomplished in four steps; hazards identification, exposure assessment, toxicity assessment, and risk characterization. These steps cover the estimation of air emissions, the estimation of the air concentrations resulting from a dispersion analysis, the incorporation of the toxicity of the pollutants emitted, and the characterization of the risk based on exposure parameters such as breathing rate, age adjustment factors, and exposure duration; each depending on receptor type.

The HRA was conducted in accordance with technical guidelines developed by federal, state, and regional agencies, including US Environmental Protection Agency (USEPA), California Environmental Protection Agency (CalEPA), California Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance*[1], and the BAAQMD's *Health Risk Screening Analysis Guidelines*.[2]

According to CalEPA, a HRA should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk or likelihood of adverse effects based on current knowledge, under a number of highly conservative assumptions and the best assessment tools currently available.

TERMS AND DEFINITIONS

As the practice of conducting a HRA is particularly complex and involves concepts that are not altogether familiar to most people, several terms and definitions are provided that are considered essential to the understanding of the approach, methodology and results:

Acute effect – a health effect (non-cancer) produced within a short period of time (few minutes to several days) following an exposure to toxic air contaminants (TAC).

Cancer risk – the probability of an individual contracting cancer from a lifetime (i.e., 70 year) exposure to TAC in the ambient air.

Chronic effect – a health effect (non-cancer) produced from a continuous exposure occurring over an extended period of time (weeks, months, years).

Hazard Index (HI) – the unitless ratio of an exposure level over the acceptable reference dose (RfC). The HI can be applied to multiple compounds in an additive manner.

Hazard Quotient (HQ) – the unitless ratio of an exposure level over the acceptable reference dose (RfC). The HQ is applied to individual compounds.

Toxic air contaminants (TAC) – any air pollutant that is capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). The current California list of TAC lists approximately 200 compounds, including particulate emissions from diesel-fueled engines.

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[1] Office of Environmental Health Hazard Assessment (OEHHA), 2003. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, http://www.oehha.org/air/hot_spots/pdf/HRAguidefinal.pdf

[2] Bay Area Air Quality Management District (BAAQMD), 2005. *BAAQMD Health Risk Screening Analysis Guidelines (http://www.baaqmd.gov/pmt/air_toxics/risk_procedures_policies/hrsa_guidelines.pdf)*, June 2005.

Human Health Effects - comprise disorders such as eye watering, respiratory or heart ailments, and other (i.e., non-cancer) related diseases.

Health Risk Assessment (HRA) – an analysis designed to predict the generation and dispersion of TAC in the outdoor environment, evaluate the potential for exposure of human populations, and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure.

Incremental – under CEQA, the net difference (or change) in conditions or impacts when comparing the baseline to future year project conditions.

Maximum exposed individual (MEI) – an individual assumed to be located at the point where the highest concentrations of TAC, and therefore, health risks are predicted to occur.

Non-cancer risks – health risks such as eye watering, respiratory or heart ailments, and other non-cancer related diseases.

Receptors – the locations where potential health impacts or risks are predicted (schools, residences and work-sites).

LIMITATIONS AND UNCERTAINTIES

There are a number of important limitations and uncertainties commonly associated with a HRA due to the wide variability of human exposures to TACs, the extended timeframes over which the exposures are evaluated and the inability to verify the results. Among these challenges are the following:

- The HRA exposure estimates do not take into account that people do not usually reside at the same location for 70 years and that other exposures (i.e., school children) are also of much shorter durations than was assumed in this analysis. Therefore, the results of the HRA are highly overstated for those cases.

- Other limitations and uncertainties associated with HRA and identified by the CalEPA include: (a.) lack of reliable monitoring data; (b.) extrapolation of toxicity data in animals to humans; (c.) estimation errors in calculating TACs emissions; (d.) concentration prediction errors with dispersion models; and (e.) the variability in lifestyles, fitness and other confounding factors of the human population.

HAZARDS IDENTIFICATION

TAC emissions associated with the project would occur from the following project activities:

- Off-road equipment and haul trucks during construction activities
- Motor vehicle operations along nearby roadways

Diesel exhaust is a complex mixture of numerous individual gaseous and particulate compounds emitted from diesel-fueled combustion engines diesel particulate matter (DPM) is formed primarily through the incomplete combustion of diesel fuel. DPM is removed from the atmosphere through physical processes including atmospheric fall-out and washout by rain. Humans can be exposed to airborne DPM by deposition on water, soil, and vegetation; although the main pathway of exposure is inhalation.

In August 1998, the California Air Resource Board (CARB) identified DPM as a TAC. The CARB developed *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel- Fueled Engines and Vehicles* and *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* and approved these documents on September 28, 2000. The documents represent proposals to reduce DPM emissions, with the goal of reducing emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aimed to require the use of state-of-the-art catalyzed DPM filters and ultra-low-sulfur diesel fuel.

In 2001, CARB assessed the state-wide health risks from exposure to diesel exhaust and to other toxic air contaminants. It is difficult to distinguish the health risks of diesel emissions from those of other air toxics, since diesel exhaust contains approximately 40 different TACs. The CARB study detected diesel exhaust by using ambient air carbon soot measurements as a surrogate for diesel emissions. The study reported that the state-wide cancer risk from exposure to diesel exhaust was about 540 per million population as compared to a total risk for exposure to all ambient air toxics of 760 per million. This estimate, which accounts for about 70 percent of the total risk from TACs, included both urban and rural areas in the state. The estimate can also be considered an average worst-case for the state, since it assumes constant exposure to outdoor concentrations of diesel exhaust and does not account for expected lower concentrations indoors, where most of time is spent.

EXPOSURE ASSESSMENT

Dispersion is the process by which atmospheric pollutants circulate due to wind and vertical stability. The results of a dispersion analysis are used to assess pollutant concentrations at or near an emission source. The results of this analysis allow predicted concentrations of pollutants to be compared directly to air quality standards and other criteria such as health risks.

Dispersion Modeling Approach

This section presents the methodology used for the dispersion modeling analysis. This section addresses all of the fundamental components of an air dispersion modeling analysis including:

- Model selection and options
- Receptor locations
- Meteorological data
- Source release characteristics

Model Selection and Options

The AERMOD (Version 12345) was used for the dispersion analysis. AERMOD is the US EPA preferred dispersion model for general industrial sources. The model can simulate point, area, volume, and line sources. The AERMOD model is the appropriate model for this analysis based on the coverage of simple, intermediate, and complex terrain. It also predicts both short-term and long-term (annual) average concentrations. The model was executed using the regulatory default options (stack-tip downwash, buoyancy-induced dispersion, and final plume rise), default wind speed profile categories, default potential temperature gradients, and no pollutant decay.

The selection of the appropriate dispersion coefficients depends on the land use within three kilometers (km) of the project site. The land use typing was based on the classification method defined by Auer (1978); using pertinent United States Geological Survey (USGS) 1:24,000 scale (7.5 minute) topographic maps of the area. If the Auer land use types of heavy industrial, light-to-moderate industrial, commercial, and compact residential account for 50 percent or more of the total area, the US EPA *Guideline on Air Quality Models* recommends using urban dispersion coefficients; otherwise, the appropriate rural coefficients were used. Based on observation of the area surrounding the project site, rural (urban is only designated within dense city centers such as downtown San Francisco) dispersion coefficients were applied in the analysis.

Receptors

Some receptors are considered more sensitive to air pollutants than others, because of preexisting health problems, proximity to the emissions source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people in residential areas are often at home for extended periods. Recreational land uses are moderately sensitive to air pollution, because vigorous exercise associated with recreation places a high demand on respiratory system function. Land use data is based on the San Francisco Zoning Map (dated April 2013).[3]

For the Parnassus Heights, the closest new residential uses would be located at Millberry Union and UC Hall, to the north of the project site, along Parnassus Avenue. Additional existing residences are located to the north-northeast-northwest of the project site and with Aldea Housing to the south of the project site). Seven schools (such as Gratton Elementary School, Haight Ashbury Community Nursery School, and Marilyn Reed Lucia Child Care) were included in the analysis as well as approximately 725 recreational receptors within the Mount Sutro Open Space Reserve. Nearly 1,680 receptors were included in the analysis. **Exhibit 1** displays the location of the Parnassus Heights receptors used in the HRA.

For the Mission Bay, the closest new residences (a total of approximately 330 receptors) would be located at Mission Bay Housing within Block 15 to the north of the project site along Mission Bay Boulevard North and north of the project site. Additional existing residences are located at Mission Bay Housing within Block 20. One daycare is located in the immediate vicinity and approximately 200 recreational receptors (Campus Sport Field, Koret Quad, and Mission Creek Park) were included in the analysis. Nearly 840 receptors were included in the analysis. **Exhibit 2** displays the location of the Mission Bay receptors used in the HRA.

For the Mission Center, the closest existing residential uses are to the west of the project site. Three schools (including Marshall Elementary School) were included in the analysis as well as ten recreational receptors. Nearly 280 receptors were included in the analysis. **Exhibit 3** displays the location of the Mission Center receptors used in the HRA.

[3] San Francisco Planning Department, http://sf-planning.org/modules/showdocument.aspx?documentid=9016

For the Mount Zion, the closest existing residential uses located to the south of Sutter and west of Divisadero; to the west of the project site. Four schools (Ben Franklin Middle School and Gateway High School) were included in the analysis as well as 15 recreational receptors including Hamilton Recreational Center. Nearly 670 receptors were included in the analysis. **Exhibit 4** displays the location of the Mount Zion receptors used in the HRA.

Terrain elevations for receptor locations were used (i.e., complex terrain) based on available USGS information for the area. Receptors were placed at a height of 1.8 meters (typical breathing height).

EXHIBIT 1
HEALTH RISK ASSESSMENT RECEPTORS FOR PARNASSUS HEIGHTS

EXHIBIT 2
HEALTH RISK ASSESSMENT RECEPTORS FOR MISSION BAY

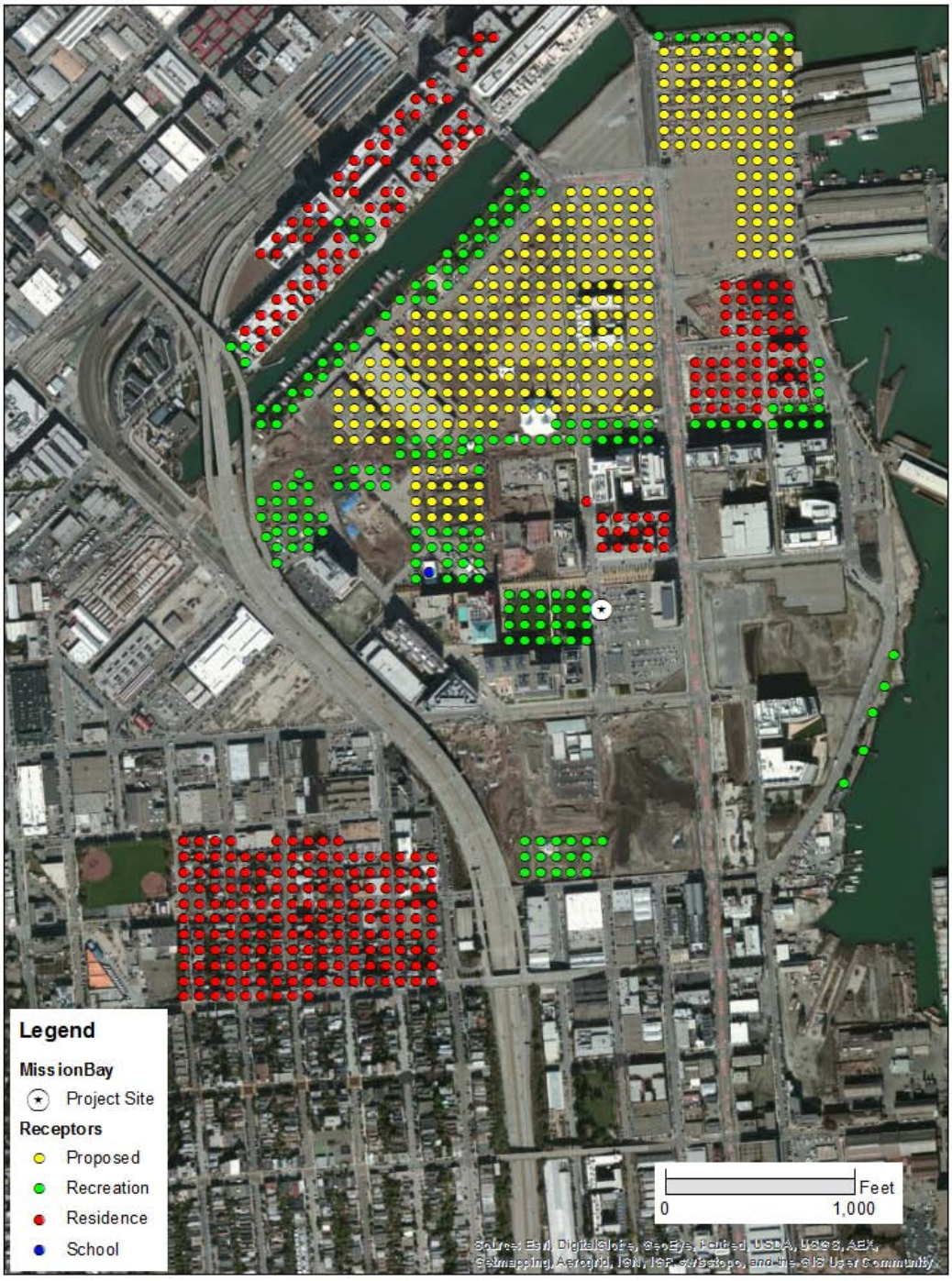


EXHIBIT 3
HEALTH RISK ASSESSMENT RECEPTORS FOR MISSION CENTER

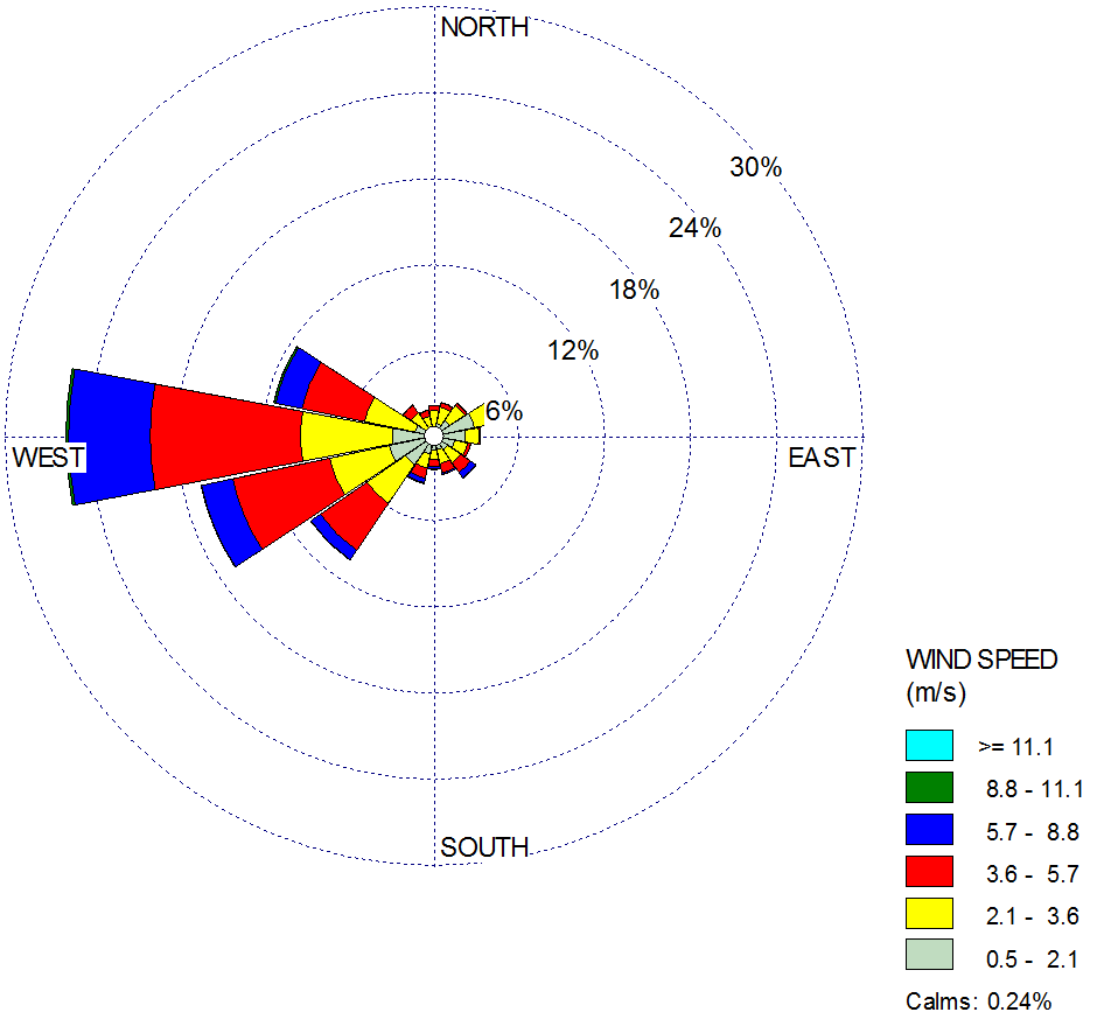
EXHIBIT 4
HEALTH RISK ASSESSMENT RECEPTORS FOR MOUNT ZION

Meteorological Data

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features affecting pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

Hourly surface meteorological data and upper air meteorological data from Mission Bay in San Francisco and Oakland, California, respectively, were provided by BAAQMD and used for the modeling analysis and. **Exhibit 5** provides the annual wind roses for the meteorological station. Wind directions are predominately from the south southwest and there is a low frequency of calm wind conditions.

EXHIBIT 5
WINDROSE FOR MISSION BAY, SAN FRANCISCO, CALIFORNIA



Source Release Characteristics

Construction equipment was treated as an area source within the facility expansion area. The release height of the off-road equipment exhaust was 3.05 meters. Delivery trucks and employee trips were treated as a line source (i.e., volume sources placed at regular intervals) located along the access road. The delivery trucks were assigned a release height of 3.05 meters and an initial vertical dimension of 4.15 meters, which accounts for dispersion from the movement of vehicles.

Terrain elevations for emission source locations were used (i.e., complex terrain) based on available USGS DEM for the area. AERMAP (Version 11103) was used to develop the terrain elevations, although the project site is generally flat.

Emission Estimates

The emissions associated with the HRA were based on the air quality calculations using CALEEMod (version 2013.2.2) and the information within the project description regarding construction schedule and project operations.

Operational emissions represent values within the modeling domain, approximately 1.1 miles (Mission Bay), 0.5 miles (Mission Center), 0.5 miles (Mt. Zion), and 0.9 miles (Parnassus Heights) of roadway length (as a portion of the 12.5 miles traveled), emission factors during the operational period, the hour of the day scaling factor (ranging from 0 to 1), a percent DPM to $PM_{2.5}$ emissions (approximately 20 percent), and the CALEEMod $PM_{2.5}$ exhaust emissions for nonroad equipment.

Table 1 provides the estimated annual $PM_{2.5}$ emissions for each project, year for onroad vehicles and nonroad equipment.

TABLE 1
ANNUAL PM25 EMISSIONS (TONS PER YEAR)

Project	Year	Onroad	Nonroad
Mission Bay	2018	0.017	0.175
	2019	0.002	0.020
	2020	0.008	0.082
	2029	0.006	0.053
	2030	0.034	0.026
	2031	0.016	0.009
Mission Center	2015	0.006	0.199
	2016	<0.001	0.001
Mt Zion	2015	<0.001	0.004
Parnassus	2015	0.002	0.004
	2020	<0.001	0.002
	2030	0.003	0.003

Dispersion Modeling Results

Using AERMOD, the maximum 1-hour and average annual concentrations were determined for the emission sources of concern. These concentrations were estimated for a unit emission rate (1 gram per second) and adjusted based on the calculated project-related emission rate.

TOXICITY ASSESSMENT

The HRA was conducted following methodologies in BAAQMD's *Health Risk Screening Analysis Guidelines*[4] and in the California Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance.*[5] This was accomplished by applying the highest estimated concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations (RfC) for non-cancer health effects.

The toxicity values used in this analysis were based on OEHHA guidance. These toxicity values are for carcinogenic effects and acute/chronic health impacts. The primary pathway for exposures was assumed to be inhalation and carcinogenic and non-carcinogenic effects were evaluated separately. The incremental risks were determined for each emission source of TAC and summed to obtain an estimated total incremental carcinogenic health risk.

The 80th percentile adult breathing rate of 302 L/kg-day was used to determine cancer risks to residents from exposure to TAC. The residential exposure frequency and duration was assumed to be 350 days per year and 70 years. For children, OEHHA recommends assuming a breathing rate of 581 L/kg-day to assess potential risk via the inhalation exposure pathway. This value represents the upper 95th percentile of daily breathing rates for children. The modeled TAC concentrations were used to represent the exposure concentrations in the air. The inhalation absorption factor was assumed to be 1.

Cancer risk estimates also incorporate age sensitivity factors (ASFs). This approach provides updated calculation procedures that factor in the increased susceptibility of infants and children to carcinogens as compared to adults. OEHHA recommends that cancer risks be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and by a factor of 3 for exposures from 2 years through 15 years of age. For estimating cancer risks for residential receptors over a 70 year lifetime, the incorporation of the ASFs results in a cancer risk adjustment factor (CRAF) of 1.7.

Based on OEHHA recommendations, the cancer risk to residential receptors assumes exposure occurs 24 hours per day for 350 days per year. For children at school sites, exposure is assumed to occur 10 hours per day for 180 days (or 36 weeks) per year. Cancer risk to residential receptors based on a 70-year lifetime exposure. Cancer risk estimates for children at school sites are calculated based on 9 year exposure duration.

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[4] Bay Area Air Quality Management District (BAAQMD), 2005. *BAAQMD Health Risk Screening Analysis Guidelines (http://www.baaqmd.gov/pmt/air_toxics/risk_procedures_policies/hrsa_guidelines.pdf)*, June 2005.

[5] Office of Environmental Health Hazard Assessment (OEHHA), 2003. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, http://www.oehha.org/air/hot_spots/pdf/HRAguidefinal.pdf

Table 2 provides a summary of the risk assessment exposure parameters used in the analysis.

TABLE 2
HEALTH RISK ASSESSMENT EXPOSURE PARAMETERS

Receptor	Breathing Rate (DBR)	Cancer Risk Adjustment Factor (CRAF)	Daily Exposure	Annual Exposure	Exposure Duration (ED)
Adult	302	1.7	24 hours	350 days	70 years
Child	581	10	24 hours	350 days	3 years
School	581	3	10 hours	180 days	9 years

RISK CHARACTERIZATION

Cancer risk is defined as the lifetime probability of developing cancer from exposure to carcinogenic substances. Cancer risks are expressed as the chance in one million of getting cancer (i.e., number of cancer cases among one million people exposed). The cancer risks are assumed to occur exclusively through the inhalation pathway. The cancer risk can be estimated by using the cancer potency factor (milligrams per kilogram of body weight per day [mg/kg-day]), the 70-year annual average concentration (microgram per cubic meter [$\mu g/m^3$]), and the lifetime exposure adjustment.

Following guidelines established by OEHHA, the incremental cancer risks attributable to the project were calculated by applying exposure parameters to modeled TAC concentrations in order to determine the inhalation dose (mg/kg-day) or the amount of pollutants inhaled per body weight mass per day. The cancer risks occur exclusively through the inhalation pathway; therefore, the cancer risks can be estimated from the following equation:

$$\text{Dose-inh} = \frac{C_{air} * \{DBR\} * A * CRAF * EF * ED * 10^{-6}}{AT}$$

Where:

Dose-inh = Dose of the toxic substance through inhalation in mg/kg-day
10^{-6} = Micrograms to milligrams conversion, Liters to cubic meters conversion
C_{air} = Concentration in air (microgram (μg)/cubic meter ($m^{3)}$)
{DBR} = Daily breathing rate (liter (L)/kg body weight – day)
A = Inhalation absorption factor
CRAF = Cancer Risk Adjustment Factor, Age Sensitivity Factor
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time period over which exposure is averaged in days (25,550 days for a 70 year cancer risk)

To determine incremental cancer risk, the estimated inhalation dose attributed to the project was multiplied by the cancer potency slope factor (cancer risk per mg/kg-day). The cancer potency slope factor is the upper bound on the increased cancer risk from a lifetime exposure to a pollutant. These slope factors are based on epidemiological studies and are different values for different pollutants. This allows the estimated inhalation dose to be equated to a cancer risk.

Non-cancer adverse health impacts, acute (short-term) and chronic (long-term), are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental exposure concentration from the project to a published reference exposure level (REL) that could cause adverse health effects as established by OEHHA. The ratio (referred to as the Hazard Quotient [HQ]) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall HI for that organ system. The overall HI is calculated for each organ system. If the overall HI for the highest-impacted organ system is greater than one, then the impact is considered to be significant.

The HI is an expression used for the potential for non-cancer health effects. The relationship for the non-cancer health effects is given by the annual concentration ($\mu g/m^3$) and the REL ($\mu g/m^3$). The acute hazard index was determined using the "simple" concurrent maximum approach, which tends to be conservative (i.e., overpredicts).

The relationship for the non-cancer health effects is given by the following equation:

$$HI = C/REL$$

where,

HI	Hazard index; an expression of the potential for non-cancer health effects.
C	Annual average concentration ($\mu g/m^3$) during the 70 year exposure period
REL	The concentration at which no adverse health effects are anticipated.

The chronic REL for DPM was established by the California OEHHA[6] as 5 $\mu g/m^3$. There is no acute REL for DPM. However, diesel exhaust does contain acrolein and other compounds, which do have an acute REL. BAAQMD's DPM speciation table (based on profile 4674 within the U.S. EPA Speciate 4.2)[7] was used to assess the acute impacts. Acrolein emissions are approximately 1.3 percent of the total emissions. The acute REL for acrolein was established by the California OEHHA[8] as 2.5 $\mu g/m^3$.

CUMULATIVE SOURCES

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of cumulative health risk impacts. The method for determining cumulative health risk requires the tallying of health risk from permitted sources and major roadways in the vicinity of a project (i.e., within a 1,000-foot radius of the source or new receptor), then adding the project impacts (in this case, construction activities) to determine whether the cumulative health risk thresholds are exceeded.

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[6] California Office of Environmental Health Hazards Assessment Toxicity Criteria Database, 2010. http://www.oehha.ca.gov//.

[7] Provides for a speciation faction of 1.3 percent of acrolein per DPM emission rate. http://www.epa.gov////.html.

[8] California Office of Environmental Health Hazards Assessment Toxicity Criteria Database, 2010. http://www.oehha.ca.gov/ .

BAAQMD has developed a geo-referenced database of permitted emissions sources throughout the San Francisco Bay Area, and has developed the *Stationary Source Risk & Hazard Analysis Tool* (dated May 2011) for estimating cumulative health risks from permitted sources. Information associated with these sources was provided and/or verified by BAAQMD.[9] Information (cancer risks and chronic index) was adjusted for distance from source to receptor, based on BAAQMD's *Distance Adjustment Multiplier for Diesel Internal Combustion Engine* and the *Distance Adjustment Multiplier for Gasoline Dispensing Facilities*. The cancer risks for the dry cleaner stationary source were adjusted to reflect the regulation that Perchloroethylene (PCE) is prohibited from use in the US after 2023. That is, the BAAQMD data were adjusted to 17 percent (12 years of PCE usage over a 70 year lifetime) of the reported value.

One permitted source is located within 1,000 feet of the Parnassus Heights project. **Table 3** provides the cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations. The Parnassus Heights facility is covered under permit 6682 (dated February 26, 2003). Four permitted sources are located within 1,000 feet of the Mission Bay project. **Table 4** provides the cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations. The Mission Bay facility is covered under permit 2891.

Additional documentation includes *Health Risk Analysis for Emissions of Air Toxics from Operational Sources* (dated November 2009) and *Genentech Hall Fume Hood Risk Screen 2011* (dated December 7, 2011).

Eleven permitted sources are located within 1,000 feet of the Mission Center project. **Table 5** provides the distance adjustment factors and the screening (unadjusted) cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations. **Table 6** provides the adjusted cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations. The Mission Center facility is covered under permit 8266 (dated December 30, 2003).

Seven permitted sources are located within 1,000 feet of the Mount Zion project. **Table 7** provides the distance adjustment factors and the screening (unadjusted) cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations. **Table 8** provides the adjusted cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations. The Mount Zion facility is covered under permit 22213 (dated August 5, 2010).

TABLE 3
CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES – PARNASSUS HEIGHTS

Facility #	Facility Type	Address	Adjustment Factor	Cancer Risk	Chronic Impact	PM2.5 Concentration
2479	UCSF/Parnassus	3rd Avenue/Parnassus	HRA	4.29	<0.01	0.01

[9] Email from Alison Kirk at BAAQMD on November 12, 2013 and December 30, 2013 - Stationary Source Inquiry Form Request – UCSF LRDP.

TABLE 4
CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES – MISSION BAY

Facility #	Facility Type	Address	Distance to Project (feet)	Adjustment Factor	Cancer Risk	Chronic Impact	PM2.5 Concentration
13160	UCSF/Mission Bay	600 16th Street	100	HRA	2.89	<0.01	0.01
17357	Alexandrea Real Estate	1700 Owens Street	1,000	HRA	3.26	<0.01	<0.01
15874	David Gladstone	1650 Owens Street	980	0.04	0.54	<0.01	0.02
19073	Alexandrea Real Estate	1500 Owens Street	830	0.06	1.11	0.01	<0.01

TABLE 5
CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES – MISSION CENTER
Adjustment Factors and Screening Data

Facility #	Facility Type	Address	Distance to Project (feet)	Adjustment Factor	Cancer Risk	Chronic Impact	PM2.5 Concentration
7563	Major Auto Body Repair	240 12th Street	890	1	-	-	-
17792	Sheriff's Dept	120 14th Street	590	HRA	3.91	<0.01	0.01
18193	Van Ness Auto Body	164 14th Street	650	1	-	-	-
15661	UCSF/Mission Center	1855 Folsom Street	230	HRA	3.06	<0.01	0.01
19811	Folsom Auto Body	1728 Folsom Street	350	1	-	-	-
5287	Aliato's Garage	1835 Folsom Street	490	0.12	0.83	<0.01	<0.01
3796	Anderson Enterprises	165 14th Street	190	1	-	-	-
8347	Avenue Auto Body	333 South Van Ness Avenue	400	1	-	-	-
G11266	Hetrz Equipment Rental	435 South Van Ness Avenue	610	0.03	0.07	<0.01	<0.01
G10573	Auto City Food Mart	501 South Van Ness Avenue	840	0.02	50.3	0.06	<0.01
19459	SPCA-SF	201 Alabama Street	980	HRA	8.67	<0.01	0.03

TABLE 6
CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES – MISSION CENTER
Adjusted and Refined Data

Facility #	Facility Type	Address	Cancer Risk	Chronic Impact	PM2.5 Concentration
7563	Major Auto Body Repair	240 12th Street	-	-	-
17792	Sheriff's Dept	120 14th Street	3.91	<0.01	<0.01
18193	Van Ness Auto Body	164 14th Street	-	-	-
15661	UCSF/Mission Center	1855 Folsom Street	3.06	<0.01	0.01
19811	Folsom Auto Body	1728 Folsom Street	-	-	-
5287	Aliato's Garage	1835 Folsom Street	0.10	<0.01	<0.01
3796	Anderson Enterprises	165 14th Street	-	-	-
8347	Avenue Auto Body	333 South Van Ness Avenue	-	-	-
G11266	Hetrz Equipment Rental	435 South Van Ness Avenue	<0.01	<0.01	<0.01
G10573	Auto City Food Mart	501 South Van Ness Avenue	1.01	0.06	<0.01
19459	SPCA-SF	201 Alabama Street	8.67	<0.01	0.03

TABLE 7
CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES – MOUNT ZION
Adjustment Factors and Screening Data

Facility #	Facility Type	Address	Distance to Project (feet)	Adjustment Factor	Cancer Risk	Chronic Impact	PM2.5 Concentration
9701	Town Cleaners	2840 California Street	500	0.17	8.06	0.02	<0.01
5755	UCSF/Mt Zion	1600 Divisadero	160	HRA	2.46	<0.01	0.01
8462	Sunshine Express Cleaners	1818 Divisadero	360	0.17	-	-	-
3829	Lofrano and Sons	1745 Divisadero	500	1	<0.01	<0.01	0.01
13887	Kaiser Permanente MOB	2238 Geary Blvd	550	0.10	64.5	0.02	0.11
13888	Kaiser Permanente Employee Garage	2130 O'Farrell Street	780	0.06	63.1	0.02	0.02
13889	Kaiser Permanente Public Garage	2190 O'Farrell Street	880	0.05	52.7	0.02	0.01

TABLE 8
CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES – MOUNT ZION
Adjusted and Refined Data

Facility #	Facility Type	Address	Cancer Risk	Chronic Impact	PM2.5 Concentration
9701	Town Cleaners	2840 California Street	1.37	0.02	<0.01
5755	UCSF/Mt Zion	1600 Divisadero	2.46	<0.01	0.01
8462	Sunshine Express Cleaners	1818 Divisadero	-	-	-
3829	Lofrano and Sons	1745 Divisadero	<0.01	<0.01	0.01
13887	Kaiser Permanente MOB	2238 Geary Blvd	6.45	0.02	0.11
13888	Kaiser Permanente Employee Garage	2130 O'Farrell Street	3.79	0.02	0.02
13889	Kaiser Permanente Public Garage	2190 O'Farrell Street	2.63	0.02	0.01

BAAQMD has also developed a geo-referenced database of roadways throughout the San Francisco Bay Area and has developed the *Highway Screening Analysis Tool (*dated May 2011*)* for estimating cumulative health risks from roadways. BAAQMD *CEQA Air Quality Guidelines* also require the inclusion of surface streets within 1,000 feet of the project with annual average daily traffic (AADT) of 10,000 or greater.[10]

Parnassus Avenue (11,700 AADT) is located to the adjacent to the Parnassus Heights project. Interstate 280 is located adjacent (to the west) of the Mission Bay project. The Mission Bay project also included secondary roadways such as 3rd Street (30,265 AADT), 7th Street (22,188 AADT), and 16th Street (20,436 AADT).

US 101 is located adjacent (to the north) of the Mission Center project. The Mission Center project also included secondary roadways such as 14th Street, Van Ness Avenue (50,718 AADT), 15th Street, Folsom Street, and Harrison Street. Mount Zion included secondary roadways such as Bush Street, Divisadero Street, and Geary Boulevard (42,274 AADT).

Thus, the health impacts from these roadways were included in the cumulative analysis. **Table 9** provides the cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations for the nearby surface streets.

[10] BAAQMD County Surface Street Screening Tables, May 2011 and CEHTP Traffic Linkage Service Demonstration, http://www.ehib.org/traffic_tool.jsp

TABLE 9
CUMULATIVE HEALTH IMPACTS - ROADWAYS

Project	Roadway	Cancer Risk	Hazard Impact	PM2.5 Concentration
Parnassus Heights	Parnassus Avenue	0.90	<0.01	0.09
Mission Bay	I-280	5.32	0.01	0.05
	3rd Street	0.34	<0.01	0.01
	7th Street	0.29	<0.01	0.01
	16th Street	0.39	<0.01	0.01
Mission Center	US 101	3.71	0.01	0.03
	14th Street	0.23	<0.01	0.01
	Van Ness Avenue	1.68	<0.01	0.06
	15th Street	4.35	<0.01	0.15
	Folsom Street	2.19	<0.01	0.08
	Harrison Street	0.36	<0.01	0.01
Mount Zion	Bush Street	0.60	<0.01	0.02
	Divisadero Street	0.54	<0.01	0.02
	Geary Boulevard	1.84	<0.01	0.06

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Bay Area Air Quality Management District
Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD. This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

For guidance on conducting a risk & hazard screening, including for roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart. Also see the District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requestor Contact Information

Contact Name:	Chris Sanchez
Affiliation:	Environmental Science Assoc.
Phone:	415-896-5900
Email:	csanchez@esassoc.com
Date of Request	11/12/2013
Project Name:	UCSF - Parnassus
Address:	500 and 533 Parnassus Ave.
City:	San Francisco
County:	San Francisco
Type (residential, commercial, mixed use, industrial, etc.):	University Medical Center with housing
Project size (# of units, or building square feet):	142 resiential units at 533 Parnassus and 83 units at 500 Parnassus
Comments:	
Distances calculated assuming source is power plant at eastern edge of campus	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, http://www.google.com/earth/download/ge/, and then download the county specific Google Earth stationary source application files from the District's website, http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources near the project. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in Table B Section 1 below.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Alison Kirk at 415-749-5169, or akirk@baaqmd.gov .

Map B: Snapshot of Google Earth with Plant G8736 Information Table Selected Showing HRSA Values

Note the asterisk next to the plant name. This means that the values that appear below are from the HRSA. These values cannot be further adjusted using our screening tools, such as the diesel multiplier sheet. These values are based on modeling. If the Information Table says "Contact District Staff" include in Table B below.

Table B: Stationary Sources

Table B Section 1: Requestor fills out these columns based on Google Earth data | **Table B Section 2: BAAQMD returns form with additional information in these columns as needed**

Distance from Receptor (feet)	Plant # or Gas Dispensary #	Facility Name	Street Address	Screening Level Cancer Risk (1)	Screening Level Hazard Index (1)	Screening Level PM2.5 (1)	Permit #s (2)	Source #s (2)	Fuel Code (3)	Type of Source(s) (4)	HRSA Ap # (5)	HRSA Date (6)	HRSA Engineer (7)	HRSA Cancer Risk in a million	Age Sensitivity Factor (8)	HRSA Adjusted Cancer Risk	HRSA Chronic Health (9)	HRSA PM2.5 Risk	Status/Comments
500	2478	UCSF	3rd Ave & parnassus	1015.19	2.879	71.4	6682	19,20		diesel egnine	6682	2/26/2003	HSD	2.700	1.7	4.59	n/a	0.014388715	HRSA only covers sources 19, 20; see emissions on next page. Consider using Beta Calculator with distance multiplier for diesel engines.
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Footnotes:

1. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.

2. Each plant may have multiple permits and sources.
3. Fuel codes: 98 = diesel, 189 = Natural Gas.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
6. The date that the HRSA was completed.
7. Engineer who completed the HRSA. For District purposes only.
8. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
9. The HRSA "Chronic Health" number represents the Hazard Index.
10. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To be conservative, requestor should assume the cancer risk is 1 in a million and the hazard index is 0.003 for these sources.
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the number of years perc use will continue after the project's residents or other sensitive receptors (such as students, patients, etc) take occupancy.
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
5/30/12

Bay Area Air Quality Management District
Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD. This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

For guidance on conducting a risk & hazard screening, including for roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart. Also see the District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requestor Contact Information

Contact Name:	Chris Sanchez
Affiliation:	Environmental Science Assoc.
Phone:	415-896-5900
Email:	csanchez@esassoc.com
Date of Request	11/12/2013
Project Name:	UCSF - Mission Bay
Address:	600 16th Street
City:	San Francisco
County:	San Francisco
Type (residential, commercial, mixed use, industrial, etc.):	College Campus with housing
Project size (# of units, or building square feet):	523 resiential units; 18,00 square feet of chaild care center
Comments:	
Not sure of location of UCSF. Is this generators at hospital?	

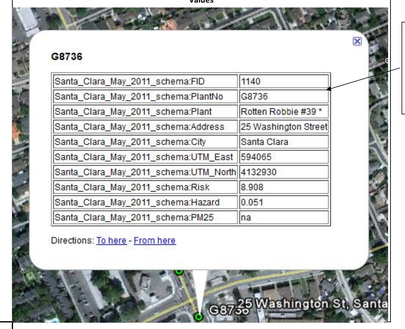
For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, http://www.google.com/earth/download/ge/, and then download the county specific Google Earth stationary source application files from the District's website, http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources near the project. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in Table B Section 1 below.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Alison Kirk at 415-749-5169, or akirk@baaqmd.gov .

Map B: Snapshot of Google Earth with Plant G8736 Information Table Selected Showing HRSA Values



Note the asterisk next to the plant name. This means that the values that appear below are from the HRSA. These values cannot be further adjusted using our screening tools, such as the diesel multiplier sheet. These values are based on modeling. If the Information Table says "Contact District Staff" include in Table B

Table B: Stationary Sources

Table B Section 1: Requestor fills out these columns based on Google Earth data | **Table B Section 2: BAAQMD returns form with additional information in these columns as needed**

Distance from Receptor (feet)	Plant # or Gas Dispensary #	Facility Name	Street Address	Screening Level Cancer Risk (1)	Screening Level Hazard Index (1)	Screening Level PM2.5 (1)	Permit #s (2)	Source #s (2)	Fuel Code (3)	Type of Source(s) (4)	HRSA Ap # (5)	HRSA Date (6)	HRSA Engineer (7)	HRSA Cancer Risk in a million	Age Sensitivity Factor (8)	HRSA Adjusted Cancer Risk	HRSA Chronic Health (9)	HRSA PM2.5 Risk	Status/Comments
If hospital - 1,300; If Genentech hall - 800	13160	UCSF	600 16th St.	165.52	0.062	1.55	2891	many sources, see next page		boilers								0	See page 2 for emissions info and HRSA results for source 25. Consider using emissions calculator and distance calculator for the diesel engines.
850	19601	Mission Bay Development Group	505 Mission Bay Blvd. N.	No Data	No Data	No Data		see page 3		diesel engine								0	no hrsa, new plant number: 21816; consider using emissions info on page 3 with Beta Calculator and distance calculator
1200	19906	ARE San Francisco No. 19 LLC	405 Mission Bay Blvd S.	No Data	No Data	No Data	21103	see page 4		diesel engine	21103	11/5/2009	CSF	1.430	1.7	2.89	0.001	0.009059561	consider using HRSA values
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Footnotes:
1. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.

2. Each plant may have multiple permits and sources.
3. Fuel codes: 98 = diesel, 189 = Natural Gas.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
6. The date that the HRSA was completed.
7. Engineer who completed the HRSA. For District purposes only.
8. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
9. The HRSA "Chronic Health" number represents the Hazard Index.
10. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To be conservative, requestor should assume the cancer risk is 1 in a million and the hazard index is 0.003 for these sources.
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the number of years perc use will continue after the project's residents or other sensitive receptors (such as students, patients, etc) take occupancy.
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
5/30/12

TECHNICAL ANALYSIS
Energy

UCSF Parnassus Construction Fuel Use - 2020

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**53.15**	**tons**
Convert to kilograms		4.82E+04	kg

Per CCAR GRP (2009):

Diesel fuel combustion =		10.15	kg CO2/gallon	
Diesel Combustion Rate =		4.75E+03	gallons	(over 5 year construction period)
BTU		138874	Btu/gallon	
		6.60E+08	Btu	(over 5 year construction period)
		6.60E+02	Mbtu	(over 5 year construction period)
		1.32E+02	Mbtu/yr	(average)

UCSF Parnassus Construction Fuel Use - 2025

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**7.724**	**tons**
Convert to kilograms		7.01E+03	kg

Per CCAR GRP (2009):

Diesel fuel combustion =		10.15	kg CO2/gallon	
Diesel Combustion Rate =		6.90E+02	gallons	(over 5 year construction period)
BTU Conversion =		138874	Btu/gallon	
		9.59E+07	Btu	(over 5 year construction period)
		9.59E+01	Mbtu	(over 5 year construction period)
		1.92E+01	Mbtu/yr	(average)

UCSF Parnassus Construction Fuel Use - 2035

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**919.3**	**tons**
Convert to kilograms		8.34E+05	kg

Per CCAR GRP (2009):

Diesel fuel combustion =	10.15	kg CO2/gallon	
Diesel Combustion Rate =	8.22E+04	gallons	(over 5 year construction period)
BTU Conversion =	138874	Btu/gallon	
	1.14E+10	Btu	(over 5 year construction period)
	1.14E+04	Mbtu	(over 5 year construction period)
	2.28E+03	Mbtu/yr	(average)
Total Construction Energy of LRDP at Parnassus =	**1.22E+04**	**Mbtu**	

UCSF Parnassus Operational Vehicle Fuel Use

Gasoline sources		
	CO2 Emissions	
Vehicle trips	845.4	tons
Convert to kilograms	7.67E+05	kg

Per CCAR GRP (2009):

Gasoline fuel combustion =	8.81	kg CO2/gallon	
Gasoline combustion rate =	8.71E+04	gallons	per year
	114100	BTU/gal	
	9.93E+09	BTU/year	
	9.93E+03	MBTU/year	

UCSF Parnassus Operational Energy Use

Program Elements (from CalEEMOd)

Natural gas =	2.74E+07	kBTU/yr
	2.74E+04	Mbtu/yr
Electricity =	5.01E+06	kWh/yr
	5.01E+03	MWh/yr

Project Elements (from CalEEMOd)

Natural gas =	1.87E+06	kBTU/yr
	1.87E+03	Mbtu/yr
Electricity =	5.01E+06	kWh/yr
	5.01E+03	MWh/yr

Demolition losses (from CalEEMOd)

Natural gas =	4.33E+06	kBTU/yr
	4.33E+03	Mbtu/yr
Electricity =	3.00E+06	kWh/yr
	3.00E+03	MWh/yr

Renovation losses (from CalEEMOd)

Natural gas =	5.46E+06	kBTU/yr
	5.46E+03	Mbtu/yr
Electricity =	2.37E+06	kWh/yr
	2.37E+03	MWh/yr

Total Demand

Natural gas =	1.95E+04	Mbtu/yr			
Electricity =	4.65E+03	MWh/yr	=	1.59E+04	Mbtu/yr

Conversion Factor =	1	kWh =	3412	Btu
	1MWh =		3412000	Btu
	1MWh =		3.412	Mbtu

UCSF Mission Bay Construction Fuel Use - 2020

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**5726**	**tons**
Convert to kilograms		5.19E+06	kg

Per CCAR GRP (2009):

Diesel fuel combustion =		10.15	kg CO2/gallon	
Diesel Combustion Rate =		5.12E+05	gallons	(over 5 year construction period)
BTU		138874	Btu/gallon	
		7.11E+10	Btu	(over 5 year construction period)
		7.11E+04	Mbtu	(over 5 year construction period)
		1.42E+04	Mbtu/yr	(average)

UCSF Mission Bay Construction Fuel Use - 2025

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**3465**	**tons**
Convert to kilograms		3.14E+06	kg

Per CCAR GRP (2009):

Diesel fuel combustion =	10.15	kg CO2/gallon	
Diesel Combustion Rate =	3.10E+05	gallons	(over 5 year construction period)
BTU Conversion =	138874	Btu/gallon	
	4.30E+10	Btu	(over 5 year construction period)
	4.30E+04	Mbtu	(over 5 year construction period)
	8.60E+03	Mbtu/yr	(average)

UCSF Mission Bay Construction Fuel Use - 2030

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**3245**	**tons**
Convert to kilograms		2.94E+06	kg

Per CCAR GRP (2009):

Diesel fuel combustion =	10.15	kg CO2/gallon	
Diesel Combustion Rate =	2.90E+05	gallons	(over 5 year construction period)
BTU Conversion =	138874	Btu/gallon	
	4.03E+10	Btu	(over 5 year construction period)
	4.03E+04	Mbtu	(over 5 year construction period)
	8.06E+03	Mbtu/yr	(average)

UCSF Mission Bay Construction Fuel Use - 2035

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**6075**	**tons**
Convert to kilograms		5.51E+06	kg

Per CCAR GRP (2009):

Diesel fuel combustion =	10.15	kg CO2/gallon	
Diesel Combustion Rate =	5.43E+05	gallons	(over 5 year construction period)
BTU Conversion =	138874	Btu/gallon	
	7.54E+10	Btu	(over 5 year construction period)
	7.54E+04	Mbtu	(over 5 year construction period)
	1.51E+04	Mbtu/yr	(average)
Total Construction Energy of LRDP at Parnassus =	**2.30E+05**	**Mbtu**	

UCSF Operational Vehicle Fuel Use

Gasoline sources		
	CO2 Emissions	
Vehicle trips	8163	tons
Convert to kilograms	7.41E+06	kg

Per CCAR GRP (2009):

Gasoline fuel combustion =	8.81	kg CO2/gallon	
Gasoline combustion rate =	8.41E+05	gallons	per year
	114100	BTU/gal	
	9.59E+10	BTU/year	
	9.59E+04	MBTU/year	

UCSF Mission Bay Operational Energy Use

Program Elements	(from CalEEMOd)				
Natural gas =	1.03E+08	kBTU/yr			
	1.03E+05	Mbtu/yr			
Electricity =	3.45E+07	kWh/yr			
	3.45E+04	MWh/yr	=	1.18E+05	Mbtu/yr
Conversion Factor =	1	kWh =	3412	Btu	
	1MWh =		3412000	Btu	
	1MWh =		3.412	Mbtu	

UCSF Mission Bay Construction Fuel Use - 2020

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)	
		CO2 Emissions
TOTAL Diesel Sources =		**5726 tons**
Convert to kilograms		5.19E+06 kg

Per CCAR GRP (2009):

Diesel fuel combustion =	10.15	kg CO2/gallon	
Diesel Combustion Rate =	5.12E+05	gallons	(over 5 year construction period)
BTU	138874	Btu/gallon	
	7.11E+10	Btu	(over 5 year construction period)
	7.11E+04	Mbtu	(over 5 year construction period)
	1.42E+04	Mbtu/yr	(average)

UCSF Mission Bay Construction Fuel Use - 2025

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**3465**	**tons**
Convert to kilograms		3.14E+06	kg

Per CCAR GRP (2009):

Diesel fuel combustion =		10.15	kg CO2/gallon	
Diesel Combustion Rate =		3.10E+05	gallons	(over 5 year construction period)
BTU Conversion =		138874	Btu/gallon	
		4.30E+10	Btu	(over 5 year construction period)
		4.30E+04	Mbtu	(over 5 year construction period)
		8.60E+03	Mbtu/yr	(average)

UCSF Mission Bay Construction Fuel Use - 2030

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**3245**	**tons**
Convert to kilograms		2.94E+06	kg

Per CCAR GRP (2009):

Diesel fuel combustion =		10.15	kg CO2/gallon	
Diesel Combustion Rate =		2.90E+05	gallons	(over 5 year construction period)
BTU Conversion =		138874	Btu/gallon	
		4.03E+10	Btu	(over 5 year construction period)
		4.03E+04	Mbtu	(over 5 year construction period)
		8.06E+03	Mbtu/yr	(average)

UCSF Mission Bay Construction Fuel Use - 2035

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**6075**	**tons**
Convert to kilograms		5.51E+06	kg

Per CCAR GRP (2009):

Diesel fuel combustion =	10.15	kg CO2/gallon	
Diesel Combustion Rate =	5.43E+05	gallons	(over 5 year construction period)
BTU Conversion =	138874	Btu/gallon	
	7.54E+10	Btu	(over 5 year construction period)
	7.54E+04	Mbtu	(over 5 year construction period)
	1.51E+04	Mbtu/yr	(average)

UCSF Operational Vehicle Fuel Use

Gasoline sources		
	CO2 Emissions	
Vehicle trips	8163	tons
Convert to kilograms	7.41E+06	kg

Per CCAR GRP (2009):

Gasoline fuel combustion =	8.81	kg CO2/gallon	
Gasoline combustion rate =	8.41E+05	gallons	per year
	114100	BTU/gal	
	9.59E+10	BTU/year	
	9.59E+04	MBTU/year	

UCSF Mount Zion Construction Fuel Use - 2020

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)		
		CO2 Emissions	
TOTAL Diesel Sources =		**182.39**	**tons**
Convert to kilograms		1.65E+05	kg

Per CCAR GRP (2009):

Diesel fuel combustion =		10.15	kg CO2/gallon	
Diesel Combustion Rate =		1.63E+04	gallons	(over 5 year construction period)
BTU		138874	Btu/gallon	
		2.26E+09	Btu	(over 5 year construction period)
		2.26E+03	Mbtu	(over 5 year construction period)
		4.53E+02	Mbtu/yr	(average)

UCSF Mount Zion Operational Vehicle Fuel Use

Gasoline sources		
	CO2 Emissions	
Vehicle trips	719	tons
Convert to kilograms	6.52E+05	kg

Per CCAR GRP (2009):

Gasoline fuel combustion =	8.81	kg CO2/gallon
Gasoline combustion rate =	7.40E+04	gallons per year
	114100	BTU/gal
	8.45E+09	BTU/year
	8.45E+03	MBTU/year

UCSF Mount Zion Operational Energy Use

Program Elements (from CalEEMOd)

Natural gas =	4.72E+06	kBTU/yr			
	4.72E+03	Mbtu/yr			
Electricity =	3.44E+06	kWh/yr			
	3.44E+03	MWh/yr	=	1.17E+04	Mbtu/yr

Conversion Factor =	1	kWh =	3412	Btu
	1MWh =		3412000	Btu
	1MWh =		3.412	Mbtu

Demolition losses (from CalEEMOd)

Natural gas =	4.33E+06	kBTU/yr			
	4.33E+03	Mbtu/yr			
Electricity =	3.00E+06	kWh/yr			
	3.00E+03	MWh/yr	=	1.02E+04	Mbtu/yr

UCSF Mission Center Construction Fuel Use - 2020

CO2 emissions from GHG Calculations:

Diesel Sources	(assumes construction worker trips are also diesel)	
		CO2 Emissions
TOTAL Diesel Sources =		**405 tons**
Convert to kilograms		3.67E+05 kg

Per CCAR GRP (2009):

Diesel fuel combustion =	10.15	kg CO2/gallon	
Diesel Combustion Rate =	3.62E+04	gallons	(over 5 year construction period)
BTU	138874	Btu/gallon	
	5.03E+09	Btu	(over 5 year construction period)
	5.03E+03	Mbtu	(over 5 year construction period)
	1.01E+03	Mbtu/yr	(average)

UCSF Mission Center Operational Vehicle Fuel Use

Gasoline sources		
	CO2 Emissions	
Vehicle trips	345.1	tons
Convert to kilograms	3.13E+05	kg

Per CCAR GRP (2009):

Gasoline fuel combustion =	8.81	kg CO2/gallon	
Gasoline combustion rate =	3.55E+04	gallons	per year
	114100	BTU/gal	
	4.05E+09	BTU/year	
	4.05E+03	MBTU/year	

UCSF Mission Center Operational Energy Use

Program Elements	(from CalEEMOd)				
Natural gas =	1.64E+06	kBTU/yr			
	1.64E+03	Mbtu/yr			
Electricity =	1.85E+06	kWh/yr			
	1.85E+03	MWh/yr	=	6.31E+03	Mbtu/yr
Conversion Factor =	1	kWh =	3412	Btu	
	1MWh =		3412000	Btu	
	1MWh =		3.412	Mbtu	

41560148	kwh/year
41560.15	MWh/yr
141803.2	Mbtu/year

UCSF Existing Energy Use

Electricity =	41560148	kwh/year	**Conversion Factor =**	1	kWh =	3412	Btu		
	41560.15	MWh/yr		1MWh =		3412000	Btu		
	141803.2	Mbtu/year		1MWh =		3.412	Mbtu		
Natural Gas =	6871248	Therms/Yr	**Conversion Factor =**	1	Therm =	100067	Btu =	0.100067	Mbtu
	687585.2	Mbtu/yr							
Total =	829388.4	Mbtu/yr							

APPENDIX F

Technical Analysis – Noise

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Calculated Ldn from long-term noise monitoring data

UCSF Parnassus Campus Location PS-LT-1

			TIME	dBA	Remove LOG	10 dBA Penalized Values	5 dBA Penalized Values
1/8/2014	Midnight		0 / 24	54.1	257040	2570396	812831
	am	1:00	100	54.4	275423	2754229	870964
		2:00	200	54.1	257040	2570396	812831
		3:00	300	53.4	218776	2187762	691831
		4:00	400	54.1	257040	2570396	812831
		5:00	500	56.2	416869	4168694	1318257
		6:00	600	55.9	389045	3890451	1230269
		7:00	700	55.5	354813	3548134	1122018
		8:00	800	55.7	371535	3715352	1174898
		9:00	900	55.5	354813	3548134	1122018
		10:00	1000	55.8	380189	3801894	1202264
		11:00	1100	56.4	436516	4365158	1380384
		12:00	1200	57.8	602560	6025596	1905461
	pm	1:00	1300	58.0	630957	6309573	1995262
		2:00	1400	58.2	660693	6606934	2089296
		3:00	1500	58.2	660693	6606934	2089296
		4:00	1600	58.6	724436	7244360	2290868
		5:00	1700	58.8	758578	7585776	2398833
		6:00	1800	59.2	831764	8317638	2630268
		7:00	1900	59.0	794328	7943282	2511886
		8:00	2000	58.3	676083	6760830	2137962
		9:00	2100	58.2	660693	6606934	2089296
		10:00	2200	57.8	602560	6025596	1905461
	pm	11:00	2300	57.9	616595	6165950	1949845

Leq Morning Peak Hour 7:00-10:00 a.m.

56 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.

59 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)

56 dBA

Leq Daytime 7:00 am-10:00 p.m.

58 dBA

Leq 24-Hour

57 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

62 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m.,

63 dBA **and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.**

CNEL - Ldn 0.45414343

Calculated Ldn from long-term noise monitoring data

UCSF Parnassus Campus Location PS-LT-1

			TIME	dBA	Remove LOG	10 dBA Penalized Values	5 dBA Penalized Values
1/9/2014	Midnight		0 / 24	57.8	602560	6025596	1905461
	am	1:00	100	57.6	575440	5754399	1819701
		2:00	200	57.7	588844	5888437	1862087
		3:00	300	57.7	588844	5888437	1862087
		4:00	400	57.9	616595	6165950	1949845
		5:00	500	57.8	602560	6025596	1905461
		6:00	600	56.8	478630	4786301	1513561
		7:00	700	56.0	398107	3981072	1258925
		8:00	800	56.0	398107	3981072	1258925
		9:00	900	56.4	436516	4365158	1380384
		10:00	1000	56.9	489779	4897788	1548817
		11:00	1100	57.5	562341	5623413	1778279
		12:00	1200	58.3	676083	6760830	2137962
	pm	1:00	1300	59.2	831764	8317638	2630268
		2:00	1400	59.4	870964	8709636	2754229
		3:00	1500	59.6	912011	9120108	2884032
		4:00	1600	59.3	851138	8511380	2691535
		5:00	1700	59.0	794328	7943282	2511886
		6:00	1800	58.8	758578	7585776	2398833
		7:00	1900	58.7	741310	7413102	2344229
		8:00	2000	58.6	724436	7244360	2290868
		9:00	2100	58.4	691831	6918310	2187762
		10:00	2200	58.5	707946	7079458	2238721
	pm	11:00	2300	58.3	676083	6760830	2137962

Leq Morning Peak Hour 7:00-10:00 a.m.

56 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.

59 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)

58 dBA

Leq Daytime 7:00 am-10:00 p.m.

58 dBA

Leq 24-Hour

58 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

64 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m.,

65 dBA **and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.**

CNEL - Ldn 0.30322848

Calculated Ldn from long-term noise monitoring data

UCSF Parnassus Campus Location PS-LT-3

			TIME	dBA	Remove LOG	10 dBA Penalized Values	5 dBA Penalized Values
1/8/2014	Midnight		0 / 24	52.6	181970	1819701	575440
	am	1:00	100	51.5	141254	1412538	446684
		2:00	200	48.7	74131	741310	234423
		3:00	300	48.2	66069	660693	208930
		4:00	400	51.5	141254	1412538	446684
		5:00	500	54.5	281838	2818383	891251
		6:00	600	56.5	446684	4466836	1412538
		7:00	700	59.9	977237	9772372	3090295
		8:00	800	58.7	741310	7413102	2344229
		9:00	900	61.4	1380384	13803843	4365158
		10:00	1000	57.6	575440	5754399	1819701
		11:00	1100	57.7	588844	5888437	1862087
		12:00	1200	59.7	933254	9332543	2951209
	pm	1:00	1300	57.1	512861	5128614	1621810
		2:00	1400	58.3	676083	6760830	2137962
		3:00	1500	58.2	660693	6606934	2089296
		4:00	1600	58.6	724436	7244360	2290868
		5:00	1700	58.3	676083	6760830	2137962
		6:00	1800	58.5	707946	7079458	2238721
		7:00	1900	57.8	602560	6025596	1905461
		8:00	2000	55.9	389045	3890451	1230269
		9:00	2100	54.7	295121	2951209	933254
		10:00	2200	53.8	239883	2398833	758578
	pm	11:00	2300	53.0	199526	1995262	630957

Leq Morning Peak Hour 7:00-10:00 a.m.

60 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.

58 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)

53 dBA

Leq Daytime 7:00 am-10:00 p.m.

58 dBA

Leq 24-Hour

57 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

61 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

61 dBA

CNEL - Ldn 0.40909107

Calculated Ldn from long-term noise monitoring data

UCSF Parnassus Campus Location PS-LT-3

			TIME	dBA	Remove LOG	10 dBA Penalized Values	5 dBA Penalized Values
1/9/2014	Midnight		0 / 24	52.6	181970	1819701	575440
	am	1:00	100	50.1	102329	1023293	323594
		2:00	200	49.0	79433	794328	251189
		3:00	300	49.6	91201	912011	288403
		4:00	400	53.4	218776	2187762	691831
		5:00	500	57.8	602560	6025596	1905461
		6:00	600	59.7	933254	9332543	2951209
		7:00	700	59.5	891251	8912509	2818383
		8:00	800	59.1	812831	8128305	2570396
		9:00	900	60.6	1148154	11481536	3630781
		10:00	1000	58.6	724436	7244360	2290868
		11:00	1100	57.7	588844	5888437	1862087
		12:00	1200	58.3	676083	6760830	2137962
	pm	1:00	1300	**66.8**	4786301	47863009	15135612
		2:00	1400	59.5	891251	8912509	2818383
		3:00	1500	60.6	1148154	11481536	3630781
		4:00	1600	**66.2**	4168694	41686938	13182567
		5:00	1700	58.6	724436	7244360	2290868
		6:00	1800	58.3	676083	6760830	2137962
		7:00	1900	57.5	562341	5623413	1778279
		8:00	2000	56.2	416869	4168694	1318257
		9:00	2100	59.3	851138	8511380	2691535
		10:00	2200	55.3	338844	3388442	1071519
	pm	11:00	2300	54.6	288403	2884032	912011

Leq Morning Peak Hour 7:00-10:00 a.m.

60 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.

62 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)

55 dBA

Leq Daytime 7:00 am-10:00 p.m.

61 dBA

Leq 24-Hour

60 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

63 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

63 dBA

CNEL - Ldn 0.3480302

Parnassus Koret
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/04/2014
Case Description: UCSF Parnassus Koret

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Child Care	Residential	58.0	58.0	58.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	280.0	0.0
Excavator	No	40		80.7	280.0	0.0
Front End Loader	No	40		79.1	280.0	0.0
Mounted Impact Hammer (hoe ram)	Yes	20		90.3	280.0	0.0

Results

Noise Limit Exceedance (dBA)						Noise Limits (dBA)						
Day		Evening		Night		Day		Evening		Night		
Equipment	Calculated (dBA) Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Dozer	66.7	62.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	65.7	61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	64.1	60.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Hammer (hoe ram)	75.3	68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.3	70.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Parnassus LPPI
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/04/2014
Case Description: UCSF Parnassus LPPI

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Edgewood	Residential	58.0	58.0	58.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	250.0	0.0
Excavator	No	40		80.7	250.0	0.0
Front End Loader	No	40		79.1	250.0	0.0
Mounted Impact Hammer (hoe ram)	Yes	20		90.3	250.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	67.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	66.7	62.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	65.1	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Hammer (hoe ram)	76.3	69.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.3	71.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Parnassus MR4
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/04/2014
Case Description: UCSF Parnassus MR4

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
5th Avenue	Residential	58.0	58.0	53.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	100.0	0.0
Excavator	No	40		80.7	100.0	0.0
Front End Loader	No	40		79.1	100.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Dozer	75.6	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.6	75.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Existing

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Parnassus	Stanyan	Hillpoint	756	95	718.2	4	30.24	1	7.56	25	40	25	40	25	40	58.7	56.6	58.2	62.7	40	58.4	8.8	28.7
Parnassus	5th	3rd	904	95	858.8	4	36.16	1	9.04	25	40	25	40	25	40	59.4	57.3	59.0	63.4	40	59.2	10.5	34.4
5th	Parnassus	Kirkham	250	97	242.5	2	5	1	2.5	25	40	25	40	25	40	53.9	48.7	53.4	57.3	40	53.1	2.6	8.4
Kirkham	6th	5th	312	97	302.64	2	6.24	1	3.12	25	40	25	40	25	40	54.9	49.7	54.3	58.3	40	54.0	3.2	10.5
Hillway	Parnassus	Irving	114	97	110.58	2	2.28	1	1.14	25	40	25	40	25	40	50.5	45.3	50.0	53.9	40	49.7	1.2	3.8
3rd	Parnassus	Irving	104	97	100.88	2	2.08	1	1.04	25	40	25	40	25	40	50.1	44.9	49.6	53.5	40	49.3	1.1	3.5
4th	Parnassus	Irving	189	97	183.33	2	3.78	1	1.89	25	40	25	40	25	40	52.7	47.5	52.2	56.1	40	51.9	1.9	6.4
5th	Parnassus	Irving	96	97	93.12	2	1.92	1	0.96	25	40	25	40	25	40	49.8	44.6	49.2	53.2	40	48.9	1.0	3.2

Assumptions: AM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Parnassus	Stanyan	Hillpoint	766	95	727.7	4	30.64	1	7.66	25	40	25	40	25	40	58.7	56.6	58.2	62.7	40	58.5	8.9	29.1
Parnassus	5th	3rd	919	95	873.05	4	36.76	1	9.19	25	40	25	40	25	40	59.5	57.4	59.0	63.5	40	59.3	10.6	34.9
5th	Parnassus	Kirkham	252	97	244.44	2	5.04	1	2.52	25	40	25	40	25	40	54.0	48.8	53.4	57.4	40	53.1	2.6	8.5
Kirkham	6th	5th	320	97	310.4	2	6.4	1	3.2	25	40	25	40	25	40	55.0	49.8	54.5	58.4	40	54.1	3.3	10.8
Hillway	Parnassus	Irving	114	97	110.58	2	2.28	1	1.14	25	40	25	40	25	40	50.5	45.3	50.0	53.9	40	49.7	1.2	3.8
3rd	Parnassus	Irving	104	97	100.88	2	2.08	1	1.04	25	40	25	40	25	40	50.1	44.9	49.6	53.5	40	49.3	1.1	3.5
4th	Parnassus	Irving	192	97	186.24	2	3.84	1	1.92	25	40	25	40	25	40	52.8	47.6	52.2	56.2	40	51.9	2.0	6.5
5th	Parnassus	Irving	97	97	94.09	2	1.94	1	0.97	25	40	25	40	25	40	49.8	44.6	49.3	53.2	40	49.0	1.0	3.3

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Parnassus	Stanyan	Hillpoint	0	95	0	4	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Parnassus	5th	3rd	0	95	0	4	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
5th	Parnassus	Kirkham	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Kirkham	6th	5th	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Hillway	Parnassus	Irving	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
3rd	Parnassus	Irving	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
4th	Parnassus	Irving	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
5th	Parnassus	Irving	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
				Auto		MT		HT		Auto	k/h	MT	k/h	HT	k/h	Auto	MT	HT					
Calveno Peak																							
	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Parnassus	Stanyan	Hillpoint	848	95	805.6	4	33.92	1	8.48	25	40	25	40	25	40	59.2	57.1	58.7	63.2	40	58.9	9.8	32.2
Parnassus	5th	3rd	1019	95	968.05	4	40.76	1	10.19	25	40	25	40	25	40	60.0	57.9	59.5	64.0	40	59.7	11.8	38.7
5th	Parnassus	Kirkham	337	97	326.89	2	6.74	1	3.37	25	40	25	40	25	40	55.2	50.0	54.7	58.6	40	54.4	3.5	11.3
Kirkham	6th	5th	437	97	423.89	2	8.74	1	4.37	25	40	25	40	25	40	56.4	51.2	55.8	59.8	40	55.5	4.5	14.7
Hillway	Parnassus	Irving	155	97	150.35	2	3.1	1	1.55	25	40	25	40	25	40	51.9	46.7	51.3	55.3	40	51.0	1.6	5.2
3rd	Parnassus	Irving	145	97	140.65	2	2.9	1	1.45	25	40	25	40	25	40	51.6	46.4	51.0	55.0	40	50.7	1.5	4.9
4th	Parnassus	Irving	240	97	232.8	2	4.8	1	2.4	25	40	25	40	25	40	53.8	48.6	53.2	57.2	40	52.9	2.5	8.1
5th	Parnassus	Irving	101	97	97.97	2	2.02	1	1.01	25	40	25	40	25	40	50.0	44.8	49.4	53.4	40	49.1	1.0	3.4

Assumptions: AM peak hour traffic data from Fehr & Peers

Parnassus Surge
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/04/2014
Case Description: UCSF Parnassus Surge

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Edgewood	Residential	58.0	58.0	58.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	180.0	0.0
Excavator	No	40		80.7	180.0	0.0
Front End Loader	No	40		79.1	180.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	70.5	66.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	68.0	64.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.5	70.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Parnassus Woods
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/04/2014
Case Description: UCSF Parnassus - Woods

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Edgewood	Residential	58.0	58.0	58.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	200.0	0.0
Excavator	No	40		80.7	200.0	0.0
Front End Loader	No	40		79.1	200.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Noise Limit Exceedance (dBA) Night Lmax	Leq
Dozer	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	67.1	63.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.6	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

METROSONICS db-308 SN 2490 V2.3 3/87

CURRENT DATE: 1/10/14
CURRENT TIME: 13:14:28

Long-term monitoring

UCSF Parnassus Campus

Location PS-LT1: Border with Edgewood Avenue Residences

Approximately 300 feet north of Surge Parking Lot

CALIBRATED: 1/07/14 @ 10:38:59

DISPLAY RANGE: 42.0dB TO 138.0dB

DOUBLING RATE: 3 dB

FILTER: A WGHT

RESPONSE: SLOW

SCHEDULED RUN: OFF

   START DATE: 1/08/14
   START TIME: 0:00:00
   LENGTH: 48:00:00

** OVERALL REPORT **

TEST STARTING DATE: 1/08/14
TEST STARTING TIME: 0:00:19
TEST LENGTH: 2DAYS 0:00:00

Lav   = 57.6dB
Lav 80= 42.3dB
Lav 90= 42.0dB
SEL   =109.8dB

Lmax = 82.8dB ON 1/08/14 @ 19:17:48
Lpk < 117dB

TIME OVER 115dB 0D 0:00:00.00

DOSE CRITERION: 90dB

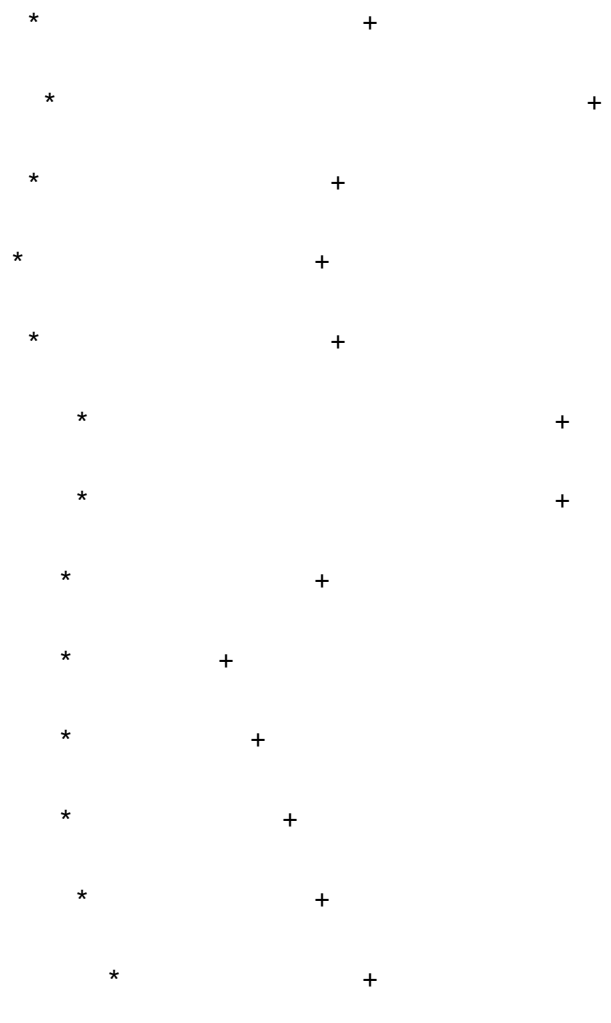
 8 HR DOSE (80dB CUTOFF)= 0.00%

8 HR DOSE (90dB CUTOFF)= 0.00%

** TIME HISTORY REPORT **

MODE: CONTINUOUS
PERIOD LENGTH: 1:00:00
TIME HISTORY CUTOFF: NONE
Ln(1): 10.0% Ln(2): 90.0%

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2
1	1/08/14	54.1	70.2	<117
0	0:00:19	1:00:00	54	53
2	1/08/14	54.4	80.8	<117
0	1:00:19	1:00:00	54	53
3	1/08/14	54.1	68.5	<117
0	2:00:19	1:00:00	54	53
4	1/08/14	53.4	67.6	<117
0	3:00:19	1:00:00	53	52
5	1/08/14	54.1	68.3	<117
0	4:00:19	1:00:00	54	53
6	1/08/14	56.2	79.8	<117
0	5:00:19	1:00:00	56	54
7	1/08/14	55.9	79.3	<117
0	6:00:19	1:00:00	56	54
8	1/08/14	55.5	67.6	<117
0	7:00:19	1:00:00	56	54
9	1/08/14	55.7	63.6	<117
0	8:00:19	1:00:00	57	54
10	1/08/14	55.5	64.4	<117
0	9:00:19	1:00:00	56	54
11	1/08/14	55.8	66.5	<117
0	10:00:19	1:00:00	56	54
12	1/08/14	56.4	68.0	<117
0	11:00:19	1:00:00	57	55
13	1/08/14	57.8	70.2	<117
0	12:00:19	1:00:00	58	57



INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
14 0	1/08/14 13:00:19	58.0 1:00:00	61.5 58	<117 57	* +
15 0	1/08/14 14:00:19	58.2 1:00:00	62.6 58	<117 57	* +
16 0	1/08/14 15:00:19	58.2 1:00:00	66.9 58	<117 57	* +
17 0	1/08/14 16:00:19	58.6 1:00:00	68.1 59	<117 58	* +
18 0	1/08/14 17:00:19	58.8 1:00:00	70.4 59	<117 58	* +
19 0	1/08/14 18:00:19	59.2 1:00:00	76.2 59	<117 58	* +
20 0	1/08/14 19:00:19	59.0 1:00:00	82.8 59	<117 58	* +
21 0	1/08/14 20:00:19	58.3 1:00:00	63.3 58	<117 58	* +
22 0	1/08/14 21:00:19	58.2 1:00:00	63.5 58	<117 57	* +
23 0	1/08/14 22:00:19	57.8 1:00:00	61.5 58	<117 57	* +
24 0	1/08/14 23:00:19	57.9 1:00:00	69.6 58	<117 57	* +
25 0	1/09/14 0:00:19	57.8 1:00:00	59.6 58	<117 57	* +
26 0	1/09/14 1:00:19	57.6 1:00:00	59.0 57	<117 57	* +
27 0	1/09/14 2:00:19	57.7 1:00:00	60.6 57	<117 57	* +
28 0	1/09/14 3:00:19	57.7 1:00:00	61.4 58	<117 57	* +
29	1/09/14	57.9	61.4	<117	* +

0	4:00:19	1:00:00	58	57	
30	1/09/14	57.8	70.7	<117	* +
0	5:00:19	1:00:00	58	57	
31	1/09/14	56.8	63.6	<117	* +
0	6:00:19	1:00:00	57	55	
32	1/09/14	56.0	70.1	<117	* +
0	7:00:19	1:00:00	56	54	
33	1/09/14	56.0	62.8	<117	* +
0	8:00:19	1:00:00	56	55	

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
34	1/09/14	56.4	72.1	<117	* +
0	9:00:19	1:00:00	57	55	
35	1/09/14	56.9	68.3	<117	* +
0	10:00:19	1:00:00	57	56	
36	1/09/14	57.5	65.9	<117	* +
0	11:00:19	1:00:00	58	56	
37	1/09/14	58.3	67.6	<117	* +
0	12:00:19	1:00:00	58	57	
38	1/09/14	59.2	74.2	<117	* +
0	13:00:19	1:00:00	59	58	
39	1/09/14	59.4	74.2	<117	* +
0	14:00:19	1:00:00	59	58	
40	1/09/14	59.6	64.5	<117	* +
0	15:00:19	1:00:00	60	58	
41	1/09/14	59.3	70.1	<117	* +
0	16:00:19	1:00:00	59	58	
42	1/09/14	59.0	69.5	<117	* +
0	17:00:19	1:00:00	59	58	
43	1/09/14	58.8	65.7	<117	* +
0	18:00:19	1:00:00	59	58	
44	1/09/14	58.7	64.9	<117	* +
0	19:00:19	1:00:00	59	58	

45	1/09/14	58.6	62.2	<117	*	+
0	20:00:19	1:00:00	59	58		
46	1/09/14	58.4	70.3	<117	*	+
0	21:00:19	1:00:00	58	58		
47	1/09/14	58.5	69.0	<117	*	+
0	22:00:19	1:00:00	58	58		
48	1/09/14	58.3	61.3	<117	*	+
0	23:00:19	PARTIAL	58	58		

** AMPLITUDE DISTRIBUTION REPORT **

TOTAL SAMPLES = 1382400

dB	SAMPLES		% OF TOTAL
52	8830	*	.63
53	89476	******	6.47
54	97965	*******	7.08
55	139371	**********	10.08
56	121363	*********	8.77
57	316324	**********	22.88
58	478364	**********	34.60
59	105802	********	7.65
60	14853	*	1.07
61	4506	+	.32
62	2188	+	.15
63	1099	.	.07
64	567	.	.04
65	384	.	.02
66	270	.	.01
67	260	.	.01
68	231	.	.01
69	185	.	.01
70	105		.00
71	58		.00
72	29		.00
73	53		.00
74	38		.00
75	29		.00
76	13		.00
77	7		.00
78	10		.00
79	8		.00
80	4		.00
81	3		.00
82	5		.00

Ln(0.0) = 82dB

Ln(10.0) = 58dB
Ln(50.0) = 57dB
Ln(99.9) = 52dB

	NO CUTOFF	80.0dB CUTOFF	90.0dB CUTOFF
Ldod	57.1dB	42.0dB	42.0dB
Losha	57.0dB	42.0dB	42.0dB
Leq(6)	56.9dB	42.0dB	42.0dB

METROSONICS db-308 SN 2593 V2.3 3/87

CURRENT DATE: 1/10/14
CURRENT TIME: 12:13:55

Long-term monitoring

UCSF Parnassus Campus

Location PS-LT1: Border with Edgewood Avenue Residences

Approximately 300 feet north of Surgr Parking Lot

CALIBRATED: 1/07/14 @ 10:14:10

DISPLAY RANGE: 42.3dB TO 138.3dB

DOUBLING RATE: 3 dB

FILTER: A WGHT

RESPONSE: SLOW

SCHEDULED RUN: OFF

   START DATE: 1/08/14
   START TIME: 0:00:00
   LENGTH: 48:00:00

** OVERALL REPORT **

TEST STARTING DATE: 1/08/14
TEST STARTING TIME: 0:00:19
TEST LENGTH: 2DAYS 0:00:00

Lav   = 58.5dB
Lav 80= 52.3dB
Lav 90= 48.7dB
SEL   =110.7dB

Lmax = 92.7dB ON 1/09/14 @ 13:53:51
Lpk = 117dB ON 1/09/14 @ 5:21:33

TIME OVER 115dB 0D 0:00:00.00

DOSE CRITERION: 90dB

8 HR DOSE (80dB CUTOFF)= 0.09%
8 HR DOSE (90dB CUTOFF)= 0.04%

** TIME HISTORY REPORT **

MODE: CONTINUOUS
PERIOD LENGTH: 1:00:00
TIME HISTORY CUTOFF: NONE
Ln(1): 10.0% Ln(2): 90.0%

INT# / TAG#	START TIME	Lav ET	Lmax L1	Lpk L2
1	1/08/14	52.6	74.4	<117
0	0:00:19	1:00:00	53	47
2	1/08/14	51.5	80.1	<117
0	1:00:19	1:00:00	52	47
3	1/08/14	48.7	62.0	<117
0	2:00:19	1:00:00	50	46
4	1/08/14	48.2	61.8	<117
0	3:00:19	1:00:00	49	46
5	1/08/14	51.5	73.9	<117
0	4:00:19	1:00:00	52	46
6	1/08/14	54.5	70.9	<117
0	5:00:19	1:00:00	57	48
7	1/08/14	56.5	72.2	<117
0	6:00:19	1:00:00	59	50
8	1/08/14	59.9	77.1	<117
0	7:00:19	1:00:00	62	53
9	1/08/14	58.7	73.0	<117
0	8:00:19	1:00:00	61	53
10	1/08/14	61.4	89.7	<117
0	9:00:19	1:00:00	61	52
11	1/08/14	57.6	68.7	<117
0	10:00:19	1:00:00	60	52
12	1/08/14	57.7	71.7	<117

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
0	11:00:19	1:00:00	60	52	
13	1/08/14	59.7	80.2	<117	* +
0	12:00:19	1:00:00	62	52	
14	1/08/14	57.1	70.4	<117	* +
0	13:00:19	1:00:00	59	52	
15	1/08/14	58.3	82.1	<117	* +
0	14:00:19	1:00:00	60	52	
16	1/08/14	58.2	71.8	<117	* +
0	15:00:19	1:00:00	61	53	
17	1/08/14	58.6	78.9	<117	* +
0	16:00:19	1:00:00	60	53	
18	1/08/14	58.3	70.3	<117	* +
0	17:00:19	1:00:00	60	54	
19	1/08/14	58.5	78.3	<117	* +
0	18:00:19	1:00:00	60	54	
20	1/08/14	57.8	75.5	<117	* +
0	19:00:19	1:00:00	60	52	
21	1/08/14	55.9	70.4	<117	* +
0	20:00:19	1:00:00	58	51	
22	1/08/14	54.7	67.8	<117	* +
0	21:00:19	1:00:00	56	50	
23	1/08/14	53.8	70.7	<117	* +
0	22:00:19	1:00:00	56	49	
24	1/08/14	53.0	70.5	<117	* +
0	23:00:19	1:00:00	54	48	
25	1/09/14	52.6	74.5	<117	* +
0	0:00:19	1:00:00	53	47	
26	1/09/14	50.1	64.5	<117	* +
0	1:00:19	1:00:00	51	47	

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
27	1/09/14	49.0	60.2	<117	* +
0	2:00:19	1:00:00	50	47	
28	1/09/14	49.6	68.1	<117	* +
0	3:00:19	1:00:00	49	46	
29	1/09/14	53.4	80.6	<117	* +
0	4:00:19	1:00:00	53	46	
30	1/09/14	57.8	82.5	117	* +
0	5:00:19	1:00:00	58	48	
31	1/09/14	59.7	81.1	<117	* +
0	6:00:19	1:00:00	62	51	
32	1/09/14	59.5	72.8	<117	* +
0	7:00:19	1:00:00	62	54	
33	1/09/14	59.1	73.7	<117	* +
0	8:00:19	1:00:00	62	54	
34	1/09/14	60.6	81.9	<117	* +
0	9:00:19	1:00:00	63	53	
35	1/09/14	58.6	75.4	<117	* +
0	10:00:19	1:00:00	61	52	
36	1/09/14	57.7	73.3	<117	* +
0	11:00:19	1:00:00	60	53	
37	1/09/14	58.3	72.3	<117	* +
0	12:00:19	1:00:00	61	53	
38	1/09/14	66.8	92.7	<117	* +
0	13:00:19	1:00:00	63	54	
39	1/09/14	59.5	74.0	117	* +
0	14:00:19	1:00:00	62	54	
40	1/09/14	60.6	77.2	<117	* +
0	15:00:19	1:00:00	63	55	
41	1/09/14	66.2	91.4	<117	* +
0	16:00:19	1:00:00	62	54	

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   42  1/09/14   58.6    74.0 <117              *           +
    0 17:00:19  1:00:00  60     54

   43  1/09/14   58.3    68.6 <117              *       +
    0 18:00:19  1:00:00  60     54

   44  1/09/14   57.5    69.6 <117             *         +
    0 19:00:19  1:00:00  60     53

   45  1/09/14   56.2    70.3 <117            *           +
    0 20:00:19  1:00:00  58     52

   46  1/09/14   59.3    87.4 <117              *                      +
    0 21:00:19  1:00:00  57     50

   47  1/09/14   55.3    70.9 <117            *            +
    0 22:00:19  1:00:00  56     50

   48  1/09/14   54.6    75.8 <117            *                +
    0 23:00:19  PARTIAL  55     49
```

** AMPLITUDE DISTRIBUTION REPORT **

TOTAL SAMPLES = 1382400

dB	SAMPLES		% OF TOTAL
45	3		.00
46	34983	***	2.53
47	106198	********	7.68
48	72206	*****	5.22
49	55935	****	4.04
50	66612	*****	4.81
51	74298	*****	5.37
52	86972	******	6.29
53	113648	********	8.22
54	130354	*********	9.42
55	131256	*********	9.49
56	141115	**********	10.20
57	101126	*******	7.31
58	77475	******	5.60
59	47830	***	3.45
60	35309	***	2.55
61	26872	**	1.94
62	20736	**	1.50
63	15958	*	1.15
64	14227	*	1.02

65	10865	*	.78
66	6750	+	.48
67	3963	+	.28
68	2665	+	.19
69	1322	.	.09
70	950	.	.06
71	624	.	.04
72	463	.	.03
73	444	.	.03
74	237	.	.01
75	176	.	.01
76	128		.00
77	109		.00
78	70		.00
79	61		.00
80	67		.00
81	47		.00
82	52		.00
83	36		.00
84	39		.00
85	22		.00
86	21		.00
87	34		.00
88	31		.00
89	33		.00
90	41		.00
91	27		.00
92	10		.00

Ln(0.0) = 92dB
Ln(10.0) = 60dB
Ln(50.0) = 54dB
Ln(99.9) = 46dB

	NO CUTOFF	80.0dB CUTOFF	90.0dB CUTOFF
Ldod	56.4dB	45.1dB	43.3dB
Losha	55.7dB	43.0dB	42.3dB
Leq(6)	55.4dB	42.4dB	42.1dB

METROSONICS db-308 SN 2490 V2.3 3/87

CURRENT DATE: 1/10/14
CURRENT TIME: 13:14:28

_____

_____

_____

_____

CALIBRATED: 1/07/14 @ 10:38:59

DISPLAY RANGE: 42.0dB TO 138.0dB

DOUBLING RATE: 3 dB

FILTER: A WGHT

RESPONSE: SLOW

SCHEDULED RUN: OFF

   START DATE: 1/08/14
   START TIME: 0:00:00
   LENGTH: 48:00:00

** OVERALL REPORT **

TEST STARTING DATE: 1/08/14
TEST STARTING TIME: 0:00:19
TEST LENGTH: 2DAYS 0:00:00

Lav   = 57.6dB
Lav 80= 42.3dB
Lav 90= 42.0dB
SEL   =109.8dB

Lmax = 82.8dB ON 1/08/14 @ 19:17:48
Lpk < 117dB

TIME OVER 115dB 0D 0:00:00.00

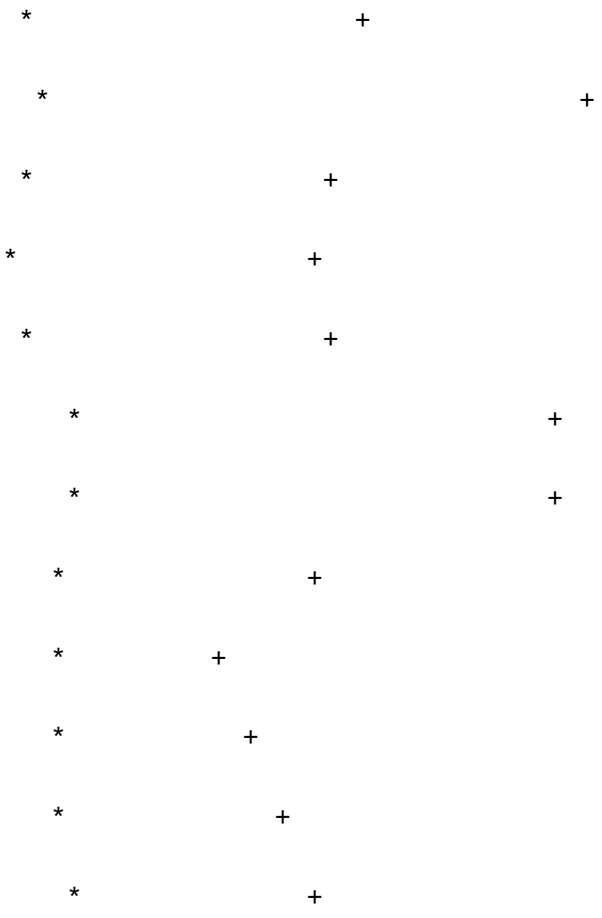
DOSE CRITERION: 90dB

8 HR DOSE (80dB CUTOFF)= 0.00%
8 HR DOSE (90dB CUTOFF)= 0.00%

** TIME HISTORY REPORT **

MODE: CONTINUOUS
PERIOD LENGTH: 1:00:00
TIME HISTORY CUTOFF: NONE
Ln(1): 10.0% Ln(2): 90.0%

INT# / TAG#	START TIME	Lav ET	Lmax L1	Lpk L2
1	1/08/14	54.1	70.2	<117
0	0:00:19	1:00:00	54	53
2	1/08/14	54.4	80.8	<117
0	1:00:19	1:00:00	54	53
3	1/08/14	54.1	68.5	<117
0	2:00:19	1:00:00	54	53
4	1/08/14	53.4	67.6	<117
0	3:00:19	1:00:00	53	52
5	1/08/14	54.1	68.3	<117
0	4:00:19	1:00:00	54	53
6	1/08/14	56.2	79.8	<117
0	5:00:19	1:00:00	56	54
7	1/08/14	55.9	79.3	<117
0	6:00:19	1:00:00	56	54
8	1/08/14	55.5	67.6	<117
0	7:00:19	1:00:00	56	54
9	1/08/14	55.7	63.6	<117
0	8:00:19	1:00:00	57	54
10	1/08/14	55.5	64.4	<117
0	9:00:19	1:00:00	56	54
11	1/08/14	55.8	66.5	<117
0	10:00:19	1:00:00	56	54
12	1/08/14	56.4	68.0	<117



INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
0	11:00:19	1:00:00	57	55	
13	1/08/14	57.8	70.2	<117	* +
0	12:00:19	1:00:00	58	57	
14	1/08/14	58.0	61.5	<117	* +
0	13:00:19	1:00:00	58	57	
15	1/08/14	58.2	62.6	<117	* +
0	14:00:19	1:00:00	58	57	
16	1/08/14	58.2	66.9	<117	* +
0	15:00:19	1:00:00	58	57	
17	1/08/14	58.6	68.1	<117	* +
0	16:00:19	1:00:00	59	58	
18	1/08/14	58.8	70.4	<117	* +
0	17:00:19	1:00:00	59	58	
19	1/08/14	59.2	76.2	<117	* +
0	18:00:19	1:00:00	59	58	
20	1/08/14	59.0	82.8	<117	* +
0	19:00:19	1:00:00	59	58	
21	1/08/14	58.3	63.3	<117	* +
0	20:00:19	1:00:00	58	58	
22	1/08/14	58.2	63.5	<117	* +
0	21:00:19	1:00:00	58	57	
23	1/08/14	57.8	61.5	<117	* +
0	22:00:19	1:00:00	58	57	
24	1/08/14	57.9	69.6	<117	* +
0	23:00:19	1:00:00	58	57	
25	1/09/14	57.8	59.6	<117	* +
0	0:00:19	1:00:00	58	57	
26	1/09/14	57.6	59.0	<117	* +
0	1:00:19	1:00:00	57	57	

27	1/09/14	57.7	60.6	<117	* +
0	2:00:19	1:00:00	57	57	
28	1/09/14	57.7	61.4	<117	* +
0	3:00:19	1:00:00	58	57	
29	1/09/14	57.9	61.4	<117	* +
0	4:00:19	1:00:00	58	57	
30	1/09/14	57.8	70.7	<117	* +
0	5:00:19	1:00:00	58	57	
31	1/09/14	56.8	63.6	<117	* +
0	6:00:19	1:00:00	57	55	
32	1/09/14	56.0	70.1	<117	* +
0	7:00:19	1:00:00	56	54	
33	1/09/14	56.0	62.8	<117	* +
0	8:00:19	1:00:00	56	55	

INT#	START	Lav	Lmax	Lpk	
TAG#	TIME	ET	L1	L2	
34	1/09/14	56.4	72.1	<117	* +
0	9:00:19	1:00:00	57	55	
35	1/09/14	56.9	68.3	<117	* +
0	10:00:19	1:00:00	57	56	
36	1/09/14	57.5	65.9	<117	* +
0	11:00:19	1:00:00	58	56	
37	1/09/14	58.3	67.6	<117	* +
0	12:00:19	1:00:00	58	57	
38	1/09/14	59.2	74.2	<117	* +
0	13:00:19	1:00:00	59	58	
39	1/09/14	59.4	74.2	<117	* +
0	14:00:19	1:00:00	59	58	
40	1/09/14	59.6	64.5	<117	* +
0	15:00:19	1:00:00	60	58	
41	1/09/14	59.3	70.1	<117	* +
0	16:00:19	1:00:00	59	58	

```
  42  1/09/14   59.0    69.5 <117            *            +
   0 17:00:19  1:00:00  59     58

  43  1/09/14   58.8    65.7 <117           *         +
   0 18:00:19  1:00:00  59     58

  44  1/09/14   58.7    64.9 <117           *        +
   0 19:00:19  1:00:00  59     58

  45  1/09/14   58.6    62.2 <117           *     +
   0 20:00:19  1:00:00  59     58

  46  1/09/14   58.4    70.3 <117           *              +
   0 21:00:19  1:00:00  58     58

  47  1/09/14   58.5    69.0 <117           *            +
   0 22:00:19  1:00:00  58     58

  48  1/09/14   58.3    61.3 <117           *   +
   0 23:00:19  PARTIAL  58     58
```

** AMPLITUDE DISTRIBUTION REPORT **

TOTAL SAMPLES = 1382400

dB	SAMPLES		% OF TOTAL
52	8830	*	.63
53	89476	******	6.47
54	97965	*******	7.08
55	139371	**********	10.08
56	121363	*********	8.77
57	316324	**********************	22.88
58	478364	**********************************	34.60
59	105802	********	7.65
60	14853	*	1.07
61	4506	+	.32
62	2188	+	.15
63	1099	.	.07
64	567	.	.04
65	384	.	.02
66	270	.	.01
67	260	.	.01
68	231	.	.01
69	185	.	.01
70	105		.00
71	58		.00

72	29	.00
73	53	.00
74	38	.00
75	29	.00
76	13	.00
77	7	.00
78	10	.00
79	8	.00
80	4	.00
81	3	.00
82	5	.00

Ln(0.0) = 82dB
Ln(10.0) = 58dB
Ln(50.0) = 57dB
Ln(99.9) = 52dB

	NO CUTOFF	80.0dB CUTOFF	90.0dB CUTOFF
Ldod	57.1dB	42.0dB	42.0dB
Losha	57.0dB	42.0dB	42.0dB
Leq(6)	56.9dB	42.0dB	42.0dB

METROSONICS db-308 SN 2593 V2.3 3/87

CURRENT DATE: 1/10/14
CURRENT TIME: 12:44:41

Long-term Monitoring

UCSF Parnassus Campus

Location PS-LT-3 UC Hall

Floor 1 Balcony on North side of building

CALIBRATED: 1/07/14 @ 10:14:10

DISPLAY RANGE: 42.3dB TO 138.3dB

DOUBLING RATE: 3 dB

FILTER: A WGHT

RESPONSE: SLOW

SCHEDULED RUN: OFF

   START DATE: 1/08/14
   START TIME: 0:00:00
   LENGTH: 48:00:00

** OVERALL REPORT **

TEST STARTING DATE: 1/08/14
TEST STARTING TIME: 0:00:19
TEST LENGTH: 2DAYS 0:00:00

Lav   = 58.5dB
Lav 80= 52.3dB
Lav 90= 48.7dB
SEL   =110.7dB

Lmax = 92.7dB ON 1/09/14 @ 13:53:51
Lpk = 117dB ON 1/09/14 @ 5:21:33

TIME OVER 115dB 0D 0:00:00.00

DOSE CRITERION: 90dB

 8 HR DOSE (80dB CUTOFF)= 0.09%
 8 HR DOSE (90dB CUTOFF)= 0.04%

** TIME HISTORY REPORT **

MODE: CONTINUOUS
PERIOD LENGTH: 1:00:00
TIME HISTORY CUTOFF: NONE
Ln(1): 10.0% Ln(2): 90.0%

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2
1	1/08/14	52.6	74.4	<117
0	0:00:19	1:00:00	53	47
2	1/08/14	51.5	80.1	<117
0	1:00:19	1:00:00	52	47
3	1/08/14	48.7	62.0	<117
0	2:00:19	1:00:00	50	46
4	1/08/14	48.2	61.8	<117
0	3:00:19	1:00:00	49	46
5	1/08/14	51.5	73.9	<117
0	4:00:19	1:00:00	52	46
6	1/08/14	54.5	70.9	<117
0	5:00:19	1:00:00	57	48
7	1/08/14	56.5	72.2	<117
0	6:00:19	1:00:00	59	50
8	1/08/14	59.9	77.1	<117
0	7:00:19	1:00:00	62	53
9	1/08/14	58.7	73.0	<117
0	8:00:19	1:00:00	61	53
10	1/08/14	61.4	89.7	<117
0	9:00:19	1:00:00	61	52
11	1/08/14	57.6	68.7	<117
0	10:00:19	1:00:00	60	52
12	1/08/14	57.7	71.7	<117
0	11:00:19	1:00:00	60	52
13	1/08/14	59.7	80.2	<117
0	12:00:19	1:00:00	62	52
14	1/08/14	57.1	70.4	<117

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
0	13:00:19	1:00:00	59	52	
15	1/08/14	58.3	82.1	<117	
0	14:00:19	1:00:00	60	52	
16	1/08/14	58.2	71.8	<117	
0	15:00:19	1:00:00	61	53	
17	1/08/14	58.6	78.9	<117	
0	16:00:19	1:00:00	60	53	
18	1/08/14	58.3	70.3	<117	
0	17:00:19	1:00:00	60	54	
19	1/08/14	58.5	78.3	<117	
0	18:00:19	1:00:00	60	54	
20	1/08/14	57.8	75.5	<117	
0	19:00:19	1:00:00	60	52	
21	1/08/14	55.9	70.4	<117	
0	20:00:19	1:00:00	58	51	
22	1/08/14	54.7	67.8	<117	
0	21:00:19	1:00:00	56	50	
23	1/08/14	53.8	70.7	<117	
0	22:00:19	1:00:00	56	49	
24	1/08/14	53.0	70.5	<117	
0	23:00:19	1:00:00	54	48	
25	1/09/14	52.6	74.5	<117	
0	0:00:19	1:00:00	53	47	
26	1/09/14	50.1	64.5	<117	
0	1:00:19	1:00:00	51	47	
27	1/09/14	49.0	60.2	<117	
0	2:00:19	1:00:00	50	47	
28	1/09/14	49.6	68.1	<117	
0	3:00:19	1:00:00	49	46	
29	1/09/14	53.4	80.6	<117	
0	4:00:19	1:00:00	53	46	

INT# / TAG#	START TIME	Lav ET	Lmax L1	Lpk L2
30	1/09/14 5:00:19	57.8 1:00:00	82.5 58	117 48
31	1/09/14 6:00:19	59.7 1:00:00	81.1 62	<117 51
32	1/09/14 7:00:19	59.5 1:00:00	72.8 62	<117 54
33	1/09/14 8:00:19	59.1 1:00:00	73.7 62	<117 54
34	1/09/14 9:00:19	60.6 1:00:00	81.9 63	<117 53
35	1/09/14 10:00:19	58.6 1:00:00	75.4 61	<117 52
36	1/09/14 11:00:19	57.7 1:00:00	73.3 60	<117 53
37	1/09/14 12:00:19	58.3 1:00:00	72.3 61	<117 53
38	1/09/14 13:00:19	66.8 1:00:00	92.7 63	<117 54
39	1/09/14 14:00:19	59.5 1:00:00	74.0 62	117 54
40	1/09/14 15:00:19	60.6 1:00:00	77.2 63	<117 55
41	1/09/14 16:00:19	66.2 1:00:00	91.4 62	<117 54
42	1/09/14 17:00:19	58.6 1:00:00	74.0 60	<117 54
43	1/09/14 18:00:19	58.3 1:00:00	68.6 60	<117 54
44	1/09/14 19:00:19	57.5 1:00:00	69.6 60	<117 53
45	1/09/14 20:00:19	56.2 1:00:00	70.3 58	<117 52

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   46  1/09/14   59.3    87.4 <117              *                       +
    0 21:00:19  1:00:00  57     50

   47  1/09/14   55.3    70.9 <117           *            +
    0 22:00:19  1:00:00  56     50

   48  1/09/14   54.6    75.8 <117           *                +
    0 23:00:19  PARTIAL  55     49
```

** AMPLITUDE DISTRIBUTION REPORT **

TOTAL SAMPLES = 1382400

dB	SAMPLES		% OF TOTAL
45	3		.00
46	34983	***	2.53
47	106198	********	7.68
48	72206	*****	5.22
49	55935	****	4.04
50	66612	*****	4.81
51	74298	*****	5.37
52	86972	******	6.29
53	113648	********	8.22
54	130354	*********	9.42
55	131256	*********	9.49
56	141115	**********	10.20
57	101126	*******	7.31
58	77475	******	5.60
59	47830	***	3.45
60	35309	***	2.55
61	26872	**	1.94
62	20736	**	1.50
63	15958	*	1.15
64	14227	*	1.02
65	10865	*	.78
66	6750	+	.48
67	3963	+	.28
68	2665	+	.19
69	1322	.	.09
70	950	.	.06
71	624	.	.04
72	463	.	.03
73	444	.	.03
74	237	.	.01
75	176	.	.01
76	128		.00
77	109		.00
78	70		.00
79	61		.00

80	67	.00
81	47	.00
82	52	.00
83	36	.00
84	39	.00
85	22	.00
86	21	.00
87	34	.00
88	31	.00
89	33	.00
90	41	.00
91	27	.00
92	10	.00

Ln(0.0) = 92dB
Ln(10.0) = 60dB
Ln(50.0) = 54dB
Ln(99.9) = 46dB

	NO CUTOFF	80.0dB CUTOFF	90.0dB CUTOFF
Ldod	56.4dB	45.1dB	43.3dB
Losha	55.7dB	43.0dB	42.3dB
Leq(6)	55.4dB	42.4dB	42.1dB

Calculated Ldn from long-term noise monitoring data

UCSF Mission Bay Campus Location MB-LT-1

			TIME	dBA	Remove LOG	10 dBA Penalized Values	5 dBA Penalized Values
1/9/2014	Midnight		0 / 24	56.1	407380	4073803	1288250
	am	1:00	100	53.2	208930	2089296	660693
		2:00	200	54.3	269153	2691535	851138
		3:00	300	56.4	436516	4365158	1380384
		4:00	400	56.4	436516	4365158	1380384
		5:00	500	58.5	707946	7079458	2238721
		6:00	600	60.3	1071519	10715193	3388442
		7:00	700	61.4	1380384	13803843	4365158
		8:00	800	62.0	1584893	15848932	5011872
		9:00	900	60.3	1071519	10715193	3388442
		10:00	1000	59.3	851138	8511380	2691535
		11:00	1100	60.5	1122018	11220185	3548134
		12:00	1200	63.5	2238721	22387211	7079458
	pm	1:00	1300	61.1	1288250	12882496	4073803
		2:00	1400	61.5	1412538	14125375	4466836
		3:00	1500	56.5	446684	4466836	1412538
		4:00	1600	56.2	416869	4168694	1318257
		5:00	1700	57.9	616595	6165950	1949845
		6:00	1800	58.2	660693	6606934	2089296
		7:00	1900	60.3	1071519	10715193	3388442
		8:00	2000	58.3	676083	6760830	2137962
		9:00	2100	58.7	741310	7413102	2344229
		10:00	2200	57.2	524807	5248075	1659587
	pm	11:00	2300	57.1	512861	5128614	1621810

Leq Morning Peak Hour 7:00-10:00 a.m.

61 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.

58 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)

57 dBA

Leq Daytime 7:00 am-10:00 p.m.

60 dBA

Leq 24-Hour

59 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

64 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m.,

64 dBA **and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.**

CNEL - Ldn 0.36526028

METROSONICS db-308 SN 2490 V2.3 3/87

CURRENT DATE: 1/21/14
CURRENT TIME: 11:16:06

_____

_____

_____

_____

CALIBRATED: 1/16/14 @ 15:34:33

DISPLAY RANGE: 42.0dB TO 138.0dB

DOUBLING RATE: 3 dB

FILTER: A WGHT

RESPONSE: SLOW

SCHEDULED RUN: OFF

   START DATE: 1/17/14
   START TIME: 0:00:00
   LENGTH: 48:00:00

** OVERALL REPORT **

TEST STARTING DATE: 1/17/14
TEST STARTING TIME: 0:00:19
TEST LENGTH: 2DAYS 0:00:00

Lav   = 58.6dB
Lav 80= 45.8dB
Lav 90= 43.3dB
SEL   =110.8dB

Lmax = 93.9dB ON 1/17/14 @ 12:32:41
Lpk < 117dB

TIME OVER 115dB 0D 0:00:00.00

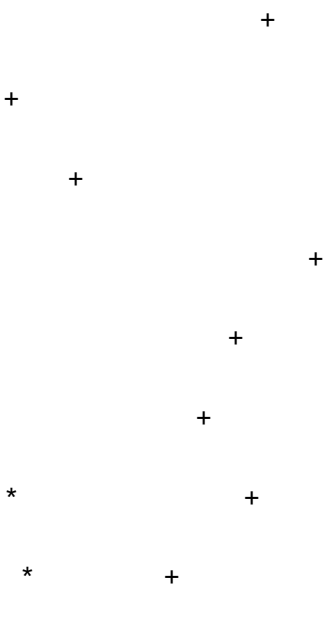
DOSE CRITERION: 90dB

 8 HR DOSE (80dB CUTOFF)= 0.02%
 8 HR DOSE (90dB CUTOFF)= 0.01%

** TIME HISTORY REPORT **

MODE: CONTINUOUS
PERIOD LENGTH: 1:00:00
TIME HISTORY CUTOFF: NONE
Ln(1): 10.0% Ln(2): 90.0%

INT# / TAG#	START TIME	Lav ET	Lmax L1	Lpk L2
1	1/17/14	56.1	77.6	<117
0	0:00:19	1:00:00	56	53
2	1/17/14	53.2	60.0	<117
0	1:00:19	1:00:00	54	52
3	1/17/14	54.3	64.8	<117
0	2:00:19	1:00:00	55	52
4	1/17/14	56.4	80.9	<117
0	3:00:19	1:00:00	55	52
5	1/17/14	56.4	75.2	<117
0	4:00:19	1:00:00	56	53
6	1/17/14	58.5	72.5	<117
0	5:00:19	1:00:00	60	55
7	1/17/14	60.3	76.0	<117
0	6:00:19	1:00:00	61	58
8	1/17/14	61.4	71.3	<117
0	7:00:19	1:00:00	63	58



9	1/17/14	62.0	80.7	<117	
0	8:00:19	1:00:00	63	58	
10	1/17/14	60.3	72.9	<117	
0	9:00:19	1:00:00	62	57	
11	1/17/14	59.3	73.6	<117	
0	10:00:19	1:00:00	61	56	
12	1/17/14	60.5	76.7	<117	
0	11:00:19	1:00:00	62	57	
13	1/17/14	63.5	93.9	<117	
0	12:00:19	1:00:00	60	55	
14	1/17/14	61.1	76.0	<117	
0	13:00:19	1:00:00	63	58	
15	1/17/14	61.5	74.4	<117	
0	14:00:19	1:00:00	64	56	

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
16	1/17/14	56.5	71.3	<117	
0	15:00:19	1:00:00	58	53	
17	1/17/14	56.2	66.7	<117	
0	16:00:19	1:00:00	57	54	
18	1/17/14	57.9	75.4	<117	
0	17:00:19	1:00:00	59	55	
19	1/17/14	58.2	66.5	<117	
0	18:00:19	1:00:00	60	55	
20	1/17/14	60.3	70.1	<117	
0	19:00:19	1:00:00	62	57	
21	1/17/14	58.3	72.3	<117	
0	20:00:19	1:00:00	59	56	

MB Noise

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
22 0	1/17/14 21:00:19	58.7 1:00:00	72.9 59	<117 56	
23 0	1/17/14 22:00:19	57.2 1:00:00	72.1 58	<117 55	
24 0	1/17/14 23:00:19	57.1 1:00:00	74.2 58	<117 54	
25 0	1/18/14 0:00:19	55.4 1:00:00	62.7 56	<117 54	
26 0	1/18/14 1:00:19	54.3 1:00:00	60.8 55	<117 52	
27 0	1/18/14 2:00:19	55.0 1:00:00	60.1 56	<117 53	
28 0	1/18/14 3:00:19	54.3 1:00:00	58.2 55	<117 53	
29 0	1/18/14 4:00:19	54.6 1:00:00	61.3 55	<117 53	
30 0	1/18/14 5:00:19	56.1 1:00:00	68.0 57	<117 54	
31 0	1/18/14 6:00:19	57.0 1:00:00	64.5 58	<117 55	
32 0	1/18/14 7:00:19	57.2 1:00:00	70.1 58	<117 54	
33 0	1/18/14 8:00:19	58.9 1:00:00	73.0 60	<117 56	
34 0	1/18/14 9:00:19	59.0 1:00:00	73.3 61	<117 55	

35	1/18/14	63.0	81.9	<117	*	+
0	10:00:19	1:00:00	61	55		
36	1/18/14	56.1	68.1	<117	*	+
0	11:00:19	1:00:00	57	53		
37	1/18/14	56.2	69.4	<117	*	+
0	12:00:19	1:00:00	57	54		
38	1/18/14	56.3	68.5	<117	*	+
0	13:00:19	1:00:00	57	54		
39	1/18/14	57.1	64.2	<117	*	+
0	14:00:19	1:00:00	58	55		
40	1/18/14	58.6	66.7	<117	*	+
0	15:00:19	1:00:00	60	56		
41	1/18/14	60.1	68.9	<117	*	+
0	16:00:19	1:00:00	61	58		
42	1/18/14	59.0	71.0	<117	*	+
0	17:00:19	1:00:00	60	56		
43	1/18/14	59.8	71.6	<117	*	+
0	18:00:19	1:00:00	61	57		
44	1/18/14	58.6	74.6	<117	*	+
0	19:00:19	1:00:00	59	56		
45	1/18/14	57.8	72.2	<117	*	+
0	20:00:19	1:00:00	59	56		
46	1/18/14	58.1	69.5	<117	*	+
0	21:00:19	1:00:00	59	56		
47	1/18/14	57.7	74.3	<117	*	+
0	22:00:19	1:00:00	58	55		
48	1/18/14	56.0	62.8	<117	*	+
0	23:00:19	PARTIAL	57	54		

** AMPLITUDE DISTRIBUTION REPORT **

TOTAL SAMPLES = 1382400

dB	SAMPLES		% OF TOTAL
51	3495	+	.25
52	31857	**	2.30
53	94545	*******	6.83
54	155636	***********	11.25
55	172082	************	12.44
56	211742	***************	15.31
57	198038	**************	14.32
58	184960	*************	13.37
59	133418	**********	9.65
60	88676	******	6.41
61	47851	***	3.46
62	25798	**	1.86
63	13151	*	.95
64	7129	*	.51
65	4364	+	.31
66	2952	+	.21
67	1808	+	.13
68	1458	+	.10
69	898	.	.06
70	590	.	.04
71	470	.	.03
72	322	.	.02
73	260	.	.01
74	189	.	.01
75	170	.	.01
76	147	.	.01
77	102		.00
78	85		.00
79	70		.00
80	45		.00
81	33		.00
82	17		.00
83	11		.00
84	3		.00
85	3		.00
86	2		.00
87	3		.00
88	2		.00
89	2		.00

90	2	.00
91	4	.00
92	4	.00
93	6	.00

Ln(0.0) = 93dB
Ln(10.0) = 60dB
Ln(50.0) = 57dB
Ln(99.9) = 51dB

	NO CUTOFF	80.0dB CUTOFF	90.0dB CUTOFF
Ldod	57.6dB	42.8dB	42.4dB
Losha	57.4dB	42.2dB	42.1dB
Leq(6)	57.3dB	42.1dB	42.0dB

METROSONICS db-308 SN 2490 V2.3 3/87

CURRENT DATE: 3/10/14
CURRENT TIME: 8:20:45

_____

_____

_____

_____

CALIBRATED: 3/04/14 @ 16:19:42

DISPLAY RANGE: 41.7dB TO 137.7dB

DOUBLING RATE: 3 dB

FILTER: A WGHT

RESPONSE: SLOW

SCHEDULED RUN: OFF

   START DATE: 1/28/14
   START TIME:14:00:00
   LENGTH: 24:00:00

** OVERALL REPORT **

TEST STARTING DATE: 3/07/14
TEST STARTING TIME: 16:15:20
TEST LENGTH: 0DAYS 0:41:15

Lav   = 69.3dB
Lav 80= 58.6dB
Lav 90= 41.7dB
SEL   =103.1dB

Lmax = 85.9dB ON 3/07/14 @ 17:21:43
Lpk < 116dB

TIME OVER 115dB 0D 0:00:00.00

DOSE CRITERION: 90dB

8 HR DOSE (80dB CUTOFF)= 0.00%
8 HR PROJ. DOSE (80dB CUTOFF)= 0.00%
8 HR DOSE (90dB CUTOFF)= 0.00%
8 HR PROJ. DOSE (90dB CUTOFF)= 0.00%

** TIME HISTORY REPORT **

MODE: CONTINUOUS
PERIOD LENGTH: 0:10:00
TIME HISTORY CUTOFF: NONE
Ln(1): 10.0% Ln(2): 90.0%

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2
1 0	3/07/14 16:15:20	67.8 0:10:00	83.6 70	<116 61
2 0	3/07/14 16:25:20	63.1 PARTIAL	63.7 63	<116 62
3 0	3/07/14 16:30:11	68.0 0:10:00	76.8 69	<116 65
4 0	3/07/14 16:40:11	67.5 PARTIAL	68.6 68	<116 66
5 0	3/07/14 16:56:36	70.9 0:10:00	79.4 73	<116 66
6 0	3/07/14 17:06:36	65.7 PARTIAL	67.7 67	<116 64
7 0	3/07/14 17:19:20	69.8 0:10:00	85.9 71	<116 62
8 0	3/07/14 17:29:20	67.9 PARTIAL	72.6 70	<116 62

** AMPLITUDE DISTRIBUTION REPORT **

TOTAL SAMPLES = 19806

dB	SAMPLES	% OF TOTAL

59	90	+	.45
60	162	*	.81
61	732	****	3.69
62	1355	*******	6.84
63	1091	******	5.50
64	1591	********	8.03
65	1648	********	8.32
66	1729	*********	8.72
67	2195	**********	11.08
68	2572	**********	12.98
69	2139	**********	10.79
70	1368	*******	6.90
71	1140	******	5.75
72	728	****	3.67
73	467	**	2.35
74	323	**	1.63
75	166	*	.83
76	122	*	.61
77	58	+	.29
78	34	+	.17
79	24	+	.12
80	14	.	.07
81	17	.	.08
82	10	.	.05
83	14	.	.07
84	10	.	.05
85	7	.	.03

Ln(0.0) = 85dB
Ln(10.0) = 72dB
Ln(50.0) = 67dB
Ln(99.9) = 59dB

	NO CUTOFF	80.0dB CUTOFF	90.0dB CUTOFF
Ldod	68.3dB	50.0dB	41.0dB
Losha	68.1dB	41.8dB	41.0dB
Leq(6)	67.9dB	44.1dB	41.0dB

Mission Bay Block 15
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2014
Case Description: UCSF Block 15

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Bolck 18 Child Care	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	250.0	0.0
Excavator	No	40		80.7	250.0	0.0
Front End Loader	No	40		79.1	250.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Dozer	67.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	66.7	62.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	65.1	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.7	67.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Mission Bay Block 18
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2014
Case Description: UCSF Block 18

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Block 20	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	100.0	0.0
Excavator	No	40		80.7	100.0	0.0
Front End Loader	No	40		79.1	100.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Dozer	75.6	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.6	75.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Noise Limit Exceedance (dBA)

Equipment	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A

Mission Bay Block 18-2
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2014
Case Description: UCSF Block 18

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Block 15	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	200.0	0.0
Excavator	No	40		80.7	200.0	0.0
Front End Loader	No	40		79.1	200.0	0.0

Results

Noise Limits (dBA)						Noise Limit Exceedance (dBA)			
Calculated (dBA)		Day		Evening		Night		Day	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	67.1	63.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.6	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Mission Bay Block 23
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/06/2014
Case Description: UCSF Block 23

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Block 20	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	100.0	0.0
Excavator	No	40		80.7	100.0	0.0
Front End Loader	No	40		79.1	100.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Dozer	75.6	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.6	75.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Noise Limit Exceedance (dBA)

Equipment	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A

Mission Bay Block 25
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2014
Case Description: UCSF Block 25

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Block 20	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	450.0	0.0
Excavator	No	40		80.7	450.0	0.0
Front End Loader	No	40		79.1	450.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Dozer	62.6	58.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	60.0	56.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.6	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Mission Bay Block Med Cntr
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2014
Case Description: UCSF Med Center

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Pennsylvania Ave	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	840.0	0.0
Excavator	No	40		80.7	840.0	0.0
Front End Loader	No	40		79.1	840.0	0.0

Results

Noise Limit Exceedance (dBA)											
	Calculated (dBA)		Day		Evening		Night		Day		Evening	Night
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	57.2	53.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	56.2	52.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	54.6	50.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.2	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Mission Bay Cancer
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/06/2014
Case Description: UCSF Cancer Outpatient

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Block 20	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	800.0	0.0
Excavator	No	40		80.7	800.0	0.0
Front End Loader	No	40		79.1	800.0	0.0

Results

Noise Limits (dBA)								Noise Limit Exceedance (dBA)			
Calculated (dBA)		Day		Evening		Night		Day		Evening	Night
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	56.6	52.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	55.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.6	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Existing

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	MB South	16th	1352	95	1284.4	3	40.56	2	27.04	35	56	35	56	35	56	65.4	60.1	65.1	68.9	40	64.6	36.5	119.8
3rd Street	Mariposa	20th	1219	95	1158.1	3	36.57	2	24.38	35	56	35	56	35	56	64.9	59.7	64.6	68.4	40	64.2	32.9	108.0
3rd Street	MB South	Channel	1447	95	1374.7	3	43.41	2	28.94	35	56	35	56	35	56	65.7	60.4	65.4	69.2	40	64.9	39.1	128.3
MB South	3rd	6th	50	97	48.5	2	1	1	0.5	25	40	25	40	25	40	47.0	41.8	46.4	50.3	40	46.1	0.5	1.7

Assumptions: AM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	MB South	16th	1508	95	1432.6	3	45.24	2	30.16	35	56	35	56	35	56	65.9	60.6	65.5	69.3	40	65.1	40.7	133.7
3rd Street	Mariposa	20th	1348	95	1280.6	3	40.44	2	26.96	35	56	35	56	35	56	65.4	60.1	65.1	68.9	40	64.6	36.4	119.5
3rd Street	MB South	Channel	1612	95	1531.4	3	48.36	2	32.24	35	56	35	56	35	56	66.2	60.9	65.8	69.6	40	65.4	43.5	142.9
MB South	3rd	6th	59	97	57.23	2	1.18	1	0.59	25	40	25	40	25	40	47.7	42.5	47.1	51.1	40	46.8	0.6	2.0
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	MB South	16th	0	95	0	3	0	2	0	35	56	35	56	35	56	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
3rd Street	Mariposa	20th	0	95	0	3	0	2	0	35	56	35	56	35	56	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
3rd Street	MB South	Channel	0	95	0	3	0	2	0	35	56	35	56	35	56	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
MB South	3rd	6th	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
			0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
3rd Street	MB South	16th	2359	95	2241.1	3	70.77	2	47.18	35	56	35	56	35	56	67.8	62.5	67.5	71.3	40	67.0	63.7	209.1
3rd Street	Mariposa	20th	2090	95	1985.5	3	62.7	2	41.8	35	56	35	56	35	56	67.3	62.0	67.0	70.8	40	66.5	56.5	185.2
3rd Street	MB South	Channel	2273	95	2159.4	3	68.19	2	45.46	35	56	35	56	35	56	67.7	62.4	67.3	71.1	40	66.9	61.4	201.5
MB South	3rd	6th	164	97	159.08	2	3.28	1	1.64	25	40	25	40	25	40	52.1	46.9	51.5	55.5	40	51.2	1.7	5.5
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
				97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!

Assumptions: AM peak hour traffic data from Fehr & Peers

Existing

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT														
Divisader	Post	Sutter	1091	91	992.81	8	87.28	1	10.91	30	48	30	48	30	48	62.3	62.4	60.5	66.6	40	62.3	21.7	71.3
Divisader	Sutter	Bush	1013	91	921.83	8	81.04	1	10.13	30	48	30	48	30	48	62.0	62.1	60.2	66.3	40	62.0	20.2	66.2
Scott	Post	Sutter	483	97	468.51	2	9.66	1	4.83	25	40	25	40	25	40	56.8	51.6	56.2	60.2	40	55.9	5.0	16.3
Scott	Sutter	Bush	452	97	438.44	2	9.04	1	4.52	25	40	25	40	25	40	56.5	51.3	56.0	59.9	40	55.6	4.6	15.2
Bush	Divisdro	Scott	1903	91	1731.7	8	152.2	1	19.03	30	48	30	48	30	48	64.8	64.8	62.9	69.0	40	64.8	37.9	124.3
Sutter	Divisdro	Scott	281	91	255.71	8	22.48	1	2.81	25	40	25	40	25	40	54.2	55.3	53.9	59.3	40	55.0	4.0	13.1

Assumptions: AM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT														
Divisader	Post	Sutter	1162	91	1057.4	8	92.96	1	11.62	30	48	30	48	30	48	62.6	62.7	60.8	66.9	40	62.6	23.1	75.9
Divisader	Sutter	Bush	1103	91	1003.7	8	88.24	1	11.03	30	48	30	48	30	48	62.4	62.4	60.6	66.7	40	62.4	22.0	72.0
Scott	Post	Sutter	503	97	487.91	2	10.06	1	5.03	25	40	25	40	25	40	57.0	51.8	56.4	60.4	40	56.1	5.2	16.9
Scott	Sutter	Bush	463	97	449.11	2	9.26	1	4.63	25	40	25	40	25	40	56.6	51.4	56.1	60.0	40	55.7	4.8	15.6
Bush	Divisdro	Scott	1927	91	1753.6	8	154.2	1	19.27	30	48	30	48	30	48	64.8	64.9	63.0	69.1	40	64.8	38.4	125.8
Sutter	Divisdro	Scott	299	91	272.09	8	23.92	1	2.99	25	40	25	40	25	40	54.4	55.5	54.2	59.5	40	55.3	4.3	14.0

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT														
Divisader	Post	Sutter	0	91	0	8	0	1	0	30	48	30	48	30	48	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Divisader	Sutter	Bush	0	91	0	8	0	1	0	30	48	30	48	30	48	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Scott	Post	Sutter	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Scott	Sutter	Bush	0	97	0	2	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Bush	Divisdro	Scott	0	91	0	8	0	1	0	30	48	30	48	30	48	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Sutter	Divisdro	Scott	0	91	0	8	0	1	0	25	40	25	40	25	40	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak				Auto		MT		HT		Auto	k/h	MT	k/h	HT	k/h	Auto	MT	HT					
	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Divisader	Post	Sutter	1249	91	1136.6	8	99.92	1	12.49	30	48	30	48	30	48	62.9	63.0	61.1	67.2	40	62.9	24.9	81.6
Divisader	Sutter	Bush	1183	91	1076.5	8	94.64	1	11.83	30	48	30	48	30	48	62.7	62.7	60.9	67.0	40	62.7	23.5	77.3
Scott	Post	Sutter	636	97	616.92	2	12.72	1	6.36	25	40	25	40	25	40	58.0	52.8	57.4	61.4	40	57.1	6.5	21.4
Scott	Sutter	Bush	623	97	604.31	2	12.46	1	6.23	25	40	25	40	25	40	57.9	52.7	57.3	61.3	40	57.0	6.4	21.0
Bush	Divisdro	Scott	2320	91	2111.2	8	185.6	1	23.2	30	48	30	48	30	48	65.6	65.7	63.8	69.9	40	65.6	46.2	151.5
Sutter	Divisdro	Scott	320	91	291.2	8	25.6	1	3.2	25	40	25	40	25	40	54.7	55.8	54.5	59.8	40	55.6	4.6	14.9

Assumptions: AM peak hour traffic data from Fehr & Peers

METROSONICS db-308 SN 2490 V2.3 3/87

CURRENT DATE: 3/05/14
CURRENT TIME: 8:35:00

Short term noise monitoring

UCSF Mount Zion and Parnassus

_____

_____

CALIBRATED: 3/04/14 @ 16:19:42

DISPLAY RANGE: 41.7dB TO 137.7dB

DOUBLING RATE: 3 dB

FILTER: A WGHT

RESPONSE: SLOW

SCHEDULED RUN: OFF

   START DATE: 1/28/14
   START TIME:14:00:00
   LENGTH: 24:00:00

** OVERALL REPORT **

TEST STARTING DATE: 3/04/14
TEST STARTING TIME: 16:25:23
TEST LENGTH: 0DAYS 0:40:58

Lav   = 63.3dB
Lav 80= 41.7dB
Lav 90= 41.7dB
SEL   = 97.1dB

Lmax = 79.1dB ON 3/04/14 @ 17:08:49

Lpk < 116dB

TIME OVER 115dB 0D 0:00:00.00

DOSE CRITERION: 90dB

8 HR DOSE (80dB CUTOFF)= 0.00%
8 HR PROJ. DOSE (80dB CUTOFF)= 0.00%
8 HR DOSE (90dB CUTOFF)= 0.00%
8 HR PROJ. DOSE (90dB CUTOFF)= 0.00%

** TIME HISTORY REPORT **

MODE: CONTINUOUS
PERIOD LENGTH: 0:10:00
TIME HISTORY CUTOFF: NONE
Ln(1): 10.0% Ln(2): 90.0%

INT# TAG#	START TIME	Lav ET	Lmax L1	Lpk L2	
1 0	3/04/14 16:25:23	66.4 0:10:00	78.1 69	<116 61	Mount Zion -Scott and Sutter * +
2 0	3/04/14 16:35:23	62.1 PARTIAL	62.6 62	<116 61	*+
3 0	3/04/14 16:54:02	59.1 0:10:00	72.5 62	<116 50	Parnassus - Kirkham west of 5th * +
4 0	3/04/14 17:04:02	59.3 PARTIAL	67.0 63	<116 52	* +
5 0	3/04/14 17:08:15	63.2 0:10:00	79.1 65	<116 55	Parnassus - 5th south of Judah * +
6 0	3/04/14 17:18:15	57.7 PARTIAL	60.1 60	<116 56	* +
7 0	3/04/14 17:25:27	61.2 0:10:00	74.7 63	<116 57	Parnassus - Hillway north of Parnassus * +

```
    8  3/04/14   64.8    71.9 <116                          *       +
    0 17:35:27  PARTIAL  67     61
```

** AMPLITUDE DISTRIBUTION REPORT **

TOTAL SAMPLES = 19665

dB	SAMPLES		% OF TOTAL
45	21	+	.10
46	64	+	.32
47	79	+	.40
48	167	*	.84
49	161	*	.81
50	241	*	1.22
51	295	**	1.50
52	441	**	2.24
53	402	**	2.04
54	494	***	2.51
55	649	***	3.30
56	1037	*****	5.27
57	1565	********	7.95
58	1817	*********	9.23
59	1735	*********	8.82
60	1483	********	7.54
61	1932	**********	9.82
62	1735	*********	8.82
63	1535	********	7.80
64	1217	******	6.18
65	604	***	3.07
66	496	***	2.52
67	408	**	2.07
68	279	*	1.41
69	184	*	.93
70	165	*	.83
71	141	*	.71
72	119	*	.60
73	41	+	.20
74	60	+	.30
75	41	+	.20
76	26	+	.13
77	18	.	.09
78	12	.	.06

79 1 .00

Ln(0.0) = 79dB
Ln(10.0) = 66dB
Ln(50.0) = 60dB
Ln(99.9) = 45dB

	NO CUTOFF	80.0dB CUTOFF	90.0dB CUTOFF
Ldod	62.0dB	41.0dB	41.0dB
Losha	61.6dB	41.0dB	41.0dB
Leq(6)	61.2dB	41.0dB	41.0dB

Existing

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
14th	Folsom	Harrison	341	95	323.95	3	10.23	2	6.82	30	48	30	48	30	48	57.5	53.1	58.5	61.7	40	57.4	7.0	22.8
15th	Folsom Ha	Harrison	219	95	208.05	3	6.57	2	4.38	30	48	30	48	30	48	55.6	51.2	56.5	59.7	40	55.5	4.5	14.7
Folsom	14th	15th	935	95	888.25	3	28.05	2	18.7	30	48	30	48	30	48	61.9	57.5	62.8	66.0	40	61.8	19.1	62.6
Harrison	14th	15th	728	95	691.6	3	21.84	2	14.56	30	48	30	48	30	48	60.8	56.4	61.8	65.0	40	60.7	14.9	48.7

Assumptions: AM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
14th	Folsom	Harrison	364	95	345.8	3	10.92	2	7.28	30	48	30	48	30	48	57.8	53.4	58.7	61.9	40	57.7	7.4	24.4
15th	Folsom Ha	Harrison	220	95	209	3	6.6	2	4.4	30	48	30	48	30	48	55.6	51.2	56.6	59.8	40	55.5	4.5	14.7
Folsom	14th	15th	938	95	891.1	3	28.14	2	18.76	30	48	30	48	30	48	61.9	57.5	62.9	66.1	40	61.8	19.1	62.8
Harrison	14th	15th	792	95	752.4	3	23.76	2	15.84	30	48	30	48	30	48	61.1	56.7	62.1	65.3	40	61.1	16.2	53.0

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
14th	Folsom	Harrison	0	95	0	3	0	2	0	30	48	30	48	30	48	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
15th	Folsom Ha	Harrison	0	95	0	3	0	2	0	30	48	30	48	30	48	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Folsom	14th	15th	0	95	0	3	0	2	0	30	48	30	48	30	48	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!
Harrison	14th	15th	0	95	0	3	0	2	0	30	48	30	48	30	48	#NUM!	#NUM!	#NUM!	#NUM!	40	#NUM!	#NUM!	#NUM!

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
14th	Folsom	Harrison	407	95	386.65	3	12.21	2	8.14	30	48	30	48	30	48	58.3	53.9	59.2	62.4	40	58.2	8.3	27.2
15th	Folsom Ha	Harrison	239	95	227.05	3	7.17	2	4.78	30	48	30	48	30	48	55.9	51.5	56.9	60.1	40	55.9	4.9	16.0
Folsom	14th	15th	1018	95	967.1	3	30.54	2	20.36	30	48	30	48	30	48	62.2	57.8	63.2	66.4	40	62.2	20.8	68.1
Harrison	14th	15th	907	95	861.65	3	27.21	2	18.14	30	48	30	48	30	48	61.7	57.3	62.7	65.9	40	61.7	18.5	60.7

Assumptions: AM peak hour traffic data from Fehr & Peers

Mission Center
Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2014
Case Description: UCSF Mission Center

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Fosom Street	Residential	65.0	65.0	65.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	300.0	5.0
Excavator	No	40		80.7	300.0	5.0
Front End Loader	No	40		79.1	300.0	5.0

Results

Equipment	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	N/A	N/A	N/A	N/A	N/A	N/A	61.1	57.1	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	N/A	N/A	N/A	N/A	N/A	N/A	60.1	56.2	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	N/A	N/A	N/A	N/A	N/A	N/A	58.5	54.6	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A	61.1	60.8	N/A	N/A	N/A	N/A	N/A	N/A

APPENDIX G

Transportation Impact Study for the UCSF Long Range Development Plan

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DRAFT

UCSF
University of California
San Francisco

AUGUST 2014

UCSF 2014 LONG RANGE DEVELOPMENT PLAN

Transportation Impact Study

FEHR & PEERS

Adavant Consulting

Transportation Impact Study for the UCSF Long Range Development Plan – Draft Four

Prepared for:

University of California, San Francisco
Campus Planning

Prepared by:

FEHR & PEERS

and

Advant Consulting

August 2014

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1 INTRODUCTION

The University of California, San Francisco (UCSF) is one of ten campuses in the University of California (UC) system, and is the only UC campus devoted solely to the health sciences. UCSF's mission is to advance health worldwide through innovative health sciences education, research and patient care. UCSF is a multi-site campus with locations throughout the City and County of San Francisco and some locations beyond the City limits, encompassing approximately 8.04[1] million gross square feet (gsf) in owned and leased buildings. Its major academic and clinical sites are at Parnassus Heights, Mission Bay, Mission Center, and Mount Zion, with a major presence at the City's San Francisco General Hospital (SFGH) site.

This report examines the existing transportation conditions of the Parnassus Heights, Mission Bay, Mount Zion, and Mission Center campus sites and analyzes the transportation impacts of the changes proposed in the UCSF 2014 Long Range Development Plan (LRDP), which will guide campus development through the LRDP horizon year of 2035. The proposed project at the SFGH campus site is presented separately in a stand-alone transportation impact study specifically for that site. UCSF is currently reviewing its use of the Laurel Heights campus site and no changes are currently proposed as part of the LRDP; therefore, it is not included in this transportation analysis. The LRDP projects a total of 11.56 gsf at the horizon year of 2035, which does not include the Medical Center Phase Two (793,500 gsf) which is assumed to occur after the LRDP horizon year of 2035. For the purposes of both the environmental and transportation impact analysis, it is assumed that the Medical Center Phase Two would be operational by the LRDP horizon year. If all projects in the LRDP are implemented across all sites, total UCSF owned and leased space across all UCSF sites would be about 12.36 million gsf by 2035.

This transportation impact analysis evaluates the LRDP's potential impacts on traffic conditions, transit service, bicycle conditions, pedestrian conditions, loading operations, emergency access, construction activities, and parking conditions. This chapter summarizes the project study areas for the four UCSF campus sites included in this study, proposed changes for the four UCSF campus sites, and outlines the report structure. A detailed description of the scope of work is provided in **Appendix A**.

1.1 PROJECT SITES

Figure 1-1 shows the main locations of UCSF owned and leased sites in San Francisco. The transportation study areas for each campus site included in this study, in descending order of the daily average population, are presented below and shown on **Figure 1-2**.

1.1.1 Parnassus Heights

The Parnassus Heights campus site, the oldest and largest of the primary UCSF campus sites, straddles Parnassus Avenue, between the Inner Sunset and Cole Valley neighborhoods, extending between Fifth Avenue and Medical Center Way, and north to Irving and Carl Streets between Third and Hillway Avenues. The campus site is comprised of approximately 107 acres of varying elevations and built characteristics,

[1] The 8.04 million gsf total does not include the 1.13million gsf Phase One Medical Center at Mission Bay that is currently under construction.

due to the campus site being partially built into a hillside and including the Mount Sutro Open Space Preserve.

1.1.2 Mission Bay

The Mission Bay campus site is generally bounded by Mission Bay Boulevard South to the north, Owens Street to the west, Mariposa Street to the south, and Third Street to the east. The campus site is comprised of approximately 56 acres in the rapidly changing Mission Bay neighborhood north of the Potrero Hill and Dogpatch neighborhoods.

1.1.3 Mount Zion

The Mount Zion campus site is comprised of parts of six contiguous city blocks in the Western Addition neighborhood of San Francisco; generally bounded by Bush Street to the north, Scott Street to the east, Post Street to the south, and Broderick Street to the west. The campus site is comprised of approximately 8 acres of similar land use types.

1.1.4 Mission Center

The Mission Center campus site is located in the northeast portion of the Mission District. The campus site of approximately three acres is located on the southern half of the block bounded by 14th Street, Harrison Street, 15th Street, and Folsom Street.

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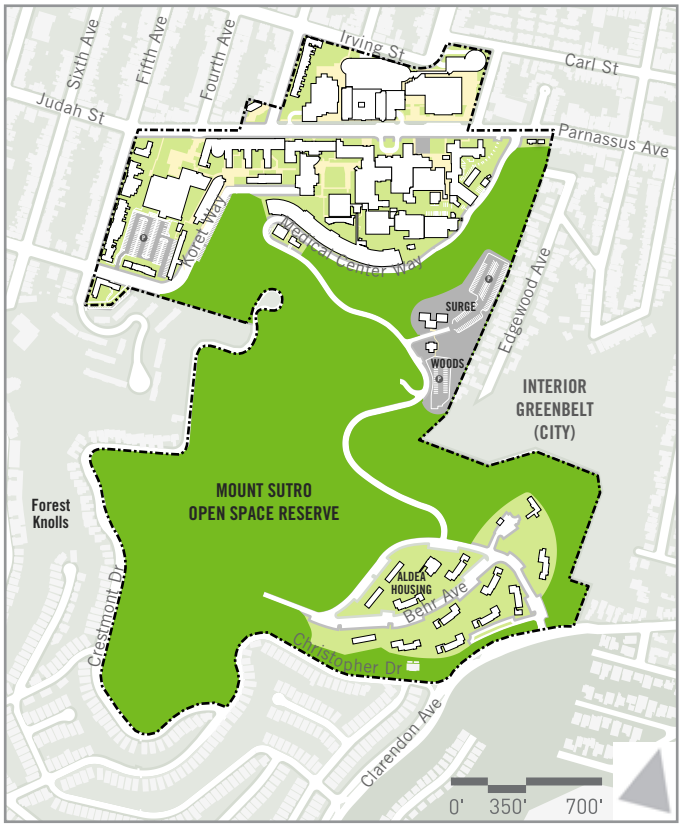
Figure 1-1

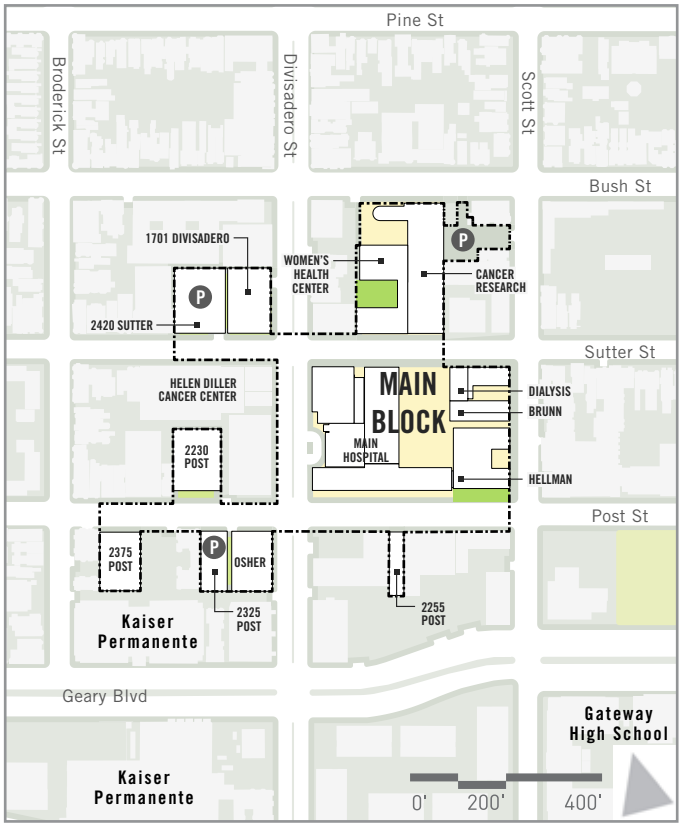
UCSF Campus Site Locations

PARNASSUS HEIGHTS

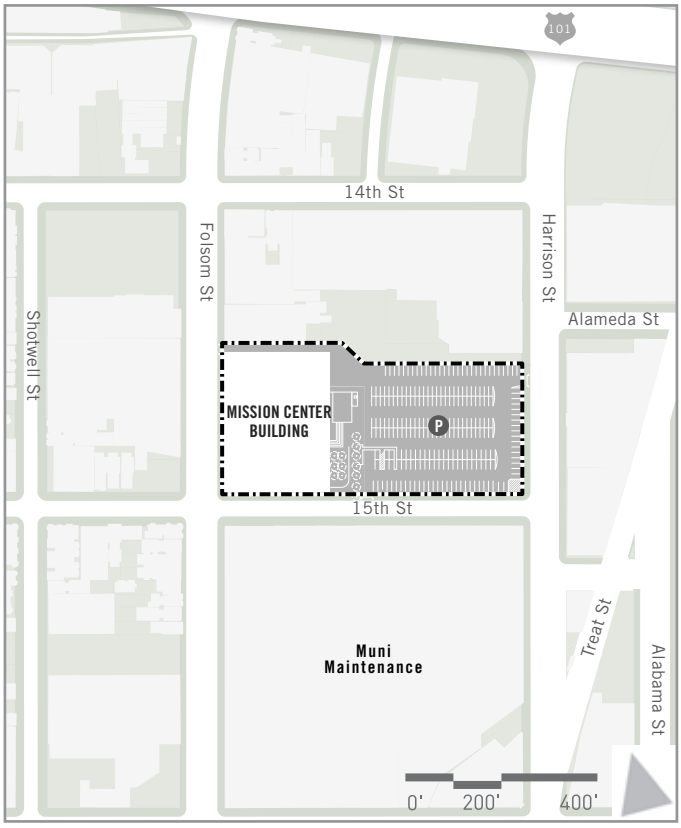


MISSION BAY

MOUNT ZION



MISSION CENTER



Open space/park Parking Campus site boundary Under construction

Figure 1-2

Study Campus Sites

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1.2 PROJECT DESCRIPTION

The LRDP planning horizon projects 2.39 million gross square feet (gsf[2]) of new space in addition to the 1.13 million gsf of building space currently under construction in Mission Bay. The following section describes the proposed changes for the four UCSF campus sites included in this study under the LRDP.

1.2.1 Parnassus Heights

Over its 20-year planning horizon, the LRDP proposes additional housing by converting UC Hall and the Millberry Union towers to housing as well as several other projects which would construct new housing; to provide more surface parking by demolishing several buildings; to construct a New Hospital Addition to Long Hospital by demolishing Langley Porter Psychiatric Institute (LPPI) and its support buildings; to renovate and reuse Moffitt Hospital for non-acute care; to reclassify a few existing buildings as support or structured parking; to demolish a few existing buildings and convert part of their footprint to parking; to construct new trails in the Mount Sutro Open Space Reserve ("Reserve"); and to implement the Parnassus Avenue Streetscape Plan.

Figure 1-3 illustrates the existing campus site. **Figure 1-4** illustrates the proposed site plan for the Parnassus Heights campus site. As part of the LRDP, UCSF is proposing the following:

- Demolish Laboratory of Radiobiology, Medical Research 4, Koret Vision Research, LPPI and support buildings, Proctor, Surge, Woods, Environmental Health and Safety buildings over the course of the LRDP, totaling approximately 214,600 gsf, and convert the space to including, but not limited to, a New Hospital Addition, housing, office space, etc.
- Construct a New Hospital Addition building on the demolished Langley Porter Psychiatric Institute (LPPI) site, which would contain 140 beds in approximately 308,000 gsf. The addition would be seven-stories high and set back from Parnassus Avenue with a landscaped strip to provide passenger drop-off/pick-up, parking, and loading zones.
- Seismically retrofit, renovate and reuse UC Hall (approximately 148,300 gsf). The seven-story building is located on the west end of the campus site on Parnassus Avenue. The Plan would occur in two phases. The first phase would renovate three floors of UC Hall to faculty offices and convert other floors to residential use. Upon the completion of the New Hospital Addition (see above), the three floors of faculty offices would move into Moffitt Hospital and those vacated floors would also be converted to residential use. The final residential use would total approximately 210 beds and 170 units.
- Convert Millberry Union towers from office to residential use (approximately 83 beds and 83 units). The existing occupants would be relocated into the vacated Moffitt building after the completion of the New Hospital Addition. The towers would return to its original use for student housing.

[2] Gross square footage is a UC facilities term denoting the sum of all floor areas, finished and unfinished, on all floors of an enclosed structure. It excludes spaces such as attics without flooring, mezzanines, exterior courts, and balconies.

- Renovate and reuse Moffitt Hospital for non-acute care uses.
- Potentially add limited amounts of new housing or open space on the sites of 735 Parnassus near Fifth and Parnassus avenues and the Proctor site near Fifth Avenue and Kirkham Street, respectively.
- Complete the conversion of the Fifth Avenue houses to faculty housing.
- Seismically retroft the Faculty Alumni House at 745 Parnassus Avenue to meet seismic standards.
- Transportation improvements that include providing traffic calming and pedestrian safety measures, providing additional off-street contractor parking, and improving the efficiency of existing off-street loading:
    - **Reduce UCSF traffic by enhancing Transportation Demand Management (TDM) programs.** Traffic on streets in and around the campus site is an ongoing issue with neighbors. UCSF has a comprehensive TDM program to minimize commuting by private vehicle and limits parking on the campus site. UCSF intends to make further efforts to reduce commute traffic by enhancing the City CarShare and UCSF's own carpool programs, expanding bicycle parking and access to showers and lockers, and promoting ridesharing participation.
    - **Implement the *Parnassus Avenue Streetscape Plan*.** As UCSF renovates the Clinical Sciences and UC Hall buildings, and possibly build new faculty housing near Fifth and Parnassus avenues, UCSF proposes to begin implementing the *Parnassus Avenue Streetscape Plan*. This plan calls for improvements that make crossing the street safer and more convenient for pedestrians, reorganize and improve transit and UCSF shuttle operations, create more usable outdoor space, and enhance the public realm as called for in the *Physical Design Framework*. Improvements may include new paving, street furniture, lighting, and street trees, as well as sidewalk and crosswalk widening and better defined campus gateways. The streetscape plan also proposes to modify the existing UCSF shuttle stops from the gateways of the campus site to a central location fronting the campus library in the westbound direction and the Clinical Sciences building in the eastbound direction. The improvements are intended to occur in phases starting on the south side of Parnassus Avenue, at the west end at Fifth Avenue, and moving through the core of the campus site and along the front of the New Hospital Addition, finishing at Medical Center Way.
    - **Reduce congestion on Parnassus Avenue through transportation, parking, and loading improvements.** Another community concern is congestion on Parnassus Avenue where there are six Muni bus stops, two primary and two secondary UCSF shuttle stops, several garage entrances and exits, and six crosswalks. Despite numerous parking and loading spaces on the street, the overall demand for both exceeds the supply, and double parking and trucks parking in the middle of the street are common occurrences. To reduce congestion on Parnassus Avenue, UCSF proposes to develop more off-street loading and parking. UCSF proposes to provide additional off-street contractor parking spaces and increase parking enforcement to reduce competition for street parking. Most of the new parking on Koret Way will be designated for contractors, which generate less traffic throughout the day than patient

and visitor parking. In order to improve loading and delivery operations, UCSF proposes to implement a cross-docking model where vendors deliver goods to Oyster Point and goods are consolidated onto UCSF vehicles for delivery to the campus site, limiting the number of individual deliveries to this and other campus sites. UCSF also proposes to reconfigure the existing Central Receiving area, station a dockmaster, and implement a scheduling system to restrict on-site delivery times and vehicle sizes. These loading and delivery improvements are intended to reduce campus congestion, creating a more safe, attractive, and efficient campus.

- **Reduce delivery impacts on Fifth Avenue and facilitate and fund traffic calming at the Fifth and Kirkham intersection.** Some delivery trucks must pass through the Kirkham Street and Fifth Avenue intersection in order to access the loading docks on Koret Way at the back of the developed portion of the campus site. UCSF has begun working with neighbors and the City to install traffic-calming measures and pedestrian safety improvements at this intersection, and intends to minimize future truck traffic on this street by creating more loading capacity on the east and north sides of the campus site, imposing vendor restrictions, and pursuing centralized receiving off-site.
- **Minimize the impacts of the shuttle system as it grows.** UCSF shuttle system operations would expand as demand grows. Most Most Parnassus Heights neighbors prefer smaller shuttles on their streets even if they run at greater frequencies, because larger shuttles generate more noise and vibration. UCSF Transportation Services will need to consider further operational adjustments to the shuttle system as other campus sites like Mission Bay grow. Operational adjustments would be implemented by UCSF Transportation Services to address deficiencies in service as and when observed through the monthly auditing process (see Section 1.2.5.)
- **Implementation of Green Connections Plan.** In March 2014, the City and County of San Francisco completed its Green Connections plan. The plan aims to increase access to parks, open spaces, and the waterfront by building a network of 'green connectors' – city streets that will be upgraded incrementally over the next 20 years to make it safer and more pleasant to travel to open space by walking, biking, and other forms of active transportation. Two Green Connections routes converge near the UCSF Parnassus Heights campus. These routes link surrounding neighborhoods to the Mount Sutro open space area.

Figure 1-3

Parnassus Heights Existing Site Plan

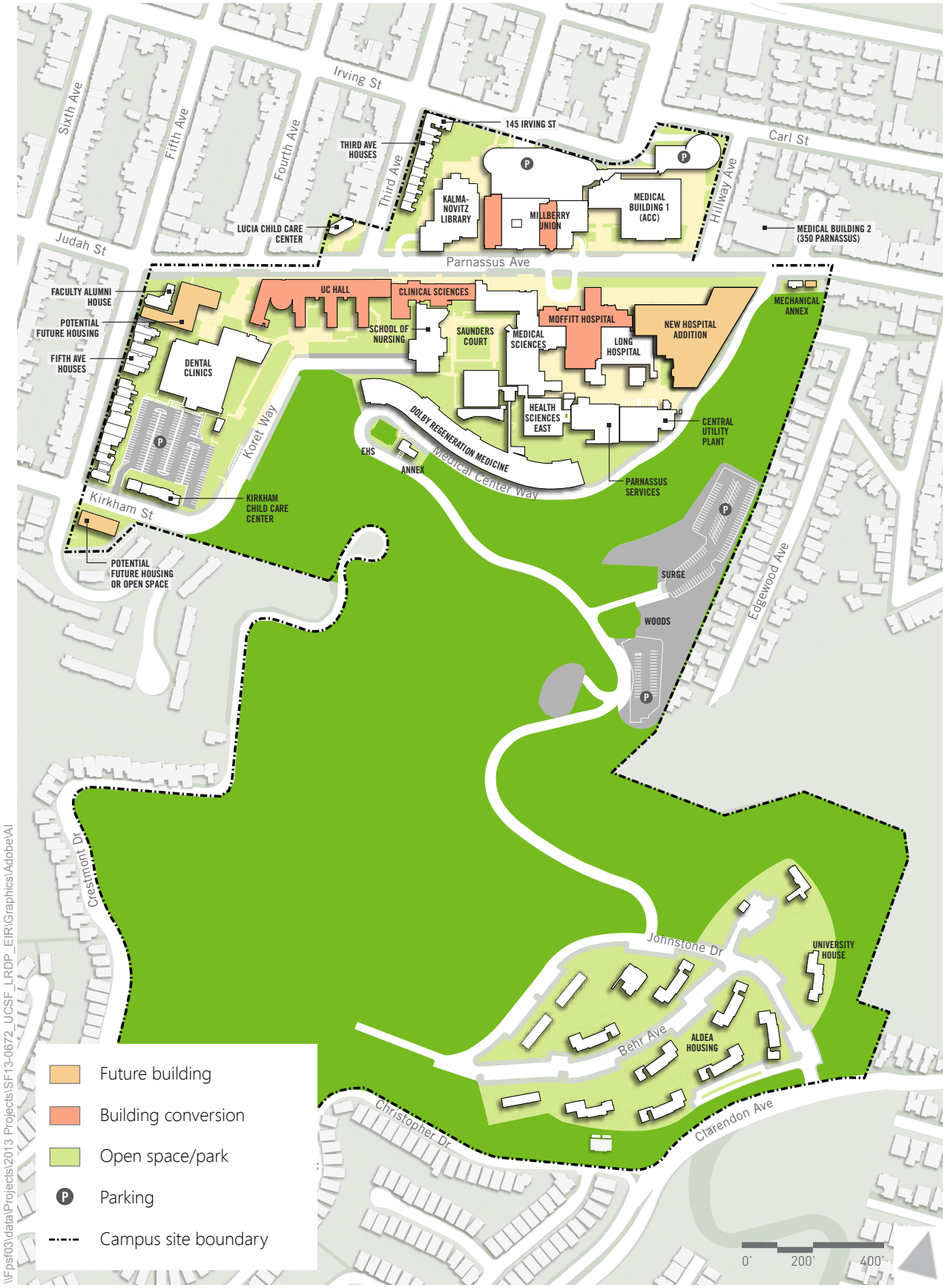


Figure 1-4

Parnassus Heights Proposed Site Plan

1.2.2 Mission Bay

The Mission Bay campus site is expected to grow substantially over the course of the LRDP. Currently there are over 3,900 UCSF faculty and staff employed at the site and 900 residents. The current employment and residents are expected to grow to 13,500 faculty and staff and 1,900 residents through the LRDP horizon year. Currently, the Women's, Cancer, and Children's hospitals and Mission Hall, totaling 1.13 million gsf is under construction and scheduled for completion in 2015. It is assumed that the 124,500 gsf cancer outpatient building would be constructed around 2020. For the purposes of the EIR and Transportation analysis, the Medical Center Phase Two is assumed to be constructed by 2035, adding 793,500 gsf. Approximately 1.45 million gsf of new space[3], north of 16th Street, is proposed under the LRDP. **Figure 1-5** illustrates the existing campus site. **Figure 1-6** shows the proposed development on each block at the Mission Bay campus site. As part of the LRDP, UCSF is proposing the following:

- Develop Blocks 15, 16, 18A, 23A, and 25A on the campus site, totaling up to 1,544,100 gsf. Development comprised of housing, child care, UCSF police building, research buildings, office buildings, clinics, retail, open space, and a parking structure. The proposed gsf of development per block is estimated below.
  - **Block 15**: 418,200 gsf – Develop Block 15 for housing, open space, and possibly child care and police services. If Child care services are constructed elsewhere, the portion dedicated to Child care will be used for housing. The open space will serve the surrounding housing community and potential Child care outdoor area.
  - **Block 16**: 289,000 – 377,400 gsf – Develop Block 16 with two research buildings or a research building and central utility plant. The research buildings would house offices and clinics. If two research buildings are constructed, open space would be developed in between the buildings as a courtyard. If the alternate utility plant is constructed, a portion of the courtyard may be used for Facilities Services.
  - **Block 18A/B**: 193,000 gsf – Develop a research building containing offices and clinics, parking structure with up to 1,540 parking spaces and includes UCSF shuttle spaces, and sports field.
  - **Block 23A**: 232,200 gsf – Develop a research building containing offices, clinics, retail uses, and potential Child care and police services; and construct an open space courtyard between the existing garage and proposed research building.
  - **Block 25A**: 323,300 gsf – Develop a research building containing offices, clinics, and retail uses.
- Complete Phase 1 of the Medical Center by developing the cancer outpatient building, about 124,500 gsf.

[3] Of the 1.54 million gsf of new space, 464,600 gsf is existing remaining entitlement and 991,800 gsf is new entitlement sought under the LRDP.

- Develop Block 14 pending San Francisco Unified School District (SFUSD) decision to continue reservation of the existing block. Site development and environmental review will be further determined upon SFUSD decision.
- Acquire property adjacent to Mission Bay in order to consolidate owned and leased properties.
    - **Develop Blocks 33 and 34** (East Campus) with up to 500,000 gsf and 500 parking spaces for research and parking use.
- Transportation Related Projects:
    - **Complete the street network** including Nelson Rising Lane, between Owens Street to the Sandler Neurosciences Center, and Fifth and Sixth streets, between Nelson Rising Lane and Mission Bay Boulevard South. Complete Fourth Street with the completion of Phase One Medical Center at Mission Bay.
    - **Relocate UCSF Shuttle stops** to provide more direct access to other campus sites and better serve persons who live and work by new buildings. Adjustments to shuttle stops would be implemented by UCSF Transportation Services to address deficiencies in service as and when observed through the monthly auditing process (see Section 1.2.5).
    - **Increase the bicycle and motorcycle parking capacity** through UCSF's TDM program as new buildings are constructed and near open spaces areas. This includes a planned Bay Area Bike Share station on Fourth Street that will be funded by UCSF.

1.2.2.1 LRDP Variant

UCSF is considering the development of clinical uses for a portion of the 500,000 gsf on the Block 33 and 34 site. The amount of clinical space that may be developed has not yet been determined, but up to about 250,000 gsf of clinical space could be developed, with the remainder 250,000 gsf as research/office use. Clinical uses are a "secondary use" under the Mission Bay South Plan and would require a finding of consistency with the Plan by the San Francisco Office of Community Investment and Infrastructure. These variants are referred to as the LRDP Variant for the remainder of this report.

Figure 1-5

Mission Bay Existing Site Plan

Figure 1-6

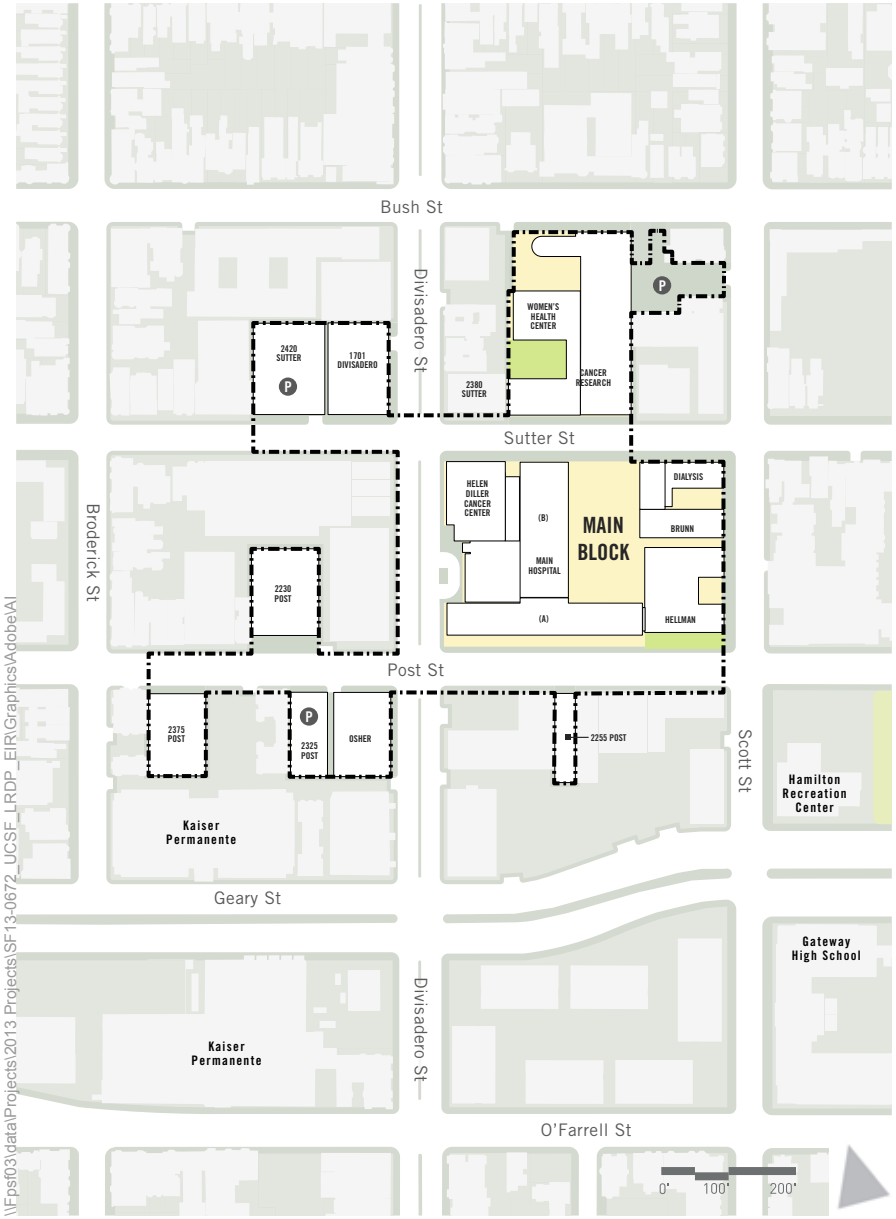
Mission Bay Proposed Site Plan

1.2.3 Mount Zion

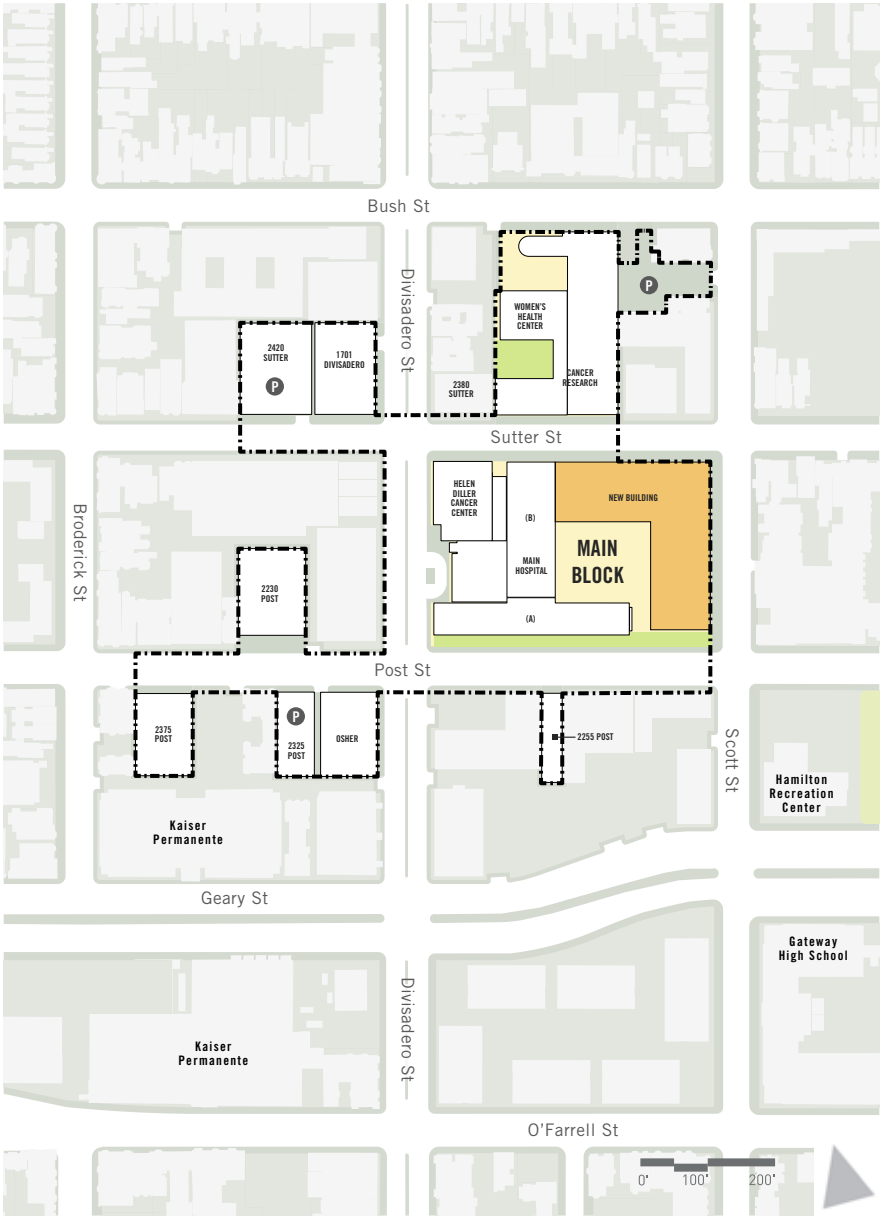
The LRDP proposes to demolish and re-develop three buildings totaling approximately 85,000 gsf, resulting in a net increase of about 172,000 gsf at the Mount Zion campus site. It is expected that with the opening of the Phase One Medical Center at Mission Bay in 2015, inpatient uses in the existing hospital would move from Mount Zion to Mission Bay. The available space from relocating programs to the Mission Bay campus site would be taken by programs relocated from the Parnassus Heights campus site and potentially other campus sites. **Figure 1-7** illustrates the existing and proposed development at the Mount Zion campus site. As part of the LRDP, UCSF is proposing to make the following changes:

- Renovate and reuse the existing hospital. UCSF plans to relocate the inpatient facilities to Phase One of the the Medical Center at Mission Bay. UCSF would then repurpose the hospital as an ambulatory care center with ambulatory surgery, growth of the cancer program, and expansion of outpatient use and support space. The decommissioned hospital may also accommodate program space and clinics displaced from the three buildings proposed for demolition.
- Demolish the Hellman, Harold Brunn Institute, and the Dialysis Center buildings and construct new medical office and/or research building(s) and additional parking. Occupants and programs in the existing buildings would be relocated to the repurposed hospital or located elsewhere. The proposed construction would take place at the demolished buildings. Additional parking may be constructed in two levels below the new buildings or developed/acquired off-site if constructing below ground is cost-prohibitive.
- Demolish or retrofit the seismically compromised 2255 Post Street building.
- Develop open space on the main block when the new building(s) are constructed.
- Coordinate with the City to improve adjacent streetscape when new building space is developed. Improvements include a wider sidewalk, planting street trees, additional passenger loading spaces, and parallel parking along the west side of Scott Street, and extended landscape along Post Street.

EXISTING SITE PLAN



PROPOSED SITE PLAN



Open space/park Parking Campus site boundary Future building

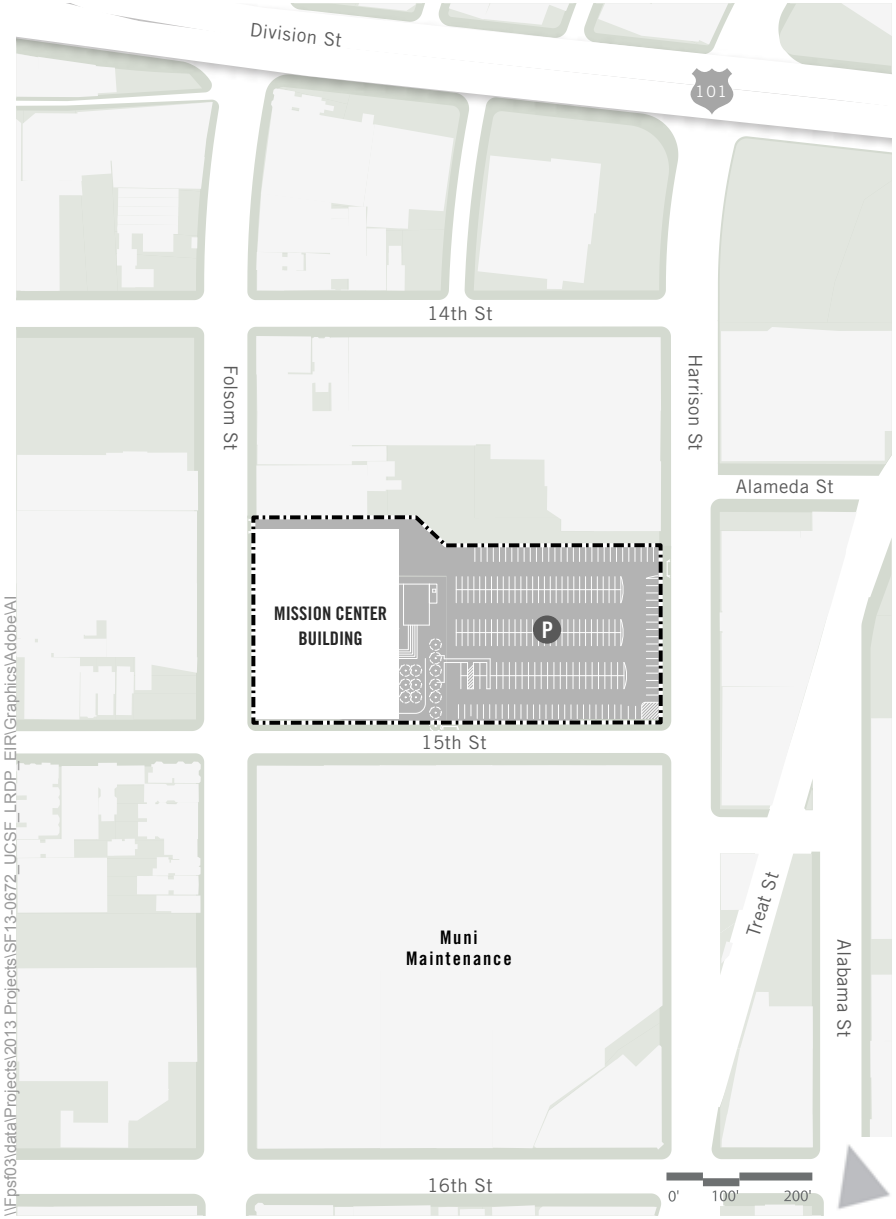
Figure 1-7

Mount Zion Existing and Proposed Site Plan

1.2.4 Mission Center

The Mission Center campus site is comprised of a single building that contains approximately 850 employees. **Error! Not a valid bookmark self-reference.** illustrates the existing and proposed development at the Mission Center campus site. The LRDP proposes to construct a new building and parking structure. The new building would be approximately four stories with up to 100,000 gsf. To support this space, a five story, 95,600 gsf garage with up to 294 parking spaces would be built between the existing and new buildings. Development of this new building would occur only if additional program space is determined to be needed in the future, and if and when funding becomes available.

EXISTING SITE PLAN



PROPOSED SITE PLAN

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Open space/park P Parking Campus site boundary Future building

Figure 1-8

Mission Center Existing and Proposed Site Plan

1.2.5 UCSF Transportation Demand Management

UCSF currently manages a robust campus-wide Transportation Demand Management (TDM) program with the goal of reducing single-occupant vehicle (SOV) trips to all campus sites. The details of this program are presented in Section 2.2. UCSF proposes expanded TDM strategies that were developed as part of an internal planning process to identify feasible TDM measures that could reasonably result in a reduction in UCSF-generated SOV trips. In order to accomplish these goals, UCSF would implement some or all of the following in the 2014 LRDP:

- Expand UCSF Vanpool Program (add new vanpools and subsidize costs to attract new riders);
- Develop more robust UCSF Carpool Matching and convert additional parking spaces to carpool only;
- Enhance existing City CarShare pods on campus sites and participate in the city's new Medical Center Rideshare program;
- Increase supply and access to bicycle parking and showers/lockers;
- Enhance shuttle system with Wifi and Next Bus;
- Limit parking for non-faculty tenants in new housing;
- Gradually increase cost of employee parking, over time; and
- Promote flexible work schedules, as possible.

1.2.6 UCSF LRDP Transportation Monitoring

As a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP, would continue to do so in particular at the four UCSF campus sites where development is proposed. As the campus sites develop, UCSF would monitor vehicle traffic conditions, transit operations, shuttle ridership, adequacy of pedestrian and bicycle facilities, and loading and parking conditions within and surrounding the campus sites. This monitoring program would be informed by the annual UCSF Employee Transportation Survey, the existing UCSF shuttle program monitoring[4], UCSF staff, students, and patients and visitors, campus site observations by Transportation Services staff, and ongoing coordination with SFMTA staff.

The results of the various monitoring efforts would be used to inform when and whether UCSF would implement additional TDM strategies that seek to minimize the number of single occupancy vehicle trips (SOV) generated by the LRDP. The additional TDM strategies target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods. Should the need for additional shuttle service

[4] UCSF monitors its shuttle ridership demand by conducting monthly audits to capture boarding data, and the data is used to continually adjust shuttle operations to meet peak ridership demand. The monthly audits are conducted for one entire week (five business days) on all routes, throughout the entire day. In addition, UCSF conducts an annual UCSF Transportation Survey that is distributed to all members of our community. The data is used to measure and benchmark the efficacy of the existing TDM programs, and assist in designing new programs.

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be triggered by increased ridership due to shifts in travel mode or demand generated by the LRDP, UCSF Transportation Services would first review that the additional service would not negatively affect Muni operations. Once implemented, the additional service would be monitored to the same standard as that identified above.

UCSF would also monitor pedestrian and bicycle conditions to ensure increased volumes generated by the LRDP do not cause overcrowding of sidewalks, crosswalks, bicycle routes, or bicycle parking locations within and adjacent to the campus sites. Finally, as the campus sites and surrounding neighborhoods develop in the future, UCSF would continue to monitor parking and loading conditions to ensure they are sufficient to accommodate the LRDP loading and parking demand and do not create potentially hazardous conditions or introduce delays to transit or traffic.

1.3 REPORT ORGANIZATION

The remainder of this report is divided into the following chapters:

Chapter 2 – Existing Conditions describes the operating conditions of the existing transportation network within the vicinity of the Parnassus Heights, Mission Bay, Mount Zion, and Mission Center campus sites. It includes the surrounding roadway network, intersection operating conditions, transit network and service, pedestrian and bicycle conditions, and loading and parking supply and occupancy.

Chapter 3 – Travel Demand Analysis includes the LRDP's trip generation, trip distribution, mode split, and trip assignment forecasts for private vehicles, as well as taxi, shuttle bus, transit, bicycle, pedestrian, and loading travel demand. The LRDP's trip generation was developed based on population characteristics information provided by UCSF staff and outlined in **Appendix F**.

Chapter 4 – Transportation Impact Analysis describes the anticipated operating conditions of the transportation network with the completion of the LRDP and identifies the extent to which LRDP-generated traffic would impact the transportation network. Chapter 4 discusses the transportation network under the following scenario:

> Existing Plus LRDP conditions describes the anticipated operating conditions of the transportation network under Existing conditions plus the proposed changes for the four UCSF campus sites included in this study. Operations of the transportation network after the addition of the travel demand from the project are described, including the project's impacts on study intersections, transit, bicycles, pedestrians, loading, parking, emergency vehicles, and the potential impacts of the project construction on the transportation network.

Chapter 5 – Future Year Conditions describes the anticipated operating conditions of the transportation network with the completion of the LRDP under Interim (Year 2015) and Cumulative (Year 2040) conditions and identifies the extent to which LRDP-generated traffic would impact the transportation network. Chapter 5 discusses the transportation network under the following two scenarios:

> Year 2015 conditions describe the anticipated operating conditions of the transportation network once Phase One Medical Center at Mission Bay is operational. Year 2015 conditions were developed for the Mission Bay campus site only.

Year 2040 conditions describes the anticipated operating conditions of the transportation network in Cumulative conditions with traffic associated with the LRDP and other reasonably foreseeable development projects. Future year traffic forecasts with the LRDP were estimated using the San Francisco County Transportation Authority's travel demand model, SF-CHAMP. The LRDP's contribution to future traffic growth and transit ridership in the area is described. For the Mission Bay campus site, a qualitative analysis of the Golden State Warriors proposed uses on Blocks 29-32 is included.

Chapter 6 – Transportation Mitigation and Improvement Measures describes the proposed mitigation measures identified to reduce potentially significant transportation impacts created by the LRDP, if applicable. In addition, improvement measures are provided in cases where project impacts are less than significant but measures to improve circulation or project access may be beneficial.

2 EXISTING CONDITIONS

This chapter provides a description of the existing transportation and circulation settings within the vicinity of the Parnassus Heights, Mission Bay, Mount Zion, and Mission Center campus sites. It includes descriptions of the UCSF Transportation Demand Management (TDM) Plan, existing roadway network, intersection operating conditions, transit network and service, pedestrian and bicycle conditions, loading, and parking supply and occupancy.

2.1 ELEMENTS OF ANALYSIS

The study examines Existing conditions related to the following transportation elements:

- UCSF TDM Plan – current and proposed TDM measures including UCSF shuttle service;
- Traffic Conditions – operations along key corridors providing access to and through the study areas;
- Transit Conditions – Muni and regional transit operations into and within the study areas;
- Pedestrian Conditions – qualitative assessment of conditions into and within the study areas;
- Bicycle Conditions – qualitative assessment of conditions into and within the study areas;
- Loading Conditions – passenger and freight operations within the study areas; and
- Parking Conditions – characterization of supply throughout the study areas.

2.2 UCSF TRANSPORTATION DEMAND MANAGEMENT PLAN

There are many different factors that determine how people travel to/from work, including home location, work shifts, access to transit, and travel incentives and disincentives (i.e. how convenient or costly it is to park). A TDM program is a set of policies and programs that include incentives, information, and education to encourage employees to commute to work by modes other than driving alone. The UCSF TDM program includes strategies that emphasize alternative commuting options, such as public transit, private shuttle service, biking, walking, and carpooling. The key elements of the UCSF TDM program are summarized in **Table 2-1**.

TABLE 2-1: EXISTING UCSF TDM PROGRAM ELEMENTS	
TDM Strategy	**Description**
Annual Transportation Survey	Annual employee and student survey to learn more about travel to, from, and within UCSF campus sites
Bicycle Racks	Total of approximately 970 bike stalls distributed throughout campus sites with capacity exceeding demand, with one exception – Parnassus Heights campus site
Showers and Lockers	Showers and lockers are provided at various campus sites, which can be used by bicyclists
Bicycle Permits	Free bicycle permits are provided allowing free access to enclosed bicycle parking facilities; free tire repair kits; bike fix-it stations available at Parnassus and Mission Bay campus sites; discounted SF Bike Coalition membership.
Shuttle	UCSF shuttle system serving all campus sites
Priced Permit Parking	UCSF offers over 30 varieties of parking permits to employees and students. The price of a permit varies between $40 and $250 per month. A limited number of permits are issued per year and are distributed based on a prioritization hierarchy
Priced Visitor Parking	UCSF offers short-term visitor parking. Both hourly and daily rates are available
City Carshare	UCSF staff and students qualify for personal memberships at a discounted rate. 18 City Carshare vehicles are available at various campus sites.
Pre-Tax Program	The Pre-Tax program allows employees to reduce their public transit and non-UCSF vanpool costs by about one-third. The program works by allowing participants to deduct up to $125 per month from their paycheck without paying payroll taxes on this income
Carpool Parking	Preferential parking for UCSF employees with a valid carpool permit
Zimride	UCSF-specific Zimride (ride sharing) website
Emergency Ride Home	Employees who need an emergency ride home can be reimbursed up to $50 for a transit, taxi or rental car trip
Telecommuting Policy	Eligibility to telecommute determined by job position/requirements and Department
Vanpool Program	The vanpool program requires a minimum of eight participants per vanpool. The driver participates for free and the riders pay about $240 per month per person. Currently, there are 33 vanpools that travel throughout the Bay Area, and as far as Sacramento.

Source: UCSF Transportation Services, 2013

2.2.1 UCSF Shuttle System

The core element of UCSF's TDM plan is the shuttle service that UCSF operates throughout San Francisco. The shuttle system fleet (currently 60 shuttles) provides service between transit facilities, remote parking lots, the various UCSF campus sites, and UCSF-affiliated hospitals/ medical centers within the city. The primary shuttle routes serve the Parnassus Heights, Mission Bay, Mount Zion, Mission Center, SFGH, and Laurel Heights campus sites. Service includes 13 fixed-route lines and two on-demand evening services. Fixed-route shuttle headways are generally between 15 to 25 minutes, and most routes operate between 6:00 AM and 9:00 PM, Monday through Friday. The two on-demand services operate both

UCSF shuttle stop at Parnassus Heights Campus Site

weekday and weekend nights. Riders can request on-demand service within a pre-defined border around the Parnassus Heights and Mission Bay campus sites by calling UCPD dispatch. All shuttle buses are equipped with bike racks. The service is free for UCSF faculty, staff, students, patients, and visitors.

Figure 2-1 illustrates the existing UCSF shuttle routes serving all current campus sites. **Table 2-2** summarizes the existing fixed-route UCSF shuttle routes and summarizes the route hours of operations and headways.

TABLE 2-2: UCSF SHUTTLES TO ALL CAMPUS SITES

Route	Campuses Served	Hours of Operation	Headways (minutes)[1]
Gold	Parnassus-Mt. Zion-Mission Bay-SFGH	5:45 AM – 9:25 PM	15/20
Blue	Parnassus-SFGH-Mission Bay-Mt. Zion	5:35 AM – 8:47 PM	15/20
Black	Parnassus-Mt. Zion-Laurel Heights	6:30 AM – 7:50 PM	20
Tan	Parnassus-Laurel Heights-Mt. Zion	6:50 AM – 7:45 PM	20
Purple	Parnassus (Library)-3360 Geary-Mt. Zion-3360 Geary	6:15 AM – 6:38 PM	45
Grey	Parnassus-Mission Bay	6:30 AM – 10:00 PM	20
Lime	Parnassus-BDC-MCB	6:05 AM – 8:31 PM	15
Pink	Parnassus E/R-Kezar	5:30 AM – 9:00AM	15
VA-Parnassus	Parnassus-VAMC	6:35 AM – 7:05 PM	30/60
Bronze	Aldea-Medical Building 1 (ACC)-Library-Sixth-Dental-Parnassus LPPI	6:45 AM – 6:29 PM	15/20
Red	Mission Bay-MCB-16th BART	5:55 AM – 7:45 PM	10/15
Green	Mission Bay-China Basin-654 Minnesota	6:25 AM – 6:40 PM	15
Yellow	16th BART-MCB-2300 Harrison-SFGH-2300 Harrison	6:07 AM – 8:23 PM	15

Note:
1. Multiple values indicate variability in headways during the day.

Source: UCSF Campus Life Services Transportation, Routes & Timetables, 2013-2014

UCSF's shuttle system is a key strategy in reducing the amount of car traffic to campus sites and thus reducing its greenhouse gas emissions. In 2011, 2.3 million passengers rode shuttles, an increase of one million passengers from 2003. With the opening of the UCSF Medical Center at Mission Bay in 2015, UCSF anticipates a ridership increase of approximately 5-10 percent on the Blue, Gold, and Grey routes, which provide service between the Parnassus Heights and Mission Bay campus sites.

As part of UCSF's ongoing efforts to provide efficient inter-campus shuttle service, minor adjustments were implemented in August 2012 to six shuttle routes to improve the overall quality and efficiency of shuttle services. The adjustments were intended to enhance the on-time performance and safety of the shuttle system. Further changes made in October 2013 included disallowing standees on the shuttles for safety concerns and an increase in shuttle service during the peak periods. In addition, a Shuttle Operations Study was completed in January 2014 by an outside consultant, which conducted a further review of UCSF's shuttle operations and routes in order to continue to reduce commute trips and to address neighborhood concerns regarding shuttle effects on neighboring streets.

These changes are in addition to other minor operational changes made periodically to improve operations or out of sensitivity to specific community concerns.

2.2.1.1 Capacity Utilization

The seated capacity of the Blue, Tan, Black, Purple, Green, Pink, Bronze, Yellow, and VA lines is 22 persons per vehicle. For the Lime and Red lines it is 30, and for the Grey line it is 33. The Gold line uses a mixed fleet of 22 and 30-seater vehicles.

The capacity utilization of the shuttle program was identified in the *UCSF Shuttle Operations Study Final Report*[5]. The study found that four lines operate above 100 percent capacity during the AM peak period (Grey, Blue, Gold, and Black lines). One line operates above 100 percent capacity in the midday period: the Tan line. Five lines operate above 100 percent capacity during the PM peak period: the Bronze, Tan, Gold, Grey, and Black lines. Of these instances, the highest ridership were found on the Grey and Blue lines in the AM peak period and the Yellow and Tan lines in the PM peak period, where capacity utilization is above 120 percent for one or more hours. Since this study was completed, UCSF Transportation Services has added a policy to restricting shuttle riders from standing on shuttles and subsequently increased shuttle service during peak periods to accommodate lines with greater than 100 capacity utilization.

The study also found that some lines operate below 50 percent capacity during part or all of the day. These include:

- The Lime line during all times but the PM peak;
- The Black, Gold, and Tan lines during the evening;
- The Grey line midday; and
- The Purple line during all times.

2.2.1.2 Stop Locations

UCSF shuttles stop at loading zones located on city streets at the Parnassus Heights, Mission Bay, and Mount Zion campuses. The shuttle stop is internal to the campus for the Mission Center campus. Specific stop locations and the lengths of each stop are listed below:

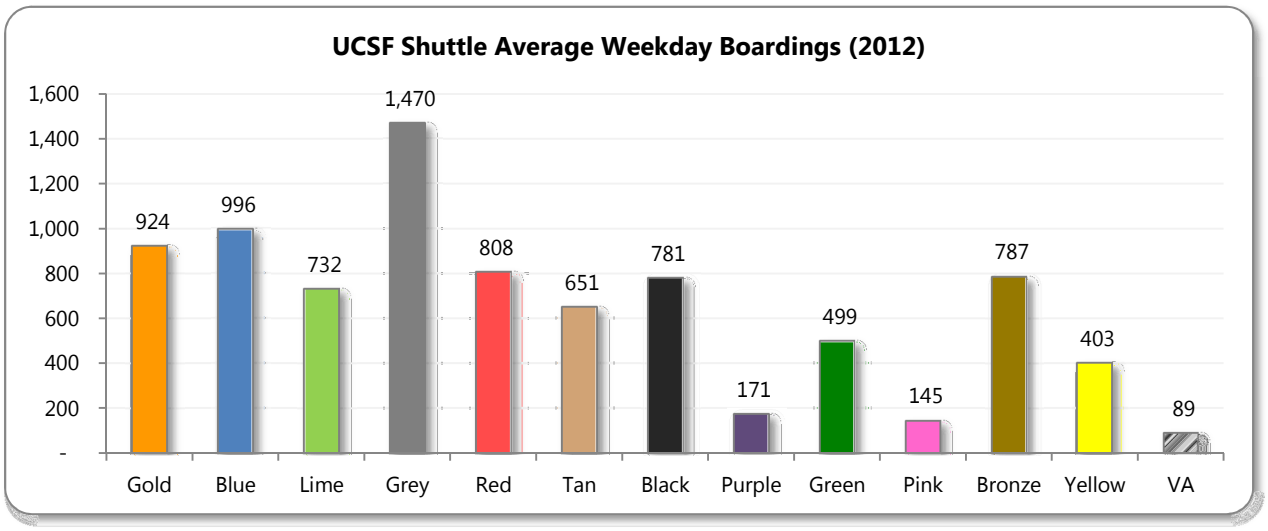
- Parnassus Heights;
  - 530 Parnassus Avenue, north side (adjacent to UCSF Library) – 140 feet
  - 401 Parnassus Avenue, south side (adjacent to Langley Porter Psychiatric Institute – 125 feet
- Mission Bay;
  - Fourth Street south of Gene Friend Way, west side – 150 feet
  - Fourth Street south of Gene Friend Way, east side – 70 feet
- Mount Zion; and
  - 2369 Sutter Street, south side – 55 feet
- Mission Center.
  - Internal to parking lot – 60 feet

In addition to the above permanent stop locations, UCSF shuttles currently use several stops on a temporary or limited basis. A shuttle stop at 1500 Owens Street on the Mission Bay Campus Site was

[5] Nelson\Nygaard. 2014. Shuttle Operations Study Final Report, January, 2014

formed recently and will likely relocate. The stops at Fourth Avenue and the ACC on the Parnassus Heights Campus Site are for drop-off only during limited times of day and for limited routes.

Inset 1 provides a summary of average weekday UCSF shuttle boardings by route. As of 2012, the route with the highest ridership is the Grey route, which provides direct service between the Parnassus Heights and Mission Bay campus sites.



Inset 1. UCSF Shuttle Boardings

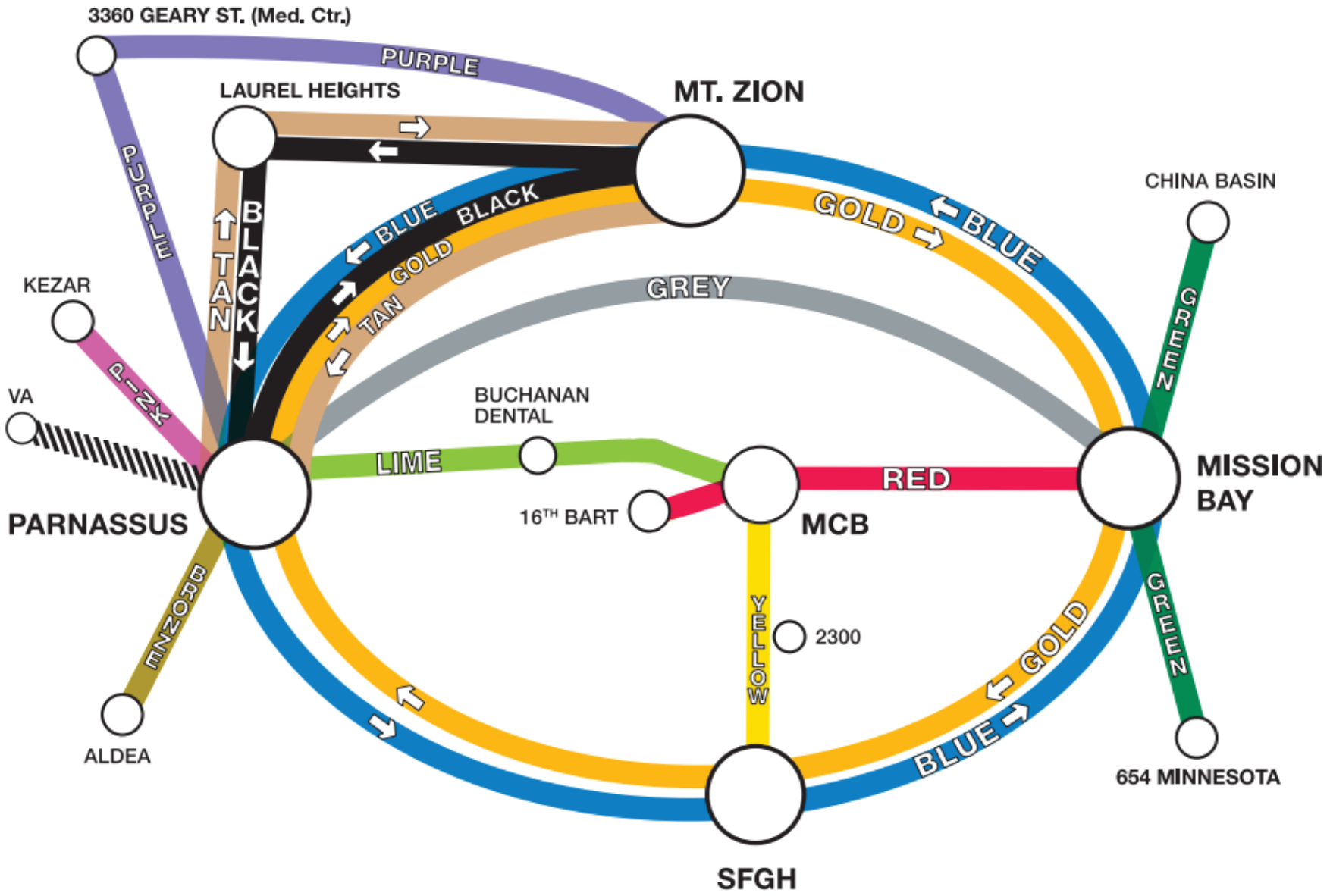


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Figure 2-1

Existing UCSF Shuttle Routes-
Major Campus Sites

Source: University of California, San francisco "'Shuttle Operations Study' Final Report", January 2014 (page 2-2)

2.3 PARNASSUS HEIGHTS

2.3.1 Roadway Facilities

This section describes the regional and local roadway system for the Parnassus Heights campus site. Approximately 48 percent of those traveling to and from the campus site drive alone, are dropped off, or carpool/vanpool. Roadway classification definitions, according to the Transportation Element of the San Francisco General Plan, are contained in **Appendix B**. With Golden Gate Park to the north and Mount Sutro to the south, the roadways used to access the Parnassus Heights campus site are primarily via east-west corridors – Parnassus Avenue-Judah Street, Irving Street-Carl Street, Lincoln Avenue, and Kirkham Street. Primary north-south routes to the Parnassus Heights campus site include Stanyan Street, Arguello Boulevard, Seventh Avenue, and Second Avenue through Fifth Avenue. The primary vehicular entrances to parking and loading areas for the campus site are located at the intersections of Second Avenue/Irving Street, Arguello Boulevard/Carl Street-Irving Street, along Parnassus Avenue, and at Fifth Avenue/Kirkham Street. The street network providing access to the Parnassus Heights campus site and the three other UCSF campus sites included in this study are shown in **Figure 2-2**.

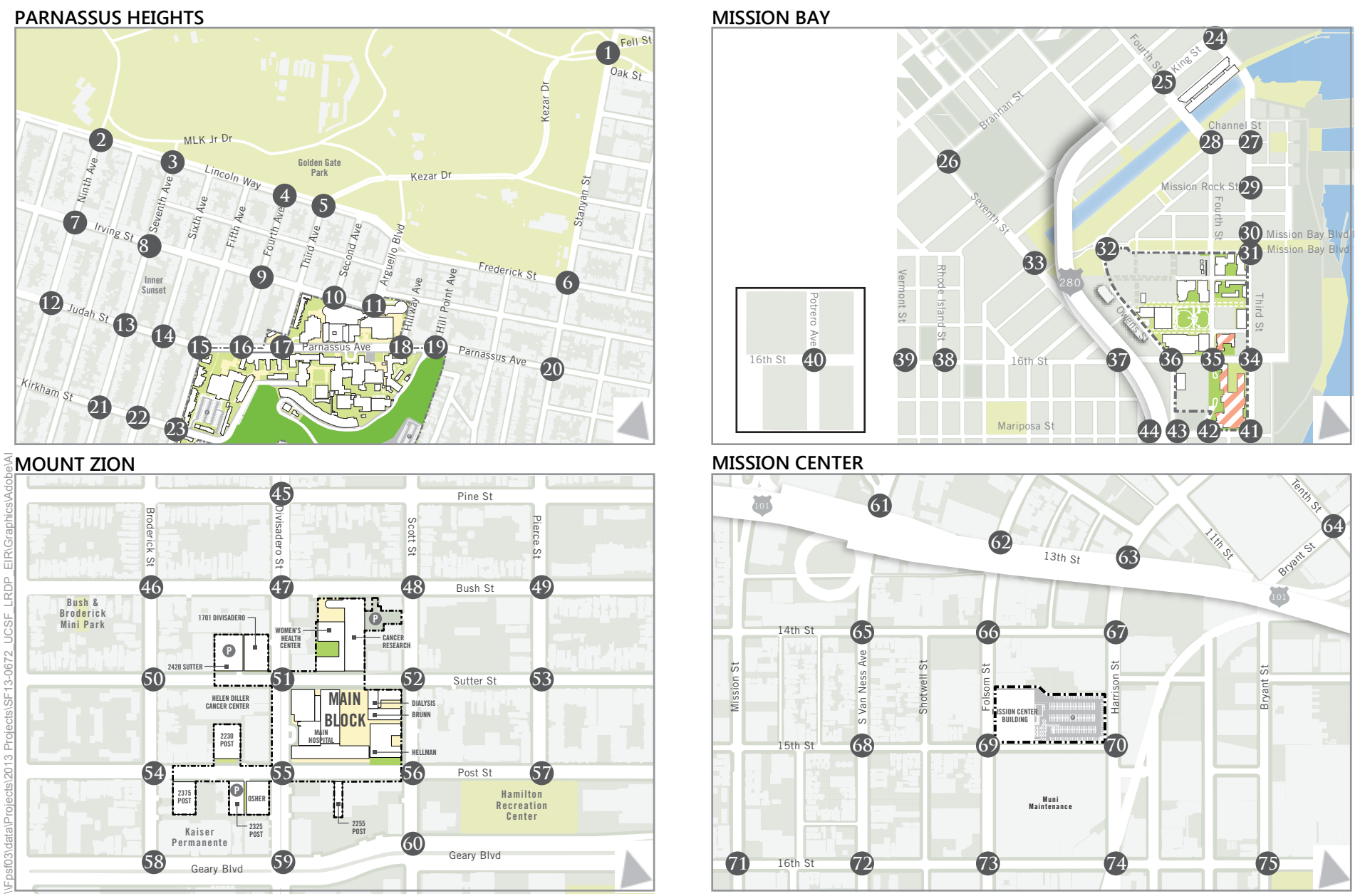

Figure 2-2

Roadway Network and Study Intersections-
All Campus Sites

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2.3.1.1 Regional Access

Regional access to the Parnassus Heights campus site is provided by several major freeways, as discussed below.

Interstate 80 (I-80) is a six-lane freeway located approximately three miles east of the campus site and connects San Francisco to the East Bay and other points east via the San Francisco-Oakland Bay Bridge. I-80 connects to U.S. 101 east of the campus site.

U.S. Highway 101 (U.S. 101) is an eight-lane freeway located approximately two miles east of the Parnassus Heights campus site. U.S. 101 connects San Francisco with the peninsula and the South Bay to the south and with the North Bay to the north via the Golden Gate Bridge. U.S. 101 connects to I-80 east of the campus site. Within the northern part of San Francisco, U.S. 101 operates on surface streets (i.e., Van Ness Avenue and Lombard Street). Van Ness Avenue and Lombard Street are part of the Citywide Pedestrian Network outlined in the Transportation Element of the *San Francisco General Plan*.

State Highway 1 (19th Avenue) is located approximately one mile west of the campus site, connecting San Francisco to the North Bay via the Golden Gate Bridge and to the South Bay via a connection to I-280 south of the campus site. Within the study area, 19th Avenue has six lanes, with left turns prohibited at most intersections. Restricted on-street parking is permitted on both sides of the street.

2.3.1.2 Local Access

Local access to the Parnassus Heights campus site is provided by an urban street grid network. Key local roadways through the campus site are discussed in detail below and defined according to roadway classifications identified in the San Francisco General Plan Transportation Element.

Kirkham Street is a two-lane east-west Local Street that runs between the Parnassus Heights campus site (at Fourth Avenue and the Dental Clinics) to La Playa Street in the west. East of Fifth Avenue, Kirkham Street becomes Koret Way (a Campus Street) and provides access to the School of Dentistry, Laboratory of Radiology, Medical Research 4, and School of Nursing buildings. On-street parking is provided on both sides of the street in most areas. West of Sixth Avenue, Kirkham Street has Class II bicycle lanes in both directions.

Parnassus Avenue/Judah Street is a two to three-lane east-west roadway that extends from Clayton Street to 48th Avenue. The City of San Francisco designates this roadway as Parnassus Avenue east of Fifth Avenue, and Judah Street west of Fifth Avenue. The City classifies this roadway as a Secondary Transit Street east of Ninth Avenue (in the vicinity of the Parnassus Heights campus site) and a Primary Transit Street (Transit-Oriented) west of Ninth Avenue. It has dual trolley wires in both directions for the 6 Parnassus bus route; there are bus stops roughly every 500 feet for both the 6 Parnassus and 43 Masonic bus routes. On-street parking is provided on both sides of the street in most areas. A two-way left turn lane extends from Stanyan Street to the Moffitt-Long Hospital. Access to the Millberry Union Garage is across from the Moffitt/Long Hospital Drop-off/Pick-up area (whose exit is signed as right turn only); two signalized crosswalks facilitate heavy pedestrian volumes across the street in the same location. Parnassus Avenue/Judah Street is also designated as a Class III bicycle route east of Sixth Avenue. Class III bicycle routes employ shared-lane markings ("sharrows").

Carl Street/Irving Street is a two-lane east-west roadway that extends from Clayton Street to 48th Avenue. East of Arguello Boulevard, the City designates the roadway as Carl Street; and as Irving Street to

the west. The City classifies this roadway as a Primary Transit Street (transit-oriented) east of Ninth Avenue. The N Judah light rail line operates along the roadway between Cole Street and Ninth Avenue. On-street parking is provided on both sides of the street in most areas. The street provides exclusive turn pockets for vehicles to enter the UCSF parking garage at the Second Avenue/Irving Street intersection.

Hugo Street is an east-west Local Street between Arguello Boulevard and Seventh Avenue. It has one lane in each direction, and on-street parking is provided on both sides of the street. Between Seventh Avenue and Third Avenue, Hugo Street is designated as a Class III bicycle route.

Lincoln Way/Frederick Street is a two to four-lane east-west Secondary Transit Street that forms the southern boundary of Golden Gate Park. The City designates this roadway as Frederick Street east of Arguello Boulevard; to the west the City designates the roadway as Lincoln Way. On-street parking is provided on both sides of the street. At Third Avenue, Lincoln Way merges with Kezar Drive and is a main thoroughfare between the Sunset District and downtown. The 71/71L Haight-Noriega uses the entirety of Lincoln Way and Fredrick Street to travel to Stanyan Street, while the 16X Noriega Express and NX Express use Lincoln Way to merge onto Kezar Drive in order to get to the Fell-Oak one-way couplet.

Kezar Drive is a two to four-lane east-west Major Arterial Street north of Parnassus Avenue that provides the major connection from the Parnassus Heights campus site to the Fell-Oak Street one-way couplet. Kezar Drive accommodates approximately 160 restricted parking spaces. The 16X Noriega Express and NX Express bus lines use Kezar Drive to travel from Lincoln Way to Oak Street. Kezar Drive also has a Class I bike path facility.

Stanyan Street is a north-south Secondary Transit Street from Geary Boulevard to Belgrave Avenue. It forms the eastern boundary of Golden Gate Park (excluding the Panhandle section of the park). In the vicinity of the Parnassus Heights campus site (north of Frederick Street), it is a four-lane roadway; south of Fredrick, it is a two-lane street. On-street parking is provided on both sides of the street in most areas. The 71/71L Haight-Noriega bus line operates along Stanyan Street north of Frederick Street.

Willard Street is a two-lane north-south Local Street that runs from Fredrick Street to Woodland Avenue. On-street parking is provided on both sides of the street, with 90-degree parking on the east side of the street between and Carl Street and Parnassus Avenue and the west side of the street between Parnassus Avenue and Belmont Avenue.

Hillway Avenue is a two-lane Local Street between Parnassus Avenue and Carl Street. Hillway Avenue is on a steep grade and has 90-degree parking on the east side of the street.

Arguello Boulevard is a two-lane north-south Local Street that runs from Kezar Drive to Carl Street. On-street parking is provided on both sides of the street, with parking at 90-degrees between Lincoln Way/Fredrick Street and Carl Street.

Second Avenue is a two-lane north-south Local Street that runs from Lincoln Way to Irving Street, with the southern end of the street providing direct access to a large public parking deck on the UCSF campus. On-street parking is provided on both sides of the street.

Third Avenue is a two-lane Local Street between Lincoln Way and Parnassus Avenue. Between Irving Street and Parnassus Avenue, the street has 90-degree parking on the east side of the street. On-street parking is provided on both sides of the street in most areas north of Irving Street. Between Hugo Street

and Lincoln Way, Third Avenue is a designated Class III bicycle route. Third Avenue provides eastbound only access at Lincoln Way.

Fourth Avenue is a two-lane Local Street between Lincoln Way and Parnassus Avenue. Between Irving Street and Parnassus Avenue, the street has 90-degree parking on the east side of the street. On-street parking is provided on both sides of the street in most areas north of Irving Street. Fourth Avenue is unsignalized and provides eastbound only access at Lincoln Way.

Fifth Avenue is a two-lane Local Street between Lincoln Way and its terminus south of Kirkham Street. Between Irving Street and Parnassus Avenue, the street has 90-degree parking on the east side of the street. On-street parking is provided on both sides of the street in most areas north of Irving Street. Fifth Avenue is signalized and provides full access at Lincoln Way.

Sixth Avenue is a two-lane Local Street between Lincoln Way and its terminus south of Kirkham Street. On-street parking is provided on both sides of the street in most areas. Sixth Avenue is designated as a bicycle route between Hugo Street and Kirkham Street and has a southbound Class II bicycle lane and northbound sharrows. South of Kirkham Street, Sixth Avenue becomes Locksley Avenue.

Seventh Avenue is a north-south Secondary Transit Street, which provides access to Golden Gate Park and becomes Laguna Honda Boulevard to the south of the Parnassus Heights campus site. It has one northbound and two southbound lanes in the vicinity of the campus site. On-street parking is provided on both sides of the street. Seventh Avenue is designated as a Class III bicycle route between Lincoln Way and Judah Street and as a Class II bicycle lane south of Judah Street. The 36 Teresita, 43 Masonic, and 44 O'Shaughnessy bus lines operate on Seventh Avenue south of Lawton Street.

Eighth Avenue is a two-lane north-south Local Street between Lincoln Way and its southern terminus at Pacheco Street. On-street parking is provided on both sides of the street. The 66 Quintara bus line operates along Eighth Avenue between Parnassus Avenue and Lawton Street in the northbound direction only.

Ninth Avenue is a Secondary Transit Street, which provides access to Golden Gate Park and the Sunset District. It has one northbound and two southbound lanes in the vicinity of the Parnassus Heights campus site. On-street parking is provided on both sides of the street. The N Judah light rail line operates on Ninth Avenue between Irving and Judah Streets. The 43 Masonic and 66 Quintara bus lines operate along Ninth Avenue between Judah Street and Lawton Street while the 44 O'Shaughnessy line runs between Golden Gate Park and Lawton Street.

2.3.1.3 Parnassus Avenue Counts

Traffic volumes on Parnassus Avenue between Fifth Avenue and Medical Center Way were collected for seven consecutive days, 24-hours per day, in 2007. More recent counts in 2013 showed that traffic volumes on Parnassus Avenue have remained mostly unchanged since 2007. The total daily traffic volume on Parnassus Avenue is relatively low by comparison to other two-lane streets in San Francisco. For example Polk Street carries approximately 16,000 vehicles per day compared to approximately 10,000 vehicles per day on Parnassus Avenue. Although Polk Street serves more commercial retail uses, compared to the more institutional and residential uses along Parnassus Avenue, this comparison shows that a two-lane street with frequent transit service is capable of serving much more traffic than currently exists on Parnassus Avenue, and that an oft described "busy feel" on Parnassus is due more to other factors, such as double-parking and high pedestrian volumes, than to heavy traffic volumes.

Many users competing for limited space creates a 'busy feel' on Parnassus Avenue
(Bottom photo courtesy BMS Design Group)

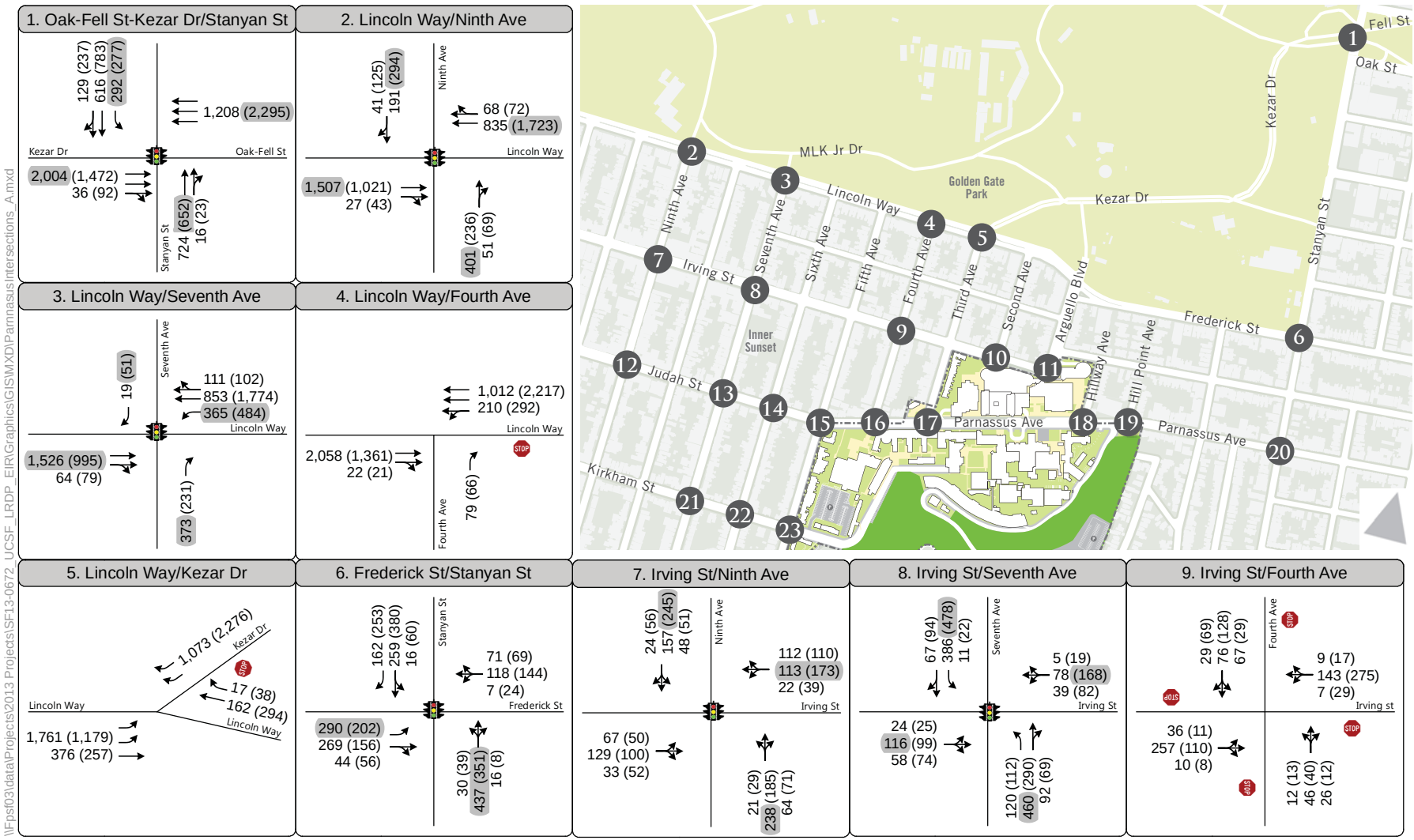
2.3.2 Intersection Operating Conditions

This report evaluates intersection operating conditions during the weekday AM (7:00AM-9:00AM) and PM (4:00PM-6:00PM) peak periods. Intersections usually form the critical capacity constraints on roadways. Therefore, most transportation analyses examine intersection operations as a measure of overall roadway conditions. The following 23 study intersections were selected for analysis through consultation with UCSF Campus Planning and San Francisco Planning Department staff. These study intersections are shown in **Figure 2-2**.

1. Oak Street-Fell Street-Kezar Drive/Stanyan Street
2. Lincoln Way/Ninth Avenue
3. Lincoln Way/Seventh Avenue
4. Lincoln Way/Fourth Avenue
5. Kezar Drive/Lincoln Way/Third Avenue
6. Fredrick Street/Stanyan Street
7. Irving Street/Ninth Avenue
8. Irving Street/Seventh Avenue
9. Irving Street/Fourth Avenue
10. Irving Street/Second Avenue
11. Irving Street/Arguello Boulevard
12. Judah Street/Ninth Avenue
13. Judah Street/Seventh Avenue
14. Judah Street/Sixth Avenue
15. Judah Street-Parnassus Avenue/Fifth Avenue
16. Parnassus Avenue/Fourth Avenue
17. Parnassus Avenue/Third Avenue
18. Parnassus Avenue/Hillway Avenue
19. Parnassus Avenue/Hill Point Avenue
20. Parnassus Avenue/Stanyan Street
21. Kirkham Street/Seventh Avenue
22. Kirkham Street/Sixth Avenue
23. Kirkham Street/Fifth Avenue

Figure 2-3A and **2-3B** display the existing AM and PM peak hour traffic volumes, lane configurations and traffic controls at each of the 23 study intersections. Intersection turning movement counts at the study intersections were collected in October 2011 and May 2013 on mid-week and non-holiday days when schools were in session. Intersection turning movement count sheets are provided in **Appendix D**.

The operating characteristics of intersections are evaluated using the concept of Level of Service ("LOS"). LOS is a qualitative description of driver comfort and convenience. Intersection levels of service range from LOS A, which indicates free flow or excellent vehicle flow conditions with short delays, to LOS F, which indicates congested or overloaded vehicle flow conditions with extremely long delays. For UCSF, LOS A through D is considered acceptable, and LOS E and LOS F are considered unsatisfactory service levels. The intersections were evaluated using the 2000 Highway Capacity Manual (HCM) methodology. Tables summarizing the relationship between average delay per vehicle and LOS for signalized and unsignalized intersections according to the 2000 HCM method can be found in **Appendix E**.



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Traffic Signal — Turn Lane — AM (PM) Critical Movement

Stop Sign — AM (PM) Peak Hour Traffic Volume — 1 Study Intersection

Figure 2-3A

Existing Intersection Lane Configurations, Traffic Control, and Volumes- Parnassus Heights

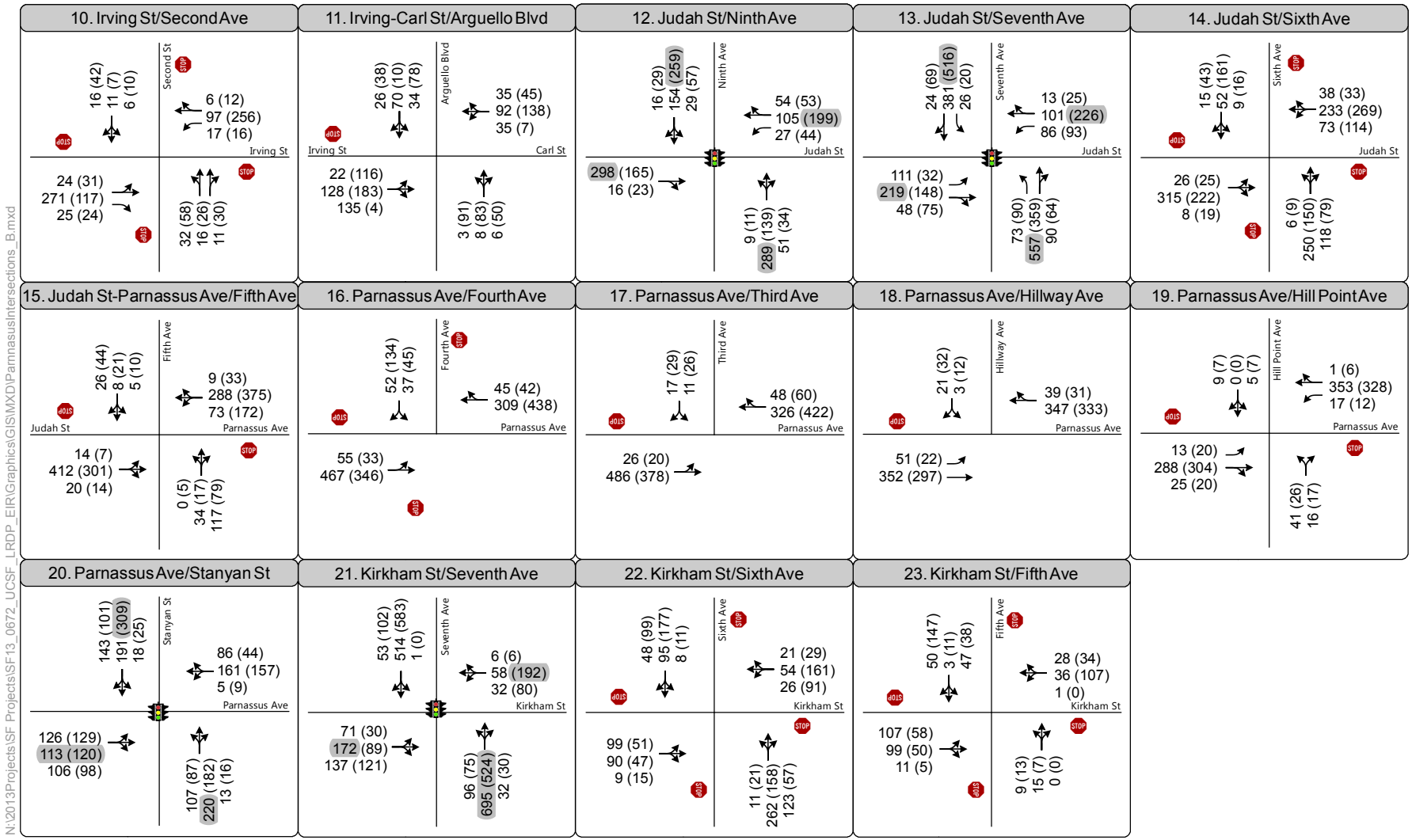


Figure 2-3B

Existing Intersection Lane Configurations, Traffic Control, and Volumes-Parnassus Heights

For signalized intersections, this methodology determines the capacity for each lane group approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average delay and LOS is presented for the intersection. For unsignalized intersections, operations are defined by the average control delay per vehicle (in seconds per vehicle) for each stop-controlled movement or movement that must yield the right-of-way, and the LOS is determined by the worst (highest average delay) approach. Generally, the delay ranges for each LOS are lower than for signalized intersections because drivers expect less delay at unsignalized intersections.

LOS was calculated at each study intersection for the weekday AM and PM peak hours, which represents the periods of the day when the transportation network as a whole experiences the highest traffic demand. As shown in **Table 2-3**, 21 of the 23 study intersections operate at an acceptable level of service (LOS D or better) during the AM peak hour and 20 study intersections operate at an acceptable level of service during the PM peak hour.

TABLE 2-3: EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE - PARNASSUS HEIGHTS

Intersection	Traffic Control[1]	Peak Hour	Vehicle Delay[2] (seconds)	LOS[3]
1. Oak Street-Fell Street-Kezar Drive / Stanyan Street	Signal	AM PM	45 **58**	D **E**
2. Lincoln Way / Ninth Avenue	Signal	AM PM	39 **65**	D **E**
3. Lincoln Way / Seventh Avenue	Signal	AM PM	32 39	C D
4. Lincoln Way / Fourth Avenue	SSS	AM PM	**>50** 23	**F** C
5. Lincoln Way-Kezar Drive / Third Avenue	SSS	AM PM	24 29	C D
6. Fredrick Street / Stanyan Street	Signal	AM PM	26 24	C C
7. Irving Street / Ninth Avenue	Signal	AM PM	17 20	B B
8. Irving Street / Seventh Avenue	Signal	AM PM	24 25	C C
9. Irving Street / Fourth Avenue	AWS	AM PM	11 / 12 11 / 12	B / B B / B
10. Irving Street / Second Avenue	AWS	AM PM	10 / 11 11 / 12	B / B B / B
11. Irving Street / Arguello Boulevard	SSS	AM PM	15 27	B D
12. Judah Street / Ninth Avenue	Signal	AM PM	15 16	B B
13. Judah Street / Seventh Avenue	Signal	AM PM	32 25	C C
14. Judah Street / Sixth Avenue	AWS	AM PM	17 / 18 17 / 22	C / C C / C
15. Judah Street-Parnassus Avenue / Fifth Avenue	SSS	AM PM	22 **42**	C **E**

TABLE 2-3: EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE - PARNASSUS HEIGHTS

Intersection	Traffic Control[1]	Peak Hour	Vehicle Delay[2] (seconds)	LOS[3]
16. Parnassus Avenue / Fourth Avenue	AWS	AM PM	15 / 18 19 / 23	B / C C / C
17. Parnassus Avenue / Third Avenue	SSS	AM PM	17 20	C C
18. Parnassus Avenue / Hillway Avenue	SSS	AM PM	13 15	B C
19. Parnassus Avenue / Hill Point Avenue	SSS	AM PM	17 16	C C
20. Parnassus Avenue / Stanyan Street	Signal	AM PM	41 29	D C
21. Kirkham Street / Seventh Avenue	Signal	AM PM	**70** 30	**E** C
22. Kirkham Street / Sixth Avenue	AWS	AM PM	13 / 16 13 / 14	B / C B / B
23. Kirkham Street / Fifth Avenue	AWS	AM PM	<10 / <10 <10 / <10	A / A A / A

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards

Source: Fehr & Peers, 2014.

The following intersections operate unacceptably during the AM or PM peak hours:

- Oak Street-Fell Street-Kezar Drive and Stanyan Street (Intersection #1) operates at LOS E during the PM peak hour due to the traffic volumes on north and southbound Stanyan Street.
- Lincoln Way and Ninth Avenue (Intersection #2) operates at LOS E during the PM peak hour due to the conflicting traffic volumes on westbound Lincoln Way and southbound Ninth Avenue.
- Lincoln Way and Fourth Avenue (Intersection #4) operates at LOS F during the AM peak hour due to high conflicting traffic volumes on eastbound Lincoln Way.
- Judah Street-Parnassus Avenue and Fifth Avenue (Intersection #15) operates at LOS E during the PM peak hour due to combination of the traffic volumes on the stop-controlled approaches of Fifth Avenue and the relative lack of gaps in traffic on Judah Street-Parnassus Avenue.
- Kirkham Street and Seventh Avenue (Intersection #21) operates at LOS E during the AM peak hour due to the relatively high conflicting traffic volumes on northbound Seventh Avenue and eastbound Kirkham Street.

2.3.3 Transit Network

The Parnassus Heights campus site is well-served by public transit, both local and regional. Local service is provided by the San Francisco Municipal Railway (Muni) bus and light rail lines, which provide transit service to the campus site and throughout San Francisco and can be used to access regional transit operators. Service to and from the East Bay is provided by Bay Area Rapid Transit (BART), Alameda-Contra Costa Transit (AC Transit) and ferries; service to and from the North Bay is provided by Golden Gate Transit buses and ferries; service to and from the Peninsula and South Bay is provided by SamTrans, BART, and Caltrain. As described in Section 2.2.1, UCSF supplements Muni transit service with its own shuttle system that provides direct connections to UCSF-operated or affiliated facilities throughout San Francisco. In many cases, these shuttles provide a direct transit alternative between two campus sites that would otherwise require a transfer between two or more Muni routes. Approximately 24 percent of those traveling to the Parnassus Heights campus site use public transit, while another 12 percent rely on UCSF shuttles to get to and from the campus site. **Figure 2-4** visualizes the local transit routes, including bus and shuttle stops, in the vicinity of the Parnassus Heights campus site.

2.3.3.1 San Francisco Muni

San Francisco Municipal Railway (Muni) provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car and electric streetcar lines. Muni operates a number of bus and rail lines in the Parnassus Heights campus site. **Table 2-4** presents the Muni routes serving the campus site within about a quarter-mile walk. **Table 2-5** summarizes existing ridership during the AM and PM peak hours. The route characteristics are current as of December 2013, including service frequencies during the weekday morning and evening peak periods, hours of operations and neighborhoods served, as well as ridership and capacity utilization at each line's maximum load point ("MLP"). The MLP is the location where the route has its highest number of passengers relative to its capacity. Capacity utilization relates the number of passengers per transit vehicle to the design capacity of the vehicle. The capacity per vehicle includes both seated and standing capacity, where standing capacity is between 30 to 80 percent of seated capacity in addition to seated capacity (depending upon the specific transit vehicle configuration). The capacity of a standard bus is 63 passengers.

Figure 2-4

Existing Transit Service-
Parnassus Heights

TABLE 2-4: LOCAL MUNI OPERATIONS - PARNASSUS HEIGHTS

Route	AM Peak Weekday Headways (7-9AM)[1]	PM Peak Weekday Headways (4-6PM)[1]	Hours of Operation	Neighborhoods Served by Route	Nearest Stop Location	Distance to Campus Site (feet)
6 – Parnassus	10	10	6AM – 1:30AM	Financial District, Golden Gate Heights	Several stops on Parnassus between Hillway Avenue and Fifth Avenue	0
16X – Noriega Express	9	9 – 10	Inbound: 6:30AM – 9AM Outbound: 4PM - 7PM	Financial District, Sunset District	Ninth Avenue and Lincoln Way	2,000
36 – Teresita	30	30	6AM – 11:30PM	Bernal Heights, Twin Peaks	Warren Drive and Locksley Avenue	1,500
43 – Masonic	10	12	5AM – 1:30AM	Marina District, The Excelsior	Several stops on Parnassus between Hillway Avenue and Fifth Avenue	0
44 – O'Shaughnessy	10	9	5AM – 1AM	Bayview/Hunters Point, Richmond District	Lawton Street and Seventh Avenue	1,500
66 – Quintara	20	20	6AM – 11PM	Sunset District	Lawton Street and Ninth Avenue	1,800
71/71L – Haight-Noriega/Limited	10	10	6AM – 1AM	Financial District, Haight-Ashbury, Sunset District	Frederick Street and Arguello Boulevard	600
N – Judah	7	7	3:30AM – 1:30AM	Financial District, Sunset District	Irving Street and Second Avenue	0

Notes:

1. Headway in minutes.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

TABLE 2-5: PEAK HOUR MUNI RIDERSHIP - PARNASSUS HEIGHTS

Route	AM Peak Ridership at MLP[1] (Inbound / Outbound)	AM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)[2]	PM Peak Ridership at MLP[1] (Inbound / Outbound)	PM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)[2]
6 – Parnassus	270 109	71% 32%	156 252	41% 67%
16X – Noriega Express	340 0	59% N/A	- 253	- 49%
36 – Teresita	42 50	47% 56%	62 30	69% 33%
43 – Masonic	348 246	**92%**[3] 65%	160 240	51% 76%
44 – O'Shaughnessy	398 222	84%[4] 59%	180 353	43% 84%[5]
66 – Quintara	45 48	33% 36%	18 48	13% 36%
71/71L – Haight-Noriega/Limited	300 131	79% 38%	258 324	68% **86%**[6]
N – Judah	1,792 544	**94%**[7] 29%	880 1,773	46% 83%[8]

Notes:

1. Maximum load point, which is the point at which the route has the maximum number of passengers relative to capacity, is identified for those lines operating above or near 85 percent.
2. **Bold** indicates capacity utilization of 85 percent or greater, which is a typical crowding standard used by transit agencies.
3. MLP located at Chestnut Street/Fillmore Street.
4. MLP located at Silver Avenue/Congdon Street.
5. MLP located at Alemany Boulevard/Lyell Street.
6. MLP located at Haight Street/Fillmore Street.
7. MLP located at Duboce Avenue/Church Street.
8. MLP located at Duboce Avenue/Church Street.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

2.3.3.1.1 Recent and Proposed Changes to Transit Service

The Transit Effectiveness Project (TEP) serves as both a thorough review of and repositioning of San Francisco's public transit system, initiated by SFMTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. TEP recommendations include new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The TEP recommendations were unanimously endorsed by the SFMTA Board of Directors in October 2008, for environmental impact review. The initial TEP recommendations were revised based on public feedback on the draft TEP environmental impact report (TEP EIR). The TEP EIR was certified on March 27, 2014, and the SFMTA Board of Directors approved most

of the Service Improvements and portions of the Transit Travel Time Reduction Proposals on March 28, 2014.[6] The TEP projects would be implemented based on funding and resource availability. The TEP Implementation Strategy anticipates that many of the improvements would be implemented sometime between Fiscal Year 2014 and Fiscal Year 2019, subject to funding sources and resource availability.[7]The following changes are proposed by the TEP for routes near the Parnassus Heights campus site.

- **6 Parnassus** - The TEP proposes changes to peak period headways, increasing from 10 minute to 12 minute headways in the AM peak period and from 10 minute to 12 minute headways during the PM peak period.
- **43 Masonic** – The TEP proposes to modify and extend the alignment of the 43 Masonic. The route will extend from Chestnut/Fillmore Streets to Fort Mason (Marina Boulevard/Laguna Street), replacing the existing Route 28 19th Avenue/28L 19th Avenue Limited terminal with new service on Lombard Street between Webster and Laguna Streets, Laguna Street between Lombard and Beach Streets, Beach and Bay Streets between Laguna and Buchanan Streets, and Buchanan Street between Bay and Beach Streets. Service in the Presidio will be modified to serve the Presidio Transit Center via Lincoln Boulevard between Letterman Drive and Graham Street, Graham Street between Lincoln Boulevard and French Court, French Court between Graham and Hallack Streets, and Hallack Street between French Court and Lincoln Boulevard. The TEP also proposes changes to peak period headways, reducing from 10 minute to 8 minute headways in the AM peak period and from 12 minute to 10 minute headways during the PM peak period.
- **44 O'Shaughnessy** – The TEP proposes changes to peak period headways, reducing from 10 minute to 7.5 minute headways in the AM peak period and from 10 minute to 7.5 minute headways during the PM peak period.
- **71/71L Haight-Noriega** – The TEP proposes to replace the 71 Haight Noriega with all-day limited stop service on Haight Street in both directions, similar to 71L service, which currently operates only in the peak period, peak direction. The route would make local stops west of Stanyan Street and on Market Street and would make limited stops between Stanyan and Market streets. The TEP also proposes changes to peak period headways, reducing from 10 minute to 7.5 minute headways in the AM peak period and from 10 minute to 7.5 minute headways during the PM peak period.
- **N Judah** - The TEP proposes changes to peak period headways, reducing from 9 minute to 8 minute headways in the AM peak period and from 9 minute to 8 minute headways during the PM peak period. In addition, the TEP proposes to implement traffic signal priority (TSP) toolkit elements in both the inbound and outbound directions, from the intersection of Carl and Cole streets to the intersection of Judah and La Playa streets. The TEP has a Moderate and Expanded Alternative. The Moderate Alternative would include transit stop changes, pedestrian improvements, and parking and turn restrictions. This alternative would also replace stop signs

[6] San Francisco Planning Department. 2014. TEP Final EIR, March 27, 2014, Available online at http://tepeir.sfplanning.org. Accessed April 3, 2014. Case No. 2011.0558E. The document and supporting information may also be viewed at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA in case file 2011.0558E.

[7] San Francisco Municipal Transportation Agency. 2014. TEP Implementation Workbook, March 5, 2014, Available online at: http://www.sfmta.com/sites/default/files/projects/TEP%20Implementation%20Plan%20-%20Section%201%20%282%29_1.pdf. Accessed June 27, 2014.

with traffic signals at seven intersections on Judah Street and one intersection on Irving Street. The Expanded Alternative would include the same transit stop changes, pedestrian improvements, parking and turn restrictions, and traffic signal and stop sign changes as the Moderate Alternative, except that stop signs at five of the intersections along Judah Street would be replaced with traffic calming measures, rather than traffic signals.

2.3.3.2 Regional Transit Service

In addition to Muni operations, regional transit service was considered. The following regional transit services operate within San Francisco and are accessible from the Parnassus Heights campus site via Muni or UCSF shuttles. **Table 2-6** presents the regional transit routes serving the transit study area and route characteristics as of November 2013, including service frequencies during the weekday morning and evening peak periods, hours of operations and neighborhoods served.

Golden Gate Transit

The Golden Gate Bridge, Highway, and Transportation District operates Golden Gate Transit (GGT), which provides bus and ferry service between the North Bay (Marin and Sonoma counties) and San Francisco. GGT operates 22 commuter bus routes, nine basic bus routes, and 16 ferry feeder bus routes into San Francisco. Bus routes operate at headways of 15 to 90 minutes depending on time and day of week and bus type. Golden Gate Transit also operates ferry service between the North Bay and San Francisco, connecting Larkspur and Sausalito with the Ferry Building during the morning and evening commute periods. Golden Gate Transit riders would need to transfer to Muni to access the Parnassus Heights campus site.

Alameda-Contra Costa County Transit District (AC Transit)

AC Transit operates bus service in western Alameda and Contra Costa Counties, as well as routes to the City of San Francisco and San Mateo County. AC Transit operates 33 "Transbay" bus routes between the East Bay and the Temporary Transbay Terminal, temporarily located at Howard Street and Beale Street. The Temporary Transbay Terminal is accessible from the Parnassus Heights campus site via Muni. The majority of Transbay service is provided only during commute periods in the peak direction of travel, with headways between buses from 15 to 20 minutes. The peak direction of service is into San Francisco during the AM peak period and out of San Francisco during the PM peak period. All-day service is provided on a few lines, with headways of approximately 30 minutes. AC Transit riders would need to transfer to Muni to access the Parnassus Heights campus site.

San Mateo County Transit District (SamTrans)

SamTrans operates bus and rail service in San Mateo County. A few SamTrans routes also serve the Temporary Transbay Terminal in downtown San Francisco, including Routes 292, 391, and 397. Route 292 makes San Francisco stops along Potrero Avenue and Mission Street throughout the day. AM peak hour headways are between 10 and 15 minutes, and PM peak hour headways are 20 minutes. Routes 391 and 397 run along Mission Street in San Francisco but stop only at the Temporary Transbay Terminal. Route 391 operates only during the peak travel periods with 15 minute headways; Route 397 is a late night service route with headways of one hour. SamTrans riders would need to transfer to Muni to access the Parnassus Heights campus site.

Bay Area Rapid Transit (BART)

BART provides regional commuter rail service between San Francisco and the East Bay (Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont), as well as between San Francisco and San Mateo County (SFO Airport and Millbrae). Weekday hours of operation are between 4:00 AM and midnight. During the weekday PM peak period, headways are 5 to 15 minutes along each line. Within San Francisco, BART operates underground along Market Street to Civic Center Station where it turns south through the Mission District towards Daly City. The closest BART station to the Parnassus Heights campus site is the Civic Center BART station, which is accessible via Muni.

Caltrain

Caltrain provides passenger rail service on the Peninsula between San Francisco and Downtown San Jose with several stops in San Mateo County and Santa Clara County. Limited service is available south of San Jose. Caltrain service headways during the AM and PM peak periods are 10 to 60 minutes, depending on the type of train. The peak direction of service is southbound during the AM peak period and northbound during the PM peak period. Caltrain service terminates at the San Francisco Station at Fourth and King streets (Fourth/King station). The Fourth/King station is served by local, limited, and express "Baby Bullet" trains which is accessible from the Parnassus Heights campus site via Muni.

TABLE 2-6: REGIONAL TRANSIT OPERATIONS- PARNASSUS HEIGHTS

Route	AM Peak Weekday Headways (7AM-9AM)[1]	PM Peak Weekday Headways (4PM-6PM)[1]	Hours of Operation	Areas Served by Route	Nearest Stop Location	Distance to Project Site
Caltrain Local	-	-	4:30AM-12:01AM (IB) 4:55AM-1:32AM (OB)	San Francisco, San Jose	Fourth and King	3.6 miles
Caltrain Limited-Stop	10-20	20-60	5:50AM-8:00PM (IB) 6:11AM-8:19PM (OB)	San Francisco, San Jose	Fourth and King	3.6 miles
Caltrain Baby Bullet	10-40	20-40	5:45AM-7:24PM (IB) 6:57AM-7:39PM (OB)	San Francisco, San Jose	Fourth and King	3.6 miles
BART	5-15	5-15	4:00AM-12:00AM (IB/OB)	East Bay, San Francisco, San Mateo County	Civic Center	2.7 miles
AC Transit	15-20	15-20	12:00AM-12:00AM(IB/OB)	East Bay, San Francisco	Beale between Folsom and Howard	3.9 miles
SamTrans Route 292	10-15	20	3:55AM-2:28AM (IB) 4:30AM-12:00AM (OB)	San Mateo County, SFO, San Francisco	Potrero / 24th	2.8 miles
GGT commuter and basic bus routes	15-90	15-90	4:01AM-12:41AM (IB) 5:06AM-2:28AM (OB)	North Bay, San Francisco	Eighth / Folsom	2.7 miles

Notes:

1. Headway in minutes.

Source: Caltrain, BART, AC Transit, SamTrans, GGT; Prepared by Fehr & Peers, 2013.

2.3.3.3 UCSF Shuttle System

Table 2-7 summarizes the UCSF shuttle routes serving the campus site, which includes most of the shuttle routes provided by UCSF. Shuttles to and from the Parnassus Heights campus site stop at shuttle zones along the north side of Parnassus Avenue, between Third Avenue and the Library, and on the south side of Parnassus Avenue, just west of UC Hall and also east of LPPI (as shown in **Figure 2-4**). These stops are designated by UCSF Transportation Services and reviewed/approved by SFMTA. UCSF shuttles were not observed to interfere with Muni operations at the Parnassus Heights campus site.

TABLE 2-7: UCSF SHUTTLES - PARNASSUS HEIGHTS

Route	Campus Sites Served	Hours of Operation	Headways (minutes)[1]	Average Weekday Boardings (2012)
Gold	Parnassus-Mt. Zion-Mission Bay-SFGH	5:45 AM – 9:25 PM	15/20	924
Blue	Parnassus-SFGH-Mission Bay-Mt. Zion	5:35 AM – 8:47 PM	15/20	996
Black	Parnassus-Mt. Zion-Laurel Heights	6:30 AM – 7:50 PM	20	781
Tan	Parnassus-Laurel Heights-Mt. Zion	6:50 AM – 7:45 PM	20	651
Purple	Parnassus (Library)-3360 Geary-Mt. Zion-3360 Geary	6:15 AM – 6:38 PM	45	171
Grey	Parnassus-Mission Bay	6:30 AM – 10:00 PM	20	1,470
Lime	Parnassus-BDC-MCB	6:05 AM – 8:31 PM	15	732
Pink	Parnassus E/R-Kezar	5:30 AM – 9:00AM	15	144
VA-Parnassus	Parnassus-VAMC	6:35 AM – 7:05 PM	30/60	89
Bronze	Aldea-Medical Building 1 (ACC)-Library-Sixth-Dental-Parnassus LPPI	6:45 AM – 6:29 PM	15/20	787

Notes:

1. Multiple values indicate variability in headways during the day.

Source: UCSF Campus Life Services Transportation, Routes & Timetables, 2014; Ridership data from *UCSF Shuttle Operations Study, Final Report,* January 2014, prepared by Nelson\Nygaard.

2.3.4 Pedestrian Circulation

Walking to and from the Parnassus Heights campus site is a common travel mode option for many UCSF employees and students. Approximately 11 percent of those traveling there walk to and from the campus site.

Pedestrian volumes were collected at each crosswalk in the Parnassus Heights campus site between 7:00 AM and 7:00 PM in both 2007 and 2013, as shown in **Figure 2-5**. A comparison of these counts showed that pedestrian volumes are essentially unchanged between 2007 and 2013, as evidenced by a total of approximately 25,300 and 26,000 average crossings, respectively. Some slight variations in crossing volumes at individual crosswalks was observed and since there has not been any significant development in the area since 2007, most changes in pedestrian activity would likely be related to typical seasonal or daily fluctuations or attributable to adjustments in the UCSF shuttle system routing. However, counts at the pedestrian crossing in front of the Medical Building 1 (ACC) at Irving Street increased 60 percent between 2007 and 2013. This may be an indication of increased light rail ridership.

During the same time period in which the two Parnassus Avenue signalized crosswalks accommodate approximately 18,500 crossings, the Parnassus Avenue roadway carries approximately 8,500 vehicles. Thus, on average, there are over two times more pedestrians crossing Parnassus Avenue than vehicles traveling along it. The pedestrian activity on Parnassus Avenue in the campus site area (Third Avenue to Hillway) is more than double the pedestrian activity occurring at Judah Street/Fifth Avenue to the west.

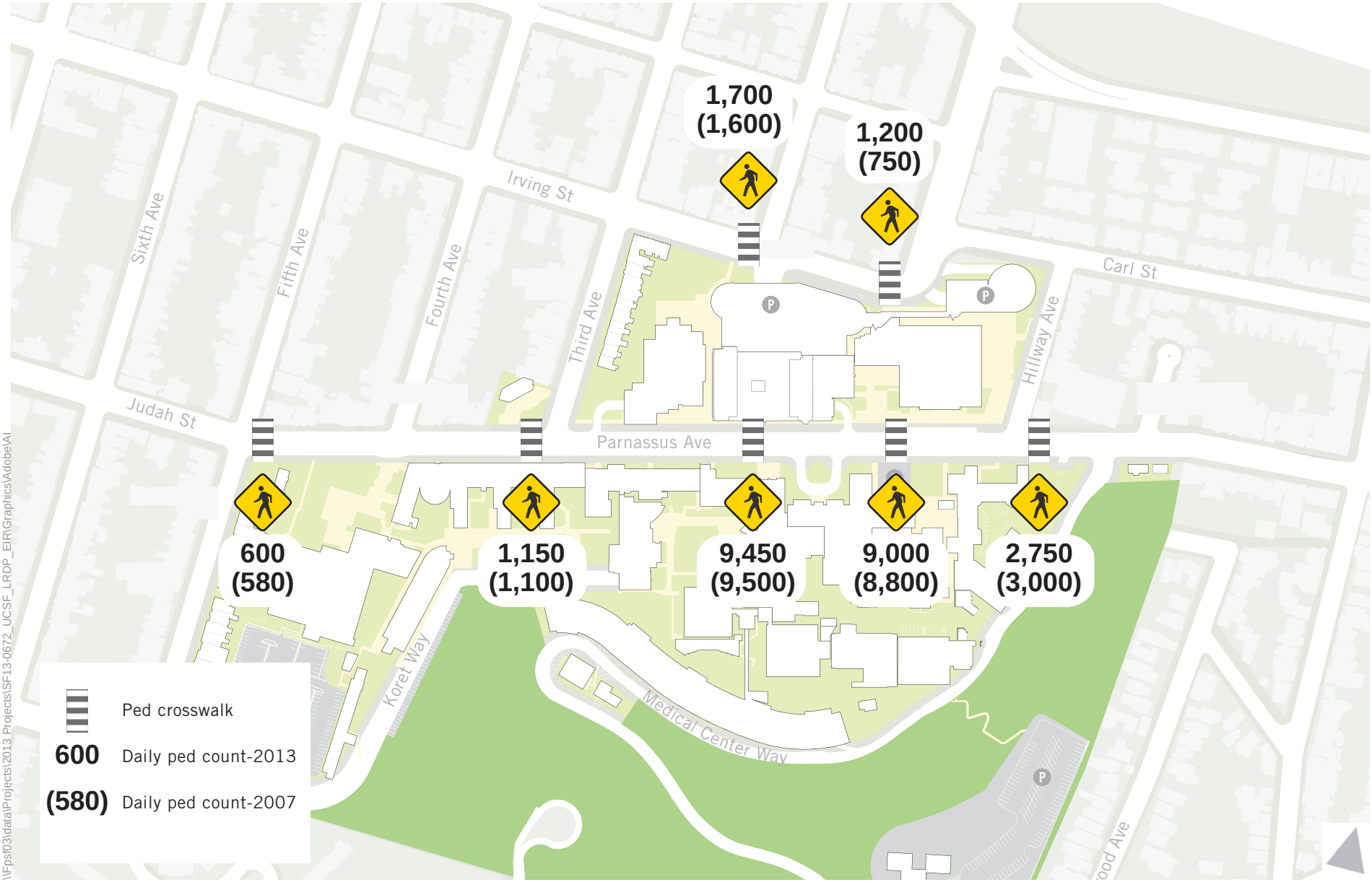
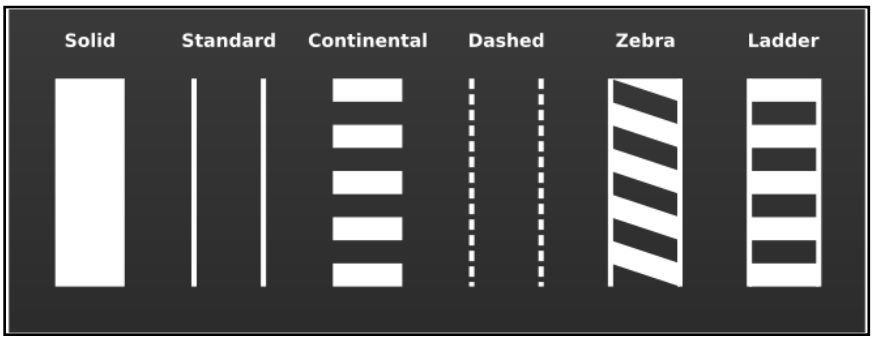


Figure 2-5

Daily Pedestrian Volumes: 2007 and 2013

Pedestrian facilities include sidewalks, crosswalks, curb ramps, and pedestrian signals. Within the campus site, sidewalks exist on both sides of the street in most locations, and are generally 12 to 15 feet wide. In some areas on the campus site, sidewalk widths exceed 20 feet. All study intersections provide painted crosswalks and directional curb ramps. High-visibility yellow continental stripe crosswalks exist on Judah Street at the intersections of Sixth and Seventh avenues. Two additional high-visibility continental stripe crosswalks exist on Parnassus Avenue adjacent to the Moffitt/Long Hospital Drop-off/Pick-up area, where there are two signalized pedestrian crosswalks with countdown timers. These signalized crossings accommodate the large number of pedestrians crossing from one side of Parnassus Avenue to the other. Most other crosswalks in the area are standard crosswalks; San Francisco typically only uses the standard crosswalk at signalized intersections, continental crosswalks at high-visibility locations (e.g., near schools), and ladder crosswalks. **Inset 3** illustrates sample crosswalk styles.

Inset 3. Crosswalk Styles



Field observations at the campus site indicate that the locations of the two signalized crosswalks across Parnassus Avenue in the campus core area are not aligned with many pedestrians' desired travel paths. A number of pedestrians exiting the UCSF Medical Center walk around Moffitt Circle and walk directly across Parnassus Avenue into the entrance to the Millberry Union, rather than walk east or west to one of the two signalized crosswalks.

2.3.5 Bicycle Circulation

Despite the hilly topography at the Parnassus Heights campus site, bicycling is a viable and common travel mode. UCSF has identified bicycling as an effective tool in reducing congestion and pollution, promoting good health, and creating a livable environment. Approximately five percent of those traveling to and from the campus site use a bicycle. In addition, approximately three percent of trips made by Parnassus Heights campus site employees and students to off campus, non-UCSF locations throughout the day are made by bike. This is consistent with the bicycling mode share throughout San Francisco. Several bikeways run within campus site vicinity, as shown in **Figure 2-6**.

Bicycle facilities in San Francisco consist of bicycle paths, separated bicycle lanes, bicycle lanes, and bicycle routes.

Bicycle Paths (Class I) provide a completely separated right-of-way for the exclusive shared use of cyclists and pedestrians. These facilities are off-street and minimize cross-flow traffic, but they can be adjacent to an existing roadway.

Example of Class II bicycle lane

Separated Bicycle Lanes (Class II) provide a striped, marked, and signed bicycle lane buffered from vehicle traffic. These facilities are located on roadways and require a minimum of four to five feet of space for exclusive bicycle traffic.

Bicycle Lanes (Class II) provide a striped, marked and signed lane for bicycle travel. These one-way facilities are located on roadways and reserve a minimum of four to five feet of space for exclusive bicycle traffic.

Example of Class III bicycle route

Bicycle Routes (Class III) provide a shared travel lane marked and signed for shared use with motor vehicle traffic. These facilities may or may not be marked with "sharrows" to emphasize that the roadway space is shared.

The following bicycle facilities are located within or near the Parnassus Heights campus site:

Parnassus Avenue is part of San Francisco Bike Route 40, an east-west bicycle route extending from Mission Bay to Ocean Beach, via 16th Street, 17th Street, Parnassus Avenue, and Kirkham Avenue. Within the Parnassus Heights campus site, the route is on Parnassus Avenue as a Class III shared-lane.

Sixth Avenue is part of a north-south bicycle route from The Presidio to San Francisco State University. In the vicinity of the campus site the route is on Sixth Avenue between Kirkham Street and Hugo Street and on Fifth Avenue between Hugo Street and Golden Gate Park, serving San Francisco Bike Routes 40 and 65. In the southbound direction, there is a Class II painted bike lane on Sixth Avenue, while the northbound direction there is a Class III shared-lane.

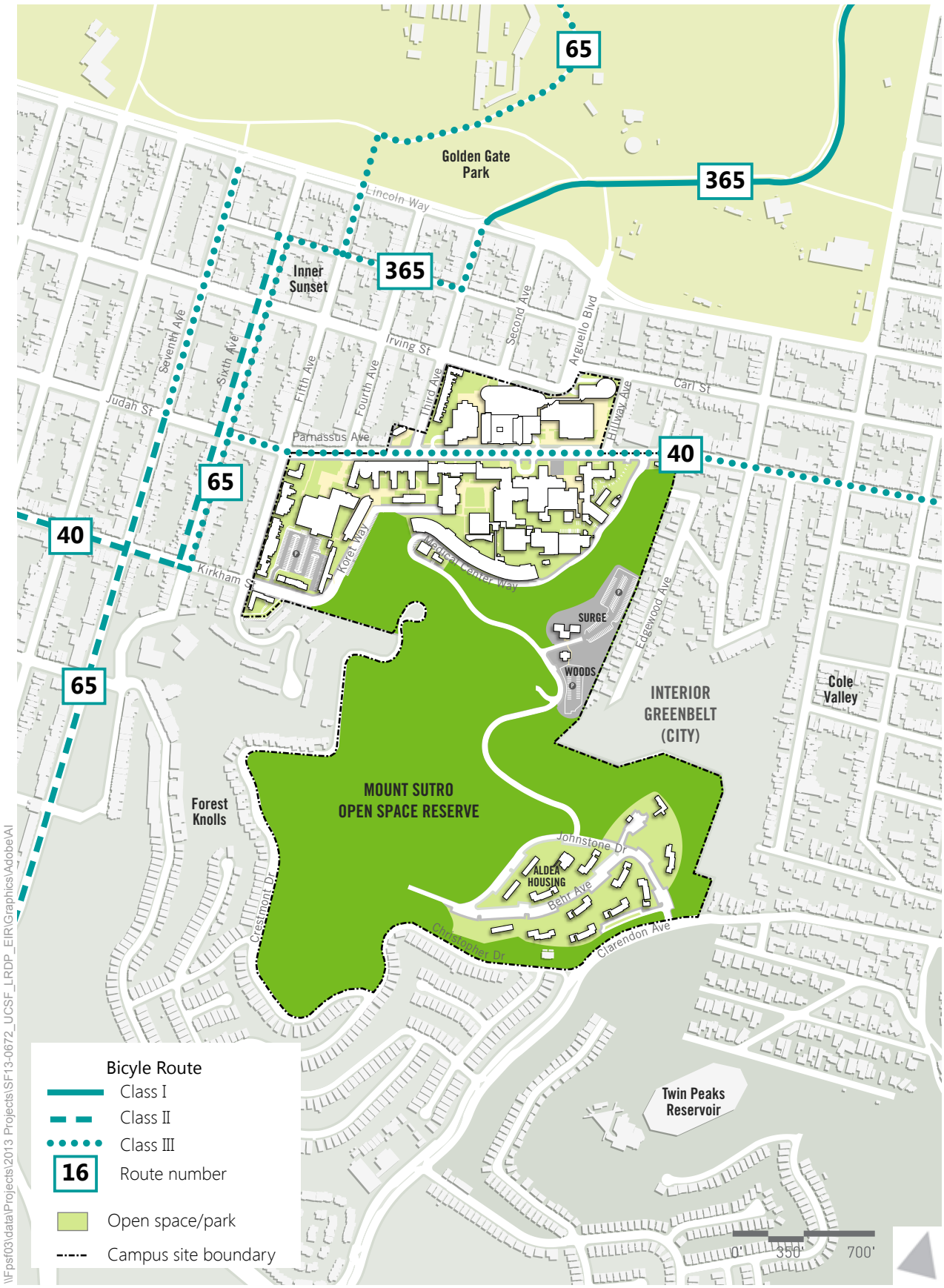


Figure 2-6

Existing Bicycle Facilities-
Parnassus Heights

Hugo Street is a short connector route from Seventh Avenue to Third Avenue and along Kezar Drive to the Golden Gate Park Panhandle serving San Francisco Bike Routes 65 and 365. Within the campus site on Hugo Street, it is a Class III bicycle route.

Seventh Avenue is part of San Francisco Bike Route 65, a north-south bicycle route extending from Golden Gate Park to Forest Hill. In the vicinity of the campus site, Seventh Avenue has Class II bicycle lanes in both directions south of Judah Street and sharrows between Judah Street and Golden Gate Park.

The SF Bike Plan does not include any short- or long-term improvements in the vicinity of the campus site.

Bicycle counts were collected along Parnassus Avenue, near Moffitt Circle, and Irving Street, near Second Avenue between 7:00 AM and 7:00 PM on a typical weekday in 2007 and again on Parnassus Avenue in 2013 during the same time period. In 2007, Irving Street/Carl Street, despite the fact that it has no official bicycle route designation, carried approximately four times as many bicycles as Parnassus Avenue, which is a designated bicycle route. In 2007, higher volumes along Irving Street and Carl Street were likely the result of the street being relatively flat compared to Parnassus Avenue or the result of the UCSF bicycle cage being located on the ground level of the Millberry Union Garage, which has an entrance at Second Avenue/Irving Street. In 2013, bicycle counts along Parnassus Avenue had increase four-fold when compared to 2007, paralleling the uptick in bicycle use throughout the city that has been reported by the SFMTA and seen anecdotally on key corridors, such as Market Street.

UCSF provides free, secured bicycle parking inside a bicycle cage in the Millberry Union Garage. There are bike racks at five additional locations throughout the campus: from east to west, they are at the Langley Porter Psychiatric Institute, the Ambulatory Care Center, the Kalmanovitz Library, the Clinical Science Building and the Dental Clinics Building. There are also on-street bicycle racks located along Parnassus Avenue; however, most bicyclists are encouraged (by signs) to park in the designated bicycle parking areas in the campus site buildings. During site visits conducted in 2013, all of the designated bicycle parking areas were parked at near capacity and numerous bikes were found to be parking on the street at parking meters and sign poles, indicating a high demand for bicycle parking facilities. Through the on-going monitoring of bicycle facilities, UCSF has since responded to user feedback about crowded bicycle parking facilities by doubling the capacity of the Millberry Union Garage bicycle cage and installing a new bike fix-it station.

2.3.6 Loading Conditions

The Parnassus Heights campus site has both service vehicle and passenger loading. There are 11 off-street service vehicle loading facilities serving the existing uses on the campus site, and summarized in **Table 2-8** and shown in **Figure 2-7**. Service vehicles may also load on-street on Parnassus Avenue.

Passenger loading takes place in the Moffitt Loop, located on Parnassus Avenue in front of Moffitt Hospital, or in passenger loading zones located along Parnassus Avenue.

TABLE 2-8: PASSENGER AND VEHICLE LOADING INFORMATION - PARNASSUS HEIGHTS

Building / Location	Loading Areas (Passenger or Vehicle)	# Vehicle Loading Spaces and Type	# Passenger Loading Spaces
Dental Clinics	Vehicle	1 parcel/truck space	--
Koret Vision	Vehicle	1 parcel/truck space	--
Nursing	Vehicle	2 parcel/truck spaces	--
Irving Dock	Vehicle	2 parcel/truck spaces	--
Moffitt Loop	Passenger	--	200 feet (10 spaces)
Millberry Tunnel	Vehicle	2 parcel/truck spaces	--
Central Receiving Area	Vehicle	3 parcel/truck spaces	--
Long Hospital	Vehicle	3 parcel/truck spaces	--
Dolby Regeneration Medicine	Vehicle	1 parcel/truck spaces	--
EHS	Vehicle	1 parcel/truck spaces	--
LPPI	Vehicle	1 parcel/truck spaces	--
On-Street Parnassus Ave	Vehicle /Passenger	250 feet (13 spaces) special truck loading zone (red designation) and 17 spaces general commercial metered (yellow designation)	140 feet (includes 5 valet spaces)
Total		47 parcel/truck spaces	340 feet

Source: UCSF, 2014

The loading area located on Parnassus Avenue in front of the Medical Building 1 (ACC) serves passenger vehicles, service vehicles, emergency vehicles, and is the drop-off location for valet service. This area in particular can become congested throughout the day, sometimes leading to vehicles blocking a lane of traffic as passenger and service loading occurs. Although all the loading areas shown in **Table 2-8** are used regularly for building deliveries, the Central Receiving Area and Long Hospital are typically the busiest locations throughout the day.

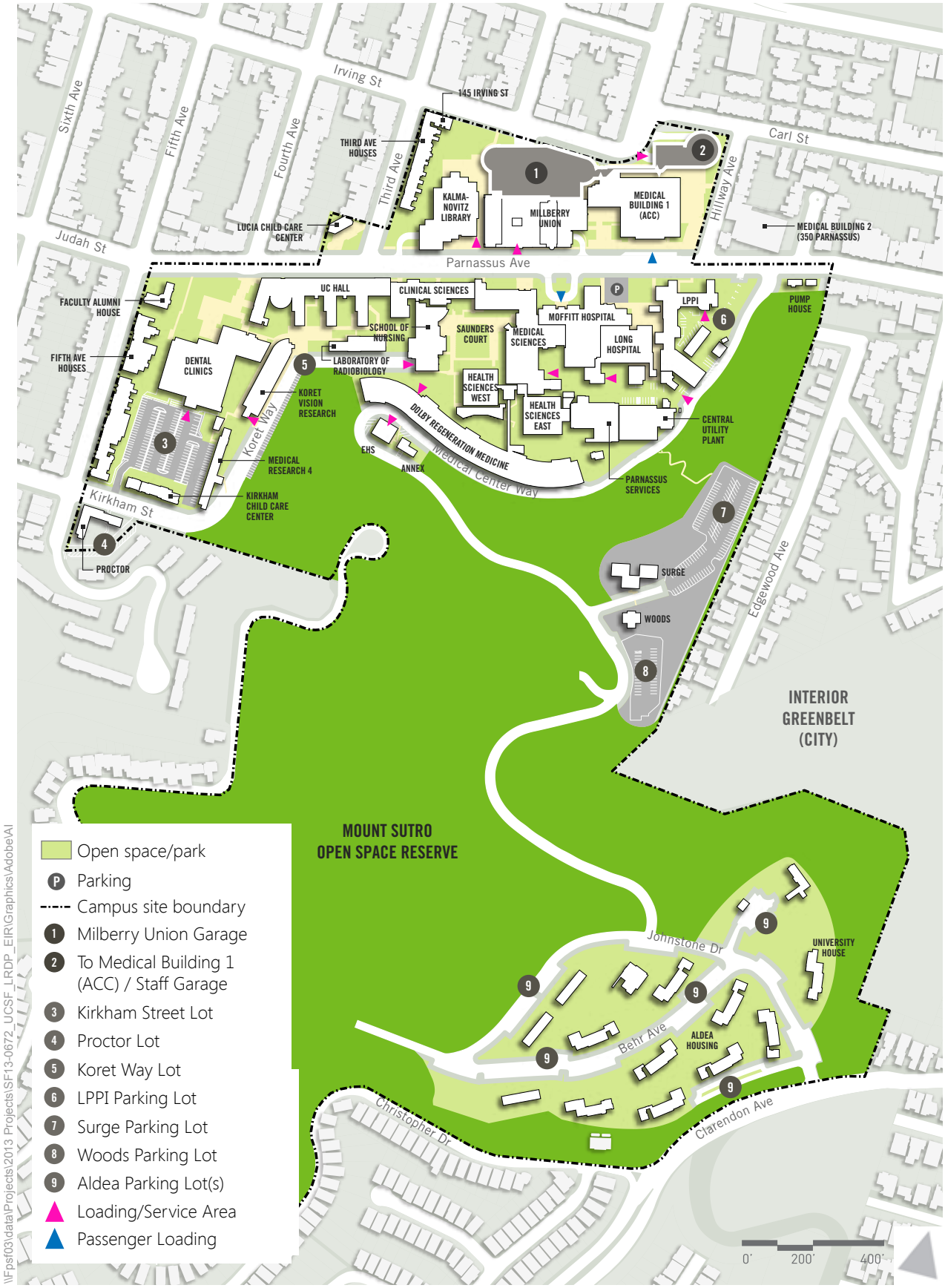


Figure 2-7

Existing Parking and Loading Locations-Parnassus Heights

2.3.7 Parking Conditions

2.3.7.1 On-Street Parking

Parking is available on most streets near the Parnassus Heights campus site. Most streets have parallel parking on both sides; however, due to the steep topography of the area, parking perpendicular to the direction of travel is provided on some streets. In such instances, parking is allowed on one side of the street only.

A variety of parking regulations apply to the on-street parking supply. The majority of the spaces are within the "J" Residential Parking Permit area (generally bounded by Lincoln Way and Haight Street, Clayton Street, Belgrave Avenue and Noriega Street, and 9th and 12th avenues), which restrict on-street parking Mondays through Friday, to a two-hour period between the hours of 8 am and 5 or 6 pm. Other parking spaces have meters and/or allow parking only during the non-peak commute periods.

Table 2-9 summarizes the on-street parking supply from a parking survey conducted in February 2014 for the area generally bounded by 6th Avenue, Lincoln Way, Stanyan Street, and Kirkham Street. Parking occupancies throughout the mid-morning (10 AM to noon), midday (noon to 2 PM), and evening (6 to 8 PM) periods is very similar, about 85 percent on average. The parking demand in this area is primarily associated with the UCSF campus site during the mid-morning and midday periods, and the residential and nearby neighborhood commercial uses during the evening period. These parking occupancies do not consider residents who park in their own driveways, which is typical in this area given the high parking demand.

2.3.7.2 Off-Street Parking

There are several UCSF-managed off-street parking facilities in the vicinity of the Parnassus Heights campus site that provide approximately 2,700 public and permit-only parking spaces. These include:

- Millberry Union / Kalmanovitz Library garage is a seven-level garage located between Judah Street and Irving Street with about a 1,075 vehicle capacity, of which approximately 1,000 spaces are available to the general public and the rest are reserved for UCSF faculty and staff. In addition, staff, faculty, and students may purchase monthly "afternoon" parking permits to park in this garage on weekdays from 2:30 PM to 8:00 AM and anytime on the weekend.
- Medical Building 1 (ACC) garage is located adjacent to the Millberry Union Garage, at the Irving Street/Arguello Boulevard intersection. It provides 1,007 marked parking spaces and can accommodate 330 additional vehicles with implementation of attendant parking. Permit parking is available for faculty, house staff, and senior management.
- Proctor surface lot is located south of Kirkham Street near the intersection of Fifth Avenue and provides 16 spaces available by permit.
- The Westside parking facility is a four-tier surface lot containing 151 parking spaces behind the Dental Clinics Building at Fourth Avenue and Kirkham Street, on the western edge of the campus site. Approximately 81 spaces are reserved for permit parking.
- Beckman surface lot contains 76 parking spaces and is located on Koret Way across from the Beckman Vision Center, 13 of those spaces are available for public parking.

TABLE 2-9: PARNASSUS HEIGHTS EXISTING ON-STREET PARKING SUPPLY AND OCCUPANCY [1]

Street Location	Overall Supply (spaces)	Occupancy [2]		
		Mid-Morning	Midday	Evening
North-South Streets				
6th Av, Lincoln Way to Kirkham St	131	74%	76%	76%
5th Av, Lincoln Way to Kirkham St	140	71%	79%	76%
4th Av, Lincoln Way to Judah St	85	89%	88%	89%
3rd Av, Lincoln Way to Judah St	82	89%	90%	82%
2nd Av, Lincoln Way to Irving St	41	95%	98%	90%
Arguello Blvd, Frederick St to Hugo St	61	97%	85%	97%
Hillway Av, Carl St to Parnassus St	22	95%	95%	77%
Hill Point Av	18	56%	50%	83%
Willard St., Frederick St to Parnassus St	59	92%	81%	97%
Stanyan St, Frederick St to Parnassus St	45	71%	56%	78%
Total North-South Streets	**684**	**82%**	**81%**	**83%**
East-West Streets				
Lincoln Way, 6th Av to Arguello Blvd	58	67%	74%	74%
Frederick St, Arguello Blvd to Stanyan St	105	86%	92%	99%
Hugo St, 6th Av to Arguello Blvd	89	97%	92%	102%
Irving St, 6th Av to Arguello Blvd	77	92%	97%	91%
Carl St, Arguello Blvd to Stanyan St	85	95%	91%	104%
Judah St, 6th Av to 5th Av	14	79%	64%	57%
Parnassus Av, 5th Av to Stanyan St	83	82%	78%	82%
Kirkham St, 6th Av to 4th Av	55	95%	93%	33%
Total East-West Streets	**566**	**88%**	**88%**	**87%**
Total All Streets	**1,250**	**85%**	**84%**	**85%**

Notes:

1. Data collected in February 2014.
2. Values over 100% indicated illegal parking, such as double parked vehicles or vehicles stopped at a fire hydrant.

Source: Adavant Consulting.

- The Environmental Health and Safety Building has a 9-space surface parking lot, off Medical Center Way at the south edge of the campus site, available by permit.
- The Surge and Woods lots form a 158-space surface parking lot located off Medical Center Way above the Parnassus Heights campus site. Parking permits for this location are issued for staff.
- The Langley Porter Psychiatric Institute has a 21-space surface parking lot, off Medical Center Way at the eastern edge of the campus site, available by permit.

- The Emergency Room parking area is accessed off Parnassus Avenue at the southeast end of the campus site and provides 23 parking spaces reserved for ambulances, emergency patients, and for designated radiation and chemotherapy patients.
- Aldea surface parking lots are located within the Aldea San Miguel Housing Area in the southern portion of the campus site and contain 192 parking spaces reserved to UCSF residents.

In addition, the Kezar surface lot is a city-owned parking facility adjacent to Kezar Pavilion on Stanyan Street. UCSF has about 200 spaces reserved for staff and faculty use during the day. UCSF shuttle bus service is provided between the lot and the campus site during normal business hours every 10 to 20 minutes on average.

Table 2-10 summarizes the off-street parking supply and occupancy at the major parking facilities at the Parnassus Heights campus site. Parking surveys were conducted in February 2014 for the weekday mid-morning (10 AM to noon), midday (noon to 2 PM), and evening (6 to 8 PM) periods. As shown in the table, the overall occupancy of the spaces in the surveyed parking facilities is about 88 percent between 10 AM and 2 PM, and about 50 percent between 6 and 8 PM. An occupancy above 90 percent typically represents that the facility is at its effective capacity.

TABLE 2-10: PARNASSUS HEIGHTS EXISTING OFF-STREET PARKING SUPPLY AND OCCUPANCY [1]

Major Parking Facility	Overall Supply (spaces)	Occupancy		
		Mid-Morning	Midday	Evening
UCSF Facilities				
Millberry Union Garage	1,075	83%	87%	68%
Medical Building (ACC) Garage	1,007	90%	87%	43%
Westside Surface Lot	151	91%	84%	37%
Surge and Woods Surface Lots	158	79%	79%	19%
Total UCSF Parking Facilities	**2,391**	**86%**	**86%**	**52%**
Other Parking Facilities				
Kezar Surface Lot	306	100%	89%	58%
All Facilities	**2,697**	**88%**	**87%**	**53%**

Note:

1. Data collected in February 2014.

Source: Adavant Consulting, UCSF

2.4 MISSION BAY

2.4.1 Roadway Facilities

This section describes the regional and local roadway system for the Mission Bay campus site. Approximately 39 percent of those traveling to and from the campus site drive alone, are dropped off, or carpool/vanpool. The campus site sits within the Mission Bay redevelopment area and is bordered by the South of Market (SoMa) neighborhood to the north, Potrero Hill to the west and the Dogpatch to the south. The primary north-south corridors are Third Street, Fourth Street, and Seventh Street and the primary east-west corridors are 16th Street and Mariposa Street. The street network providing access to the Mission Bay campus site is shown in **Figure 2-2**.

2.4.1.1 Regional Access

Regional access to the Mission Bay campus site is provided by several major freeways, as discussed below.

I-280 is a six-lane freeway located adjacent to the Mission Bay campus site to the west and connects San Francisco to the South Bay. I-280 connects to U.S. 101 south of the campus site. Access to I-280 is provided at the on-and off-ramps at Mariposa and 18th streets.

I-80 is a six-lane freeway located approximately one mile northwest of the campus site and connects San Francisco to the East Bay and other points east via the San Francisco-Oakland Bay Bridge. I-80 connects to U.S. 101 west of the campus site. Access to I-80 is provided via Third and Seventh streets to on- and off-ramps in the SoMa neighborhood.

U.S. 101 is an eight-lane freeway located approximately one mile west of the campus site. U.S. 101 connects San Francisco with the peninsula and the South Bay to the south and with the North Bay to the north via the Golden Gate Bridge. U.S. 101 connects to I-80 east of the Mission Bay campus site. Access to U.S. 101 is provided via I-280 in the southbound direction and via 16th Street to South Van Ness in the northbound direction.

2.4.1.2 Local Access

Local access to the Mission Bay campus site is provided by an urban street grid network. Key local roadways through the campus site are summarized below and defined according to roadway classifications identified in the San Francisco General Plan Transportation Element.

Third Street is a four-lane north-south Primary Transit Important roadway that extends from Market Street to Bayshore Boulevard. Near the Mission Bay campus site, on-street parking is prohibited on both sides of the street. Third Street is designated as a Class III bicycle route with sharrows between King Street and Terry A François Boulevard in the northbound direction only. The T Third Street light rail line operates along Third Street between Channel Street and Bayshore Boulevard along a physically separated median in the roadway.

Fourth Street is a two-lane north-south Primary Transit Important roadway that extends from Market Street to 16th Street. On-street parking is provided on both sides of the street. Fourth Street is designated as a Class III bicycle route as it crosses Mission Creek, after which it transitions into Class II bicycle lanes

between Channel Street and 16th Street. The T Third Street light rail line operates on Fourth Street between King Street and Channel Street.

Seventh Street is a two-lane north-south Secondary Arterial roadway that extends from Market Street to 16th Street. On-street parking is provided on both sides of the street between Irwin Street and 16th Street. Seventh Street has Class II bicycle lanes between Brannan and 16th streets.

16th Street is a four-lane east-west Secondary Arterial roadway with left turn pockets that extends from Third Street to Castro Street. Within campus site study area, on-street parking is prohibited on both sides of the street. 16th Street has Class II bicycle lanes in both directions between Third Street and Kansas Street.

Mission Bay Boulevard North and South are a one-lane one-way east-west couplet Local Street that extends from Terry A François Boulevard to Fourth Street; right-turn only lanes are provided at intersections. It is located at the northern edge of the Mission Bay campus site and will be eventually extended to connect to the Mission Bay Circle in the future, located approximately 1,300 feet to the west, as part of the Mission Bay Redevelopment Plan. On-street parking is provided on the north side of the Mission Bay Boulevard North.

King Street is a five to six-lane east-west Primary Transit Important roadway that extends from Second Street to Fifth Street and the I-280 freeway. On-street parking is provided for half of a block between Second and Third streets and Third and Fourth streets in the westbound direction and for a quarter of a block between Fourth and Fifth streets. The N Judah and T Third Street light rail lines operate along the entirety of King Street within a physically separated median in the roadway.

Berry Street is a two-lane east-west Local Street that extends from Third Street to Owens Street. Berry Street operates as an eastbound one-way street between Third and Fourth streets. On-street parking is provided primarily in the eastbound direction, though there are some areas that have on-street parking on both sides of the street.

Channel Street is a four-lane east-west Local Street that currently extends from west of Fourth Street to Third Street. On-street parking is prohibited on both sides of the street between Third and Fourth streets, and permitted west of Fourth Street. The T Third Street rail line operates on Channel Street between Third and Fourth streets within a physically separated median in the roadway. Channel Street will be extended to the Mission Bay Circle in the future, as part of the Mission Bay Redevelopment Plan.

Mission Rock Street is a two-lane east-west Local Street that extends from Terry A François Boulevard to Fourth Street. On-street parking is provided on both sides of the street.

Mariposa Street is a four-lane east-west Local Street that extends from Illinois Street to Harrison Street that is located at the southern edge of the Mission Bay campus site. The I-280 on- and off-ramps (southbound and northbound, respectively) are located immediately east of the intersection of Pennsylvania and Mariposa streets. Both sides of the street provide on-street parking. In addition, Mariposa Street is a designated Class III bicycle route with sharrows between Illinois Street and Mississippi Street.

Owens Street is currently a two-lane north-south Local Street that extends from 16th Street to the Mission Bay Circle along the western edge of the Mission Bay campus site. On-street parking is prohibited on both

sides of the street. It will be restriped to four lanes each way as part of the Mission Bay Redevelopment Plan.

Mission Bay Drive is a four-lane Local Street that extends from the Mission Bay Circle to Seventh Street under the I-280 freeway and across the Caltrain railroad tracks; the eastbound and westbound travel lanes are separated by a landscaped median. On-street parking is prohibited and Class II bicycle lanes are provided on both sides of the street.

Mississippi Street is a north-south roadway that runs discontinuously between 16th/Seventh and César Chávez streets. In the vicinity of the Mission Bay campus site, Mississippi Street has one traffic lane each way; it is a City-designated Class II bicycle facility between 16th and Mariposa streets.

2.4.1.3 Proposed Local Roadway Changes

The 1998 Mission Bay South Area Plan proposed substantial changes to the roadway infrastructure in the vicinity of the Mission Bay campus site that are to be constructed as the area develops. Of all of these, the following infrastructure improvements are to be implemented by the Mission Bay Development Group (MBDG, the infrastructure master developer), as part of the opening of the Phase One Medical Center at Mission Bay in February 2015:

- Owens Street will be extended from 16th Street to Mariposa Street, to connect with the I-280 on- and off-ramps and to create a new intersection at Mariposa Street. The existing signal at the intersection of Mariposa Street and the I-280 northbound off-ramp will be upgraded to accommodate the new Owens Street approach.
- Mariposa Street will be widened on the north side from Owens Street to Illinois Street by approximately 15 feet, and left turn lanes will be provided at major intersections. The Mariposa Street Bridge over the Caltrain tracks will be restriped to provide two exclusive left turn lanes in the westbound direction for a total of three lanes, and create a new signalized intersection with Owens Street.
- The northbound I-280 off-ramp will be widened to the east to provide an additional lane and better align with Owens Street. Mariposa Street between the I-280 southbound on-ramp and Pennsylvania Avenue will be re-striped to accommodate the lane configurations described above.
- The existing STOP-sign controlled intersection of Mariposa Street and the I-280 southbound on-ramp will be signalized; the new signal will be interconnected with the existing signal at the off-ramp.

2.4.2 Intersection Operating Conditions

The following 21 study area intersections were selected for analysis through consultation with UCSF Campus Planning and San Francisco Planning Department staff. These study intersections are shown in **Figure 2-2**.

24. King Street/Third Street
25. King Street/Fourth Street
35. 16th Street/Fourth Street
36. 16th Street/Owens Street

26. Brannan Street/Seventh Street
27. Channel Street/Third Street
28. Channel Street/Fourth Street
29. Mission Rock Street/Third Street
30. Mission Bay Boulevard North/Third Street
31. Mission Bay Boulevard South/Third Street
32. Mission Bay Drive/Owens Street
33. Mission Bay Drive/Seventh Street
34. 16th Street/Third Street
37. 16th Street/Seventh Street
38. 16th Street/Rhode Island Street
39. 16th Street/Vermont Street
40. 16th Street/Potrero Avenue
41. Mariposa Street/Third Street
42. Mariposa Street/Fourth Street
43. Mariposa Street/I-280 Northbound Ramps
44. Mariposa Street/I-280 Southbound Ramps

Figure 2-8A and **Figure 2-8B** display the existing AM and PM peak hour traffic volumes, lane configurations and traffic controls at each of the 21 study intersections. Intersection turning movement counts at the study intersections were collected in November 2011 and May 2013 on mid-week and non-holiday days when schools were in session. Intersection turning movement count sheets are provided in **Appendix D**.

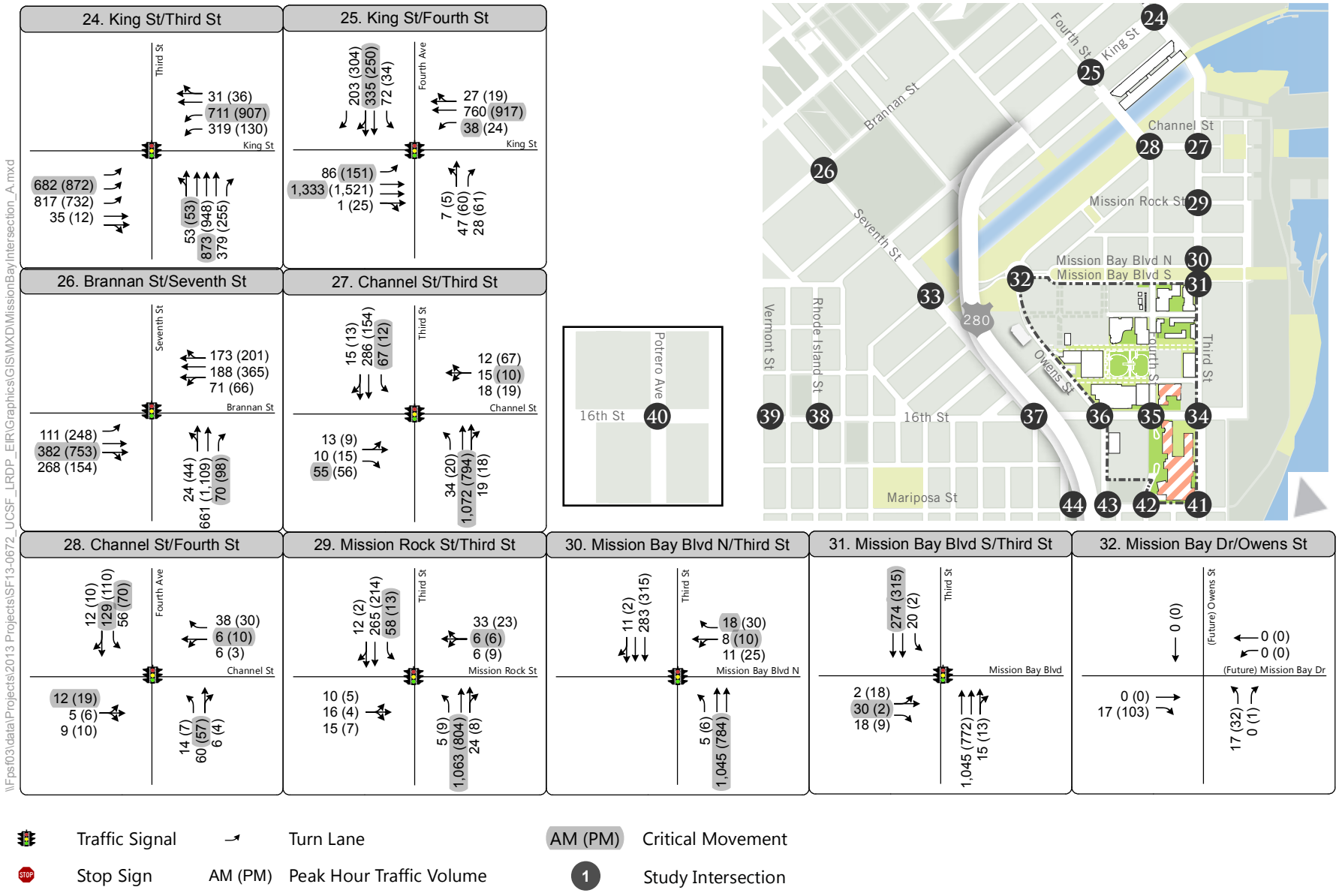


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Figure 2-8A

Existing Intersection Lane Configurations, Traffic Control, and Volumes- Mission Bay

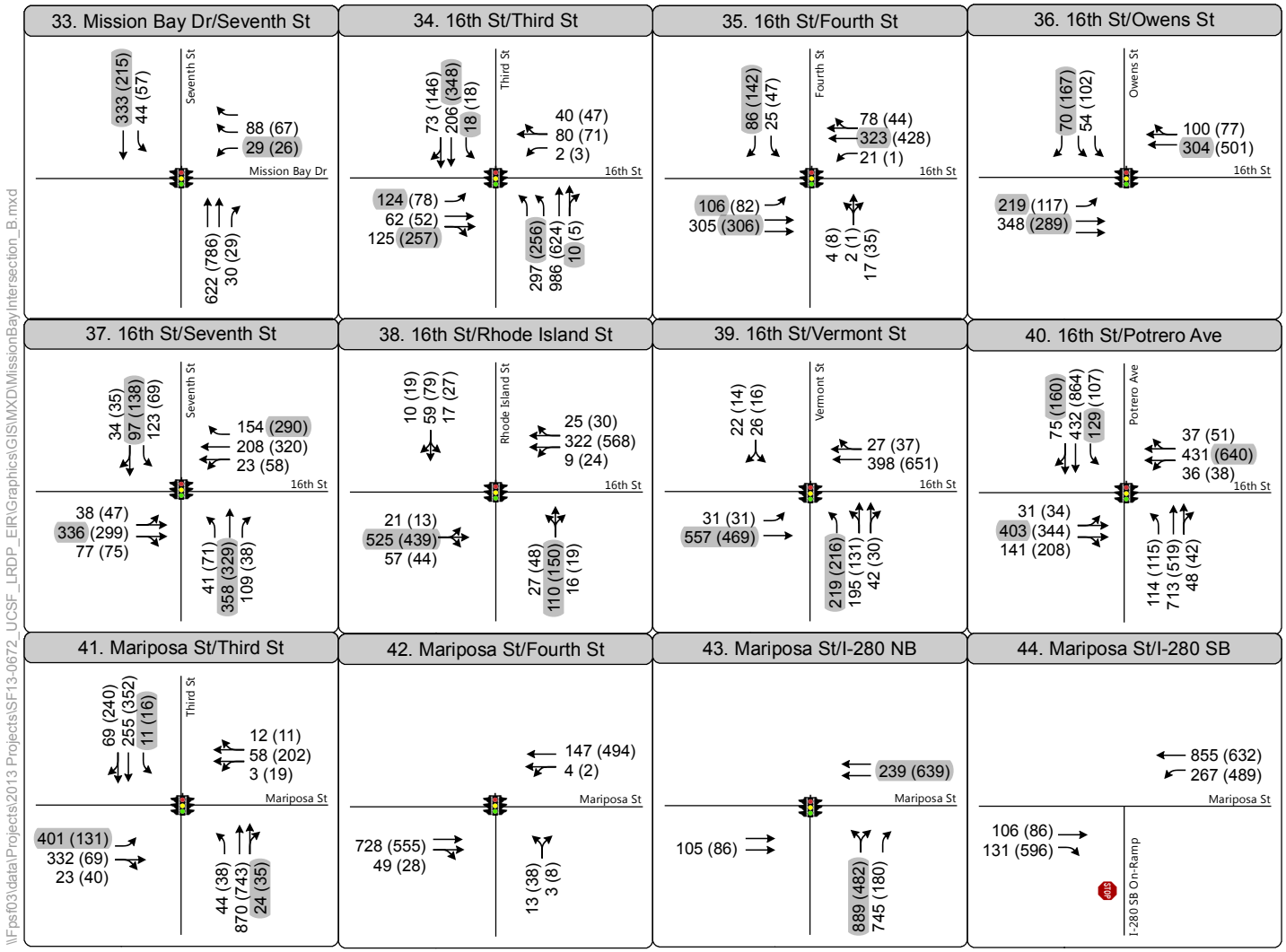

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Figure 2-8B

Existing Intersection Lane Configurations, Traffic Control, and Volumes-Mission Bay

As shown in **Table 2-11**, 18 of the 21 study intersections operate at an acceptable level of service (LOS D or better) during the AM peak hour and 19 operate at an acceptable level of service during the PM peak hour.

TABLE 2-11: EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Vehicle Delay[2] (seconds)	LOS[3]
24. King Street / Third Street	Signal	AM PM	46 **70**	D **E**
25. King Street / Fourth Street	Signal	AM PM	43 53	D D
26. Brannan Street / Seventh Street	Signal	AM PM	14 25	B C
27. Channel Street / Third Street	Signal	AM PM	40 30	D C
28. Channel Street / Fourth Street	Signal	AM PM	15 16	B B
29. Mission Rock Street / Third Street	Signal	AM PM	37 29	D C
30. Mission Bay Boulevard North / Third Street	Signal	AM PM	17 16	B B
31. Mission Bay Boulevard South / Third Street	Signal	AM PM	23 20	C B
32. Mission Bay Drive / Owens Street	Roundabout	AM PM	<10 <10	A A
33. Mission Bay Drive / Seventh Street	Signal	AM PM	20 22	B C
34. 16th Street / Third Street	Signal	AM PM	36 31	D C
35. 16th Street / Fourth Street	Signal	AM PM	26 27	C C
36. 16th Street / Owens Street	Signal	AM PM	32 30	C C
37. 16th Street / Seventh Street	Signal	AM PM	43 44	D D
38. 16th Street / Rhode Island Street	Signal	AM PM	15 13	B B
39. 16th Street / Vermont Street	Signal	AM PM	19 15	B B
40. 16th Street / Potrero Avenue	Signal	AM PM	27 35	C C
41. Mariposa Street / Third Street	Signal	AM PM	52 28	D C
42. Mariposa Street / Fourth Street	Signal	AM PM	<10 11	A B
43. Mariposa Street / I-280 Northbound Ramp	Signal	AM PM	**73** 31	**E** C

TABLE 2-11: EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Vehicle Delay[2] (seconds)	LOS[3]
44. Mariposa Street / I-280 Southbound Ramp	SSS	AM PM	**>50** **>50**	**F** **F**

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards

Source: Fehr & Peers, 2014.

The following intersections operate at LOS E or F during the AM or PM peak hours:

- King Street and Third Street (Intersection #24) operates at LOS E during the PM peak hour due to the high conflicting traffic volumes on the westbound through and eastbound left turning movements on King Street.
- Mariposa Street and the I-280 Northbound Off-Ramp (Intersection #43) operates at LOS E during the AM peak hour due to the volume of traffic exiting I-280 via the off-ramp.
- Mariposa Street and the I-280 Southbound On-ramp (Intersection #44) operates at LOS F during the AM and PM peak hours, respectively, due to the high conflicting volumes on east and westbound Mariposa Street attempting to access I-280 via the Southbound On-ramp.

2.4.3 Transit Network

The Mission Bay campus site is well-served by both local and regional public transit. Local service is provided by Muni bus and light rail lines. Regional service is provided by BART, AC Transit, Golden Gate Transit, SamTrans, and Caltrain. In addition, there are two shuttle systems that provide service to the Mission Bay campus site: the UCSF shuttle system, as discussed in sections 2.2.1 and 2.3.3.3, and two shuttle lines operated by the Mission Bay Transportation Management Association (MBTMA). These shuttles supplement Muni transit service and provide direct connections to UCSF-operated facilities throughout San Francisco and the Powell Street BART station. Approximately 19 percent of those traveling to and from the campus site use public transit, while another approximately 29 percent rely on UCSF shuttles to get to and from the campus site. **Figure 2-9** presents the transit routes in the vicinity of the campus site.

2.4.3.1 San Francisco Muni

Table 2-12 presents the Muni routes serving the campus site within an approximately half-mile walk and **Table 2-13** presents the peak hour muni ridership for these routes.

TABLE 2-12: LOCAL MUNI OPERATIONS - MISSION BAY

Route	AM Peak Weekday Headways (7-9AM)[1]	PM Peak Weekday Headways (4-6PM)[1]	Hours of Operation	Neighborhoods Served by Route	Nearest Stop Location	Distance to Campus Site (feet)
T Third Street	9	9	4:00AM – 1:30AM	Financial District, Visitacion Valley	Third Street and Gene Friend Way	0
10 Townsend	20	20	5:00AM – 8:30PM	Pacific Heights, Potrero Hill	De Haro Street and 16th Street	2,600
22 Fillmore	9	8	2:00AM – 2:00AM	Marina District, Dogpatch	Connecticut Street and 17th Street	2,000

Notes:
1. Headway in minutes.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

TABLE 2-13: PEAK HOUR MUNI RIDERSHIP - MISSION BAY

Route	AM Peak Ridership at MLP[1] (Inbound / Outbound)	AM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)[2]	PM Peak Ridership at MLP[1] (Inbound / Outbound)	PM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)[2]
T Third Street	735 347	**88%**[3] 42%	365 550	44% 77%
10 Townsend	141 165	75% **87%**[5]	186 171	**98%**[4] **90%**[6]
22 Fillmore	293 287	70% 68%	323 308	68% 65%

Notes:

1. Maximum load point, which is the point at which the route has the maximum number of passengers relative to capacity, is identified for those lines operating above or near 85 percent.
2. **Bold** indicates capacity utilization of 85 percent or greater, which is a typical crowding standard used by transit agencies.
3. MLP located at The Embarcadero/Brannan Street.
4. MLP located at Pacific Avenue/Powell Street.
5. MLP located at Pacific Avenue/Taylor Street.
6. MLP located at Second Street/Howard Street.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

Figure 2-9

Existing Transit Service-Mission Bay

2.4.3.1.1 Recent and Proposed Changes to Transit Service

Proposed changes to transit service in in the vicinity of the Mission Bay campus site include the currently under-construction Central Subway Project and proposed TEP route changes.

The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction of the underground segment from Bryant to Clay Street is currently underway, and the Central Subway will extend the T Third line northward from its current terminus at Fourth and King streets to a surface station south of Bryant Street and go underground at a portal under I-80. From there it will continue north to stations at Moscone Center, Union Square, where it will provide passenger connections to the Powell Street Station and BART—and in Chinatown, where the line will terminate at Stockton and Clay streets. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019. This project would improve transit service between the Mission Bay campus site and Downtown.

The following changes are proposed by the TEP for routes in the vicinity of the Mission Bay campus site.

- **T Third Street** – The TEP proposes reducing peak period headways from 9 to 8 minutes.
- **10 Townsend** – The TEP proposes to rename the 10 Townsend the 10 Sansome. Service would be rerouted off of Townsend down Fourth Street. From Fourth Street the route would extend through Mission Bay to new proposed street segments on Seventh Street between Mission Bay Boulevard and Irwin Street, on Irwin Street between Seventh and 16th streets, on 16th Street between Irwin and Connecticut streets, and on Connecticut Street between 16th and 17th streets. Peak period headways would be reduced from 20 to 6 minutes. Midday headways would be reduced from 20 to 12 minutes.
- **22 Fillmore** – The TEP proposes rerouting the 22 Fillmore to continue along 16th Street, creating new connections to Mission Bay from the Mission neighborhood. The proposed route change would add transit to 16th Street between Kansas Street and Third Street and Third Street between 16th Street and Mission Bay Boulevard North. The TEP also proposes to change the AM peak period headway, reducing from 9 minute to 6 minute headways.

  Additionally, the SFMTA has proposed two transit enhancement treatment visions for 16th Street, of which one or a combination of the two will be selected by the SFMTA Board prior to implementation. The treatments are referred to as the Moderate and Expanded Alternatives in the TEP EIR. The Moderate Alternative proposes a number of physical changes to the portion of the rerouted 22 Fillmore in the vicinity of the Mission Bay campus site including, but not limited to, new transit stops, relocated transit stops, and transit bulbs (approximately 45 feet in length), as well as new traffic signals at Connecticut and Missouri streets. The Expanded Alternative includes the features listed for the Moderate Alternative as well as the conversion of a lane of mixed-flow lane of traffic to a transit-only lane along 16th Street in both directions both within and in the vicinity of the campus site as well as the prohibition of left turns at Bryant, Potrero (westbound only), Utah, San Bruno, Kansas, Rhode Island, De Haro, Carolina, Wisconsin, Arkansas, Connecticut, and Missouri streets. Both alternatives would reduce peak period headways; AM would be reduced from 9 to 6 minutes, PM peak headways would be reduced from 8 to 5.5 minutes, and

midday headways would be reduced from 10 to 7.5 minutes. The stated purpose of both alternatives is to make the 22 Fillmore more frequent, reliable, and effective along 16th Street.

Prior to the extension of the 22 Fillmore into Mission Bay via either the Moderate or Expanded Alternative, which both require the extension of overhead wire, the SFMTA proposes to implement a temporary motor coach service to coincide with the opening of the Phase One Medical Center at Mission Bay between the campus site and the 16th Street BART Station until the 22 Filmore can be extended into Mission Bay. The preliminary name for this interim service is the Muni line '55 16th Street' which is shown in **Figure 2-10**. The route would follow 16th Street between Mission Street to Third Street and Third Street from 16th Street to Mission Bay Boulevard North. The preliminarily proposed locations for new bus stops for this service in the vicinity of the campus site are on 16th Street at Fourth Street (both directions) and on Third Street just south of Mission Bay Boulevard South (southbound direction). The operating hours and service frequencies of the proposal have not yet been made public at the time of publication of this document.

2.4.3.2 Regional Transit Service

Table 2-14 presents the regional transit routes serving the Mission Bay campus site and route characteristics as of December 2013, including service frequencies during the weekday morning and evening peak periods, hours of operations and neighborhoods served.

Golden Gate Transit, AC Transit, SamTrans, and BART riders would transfer to Muni to access the Mission Bay campus site. The Caltrain station closest to the Mission Bay campus site is located at Fourth and King streets, which is six blocks (approximately 2/3 mile) from the campus site. Caltrain service headways during the AM and PM peak periods are between 10 and 20 minutes for the peak direction, depending on the type of train (e.g., local, limited, or express "Baby Bullet"). The peak direction of service is southbound in the AM peak period and northbound in the PM peak period. Headways in the non-peak direction are typically once per hour. In addition, the 22nd Street station is located directly underneath I-280 four blocks (approximately 3/4 mile) from the campus site and is served by local, limited, and "Baby Bullet" trains.

Caltrain is proposing to implement a Modernization Program that will electrify the railway to provide upgraded performance and allow more efficient operations and a higher capacity. The Program is scheduled to be complete by 2019. Currently Caltrain crosses 16th Street at grade at the intersection of 16th Street/Seventh Street/Mississippi streets. There are currently 10 trains per hour during peak periods and the Modernization Program will allow the number of trains to increase to 12 trains per hour. Additionally, Caltrain is anticipating a "blended system" which will see California High Speed Rail trains running alongside Caltrain on the same tracks. The blended system may require a grade separation at 16th/Seventh/Mississippi streets. Electrification of Caltrain (and the associated improved travel times and frequencies) as well as the introduction of High Speed Rail may improve regional transit access to the Mission Bay campus site.

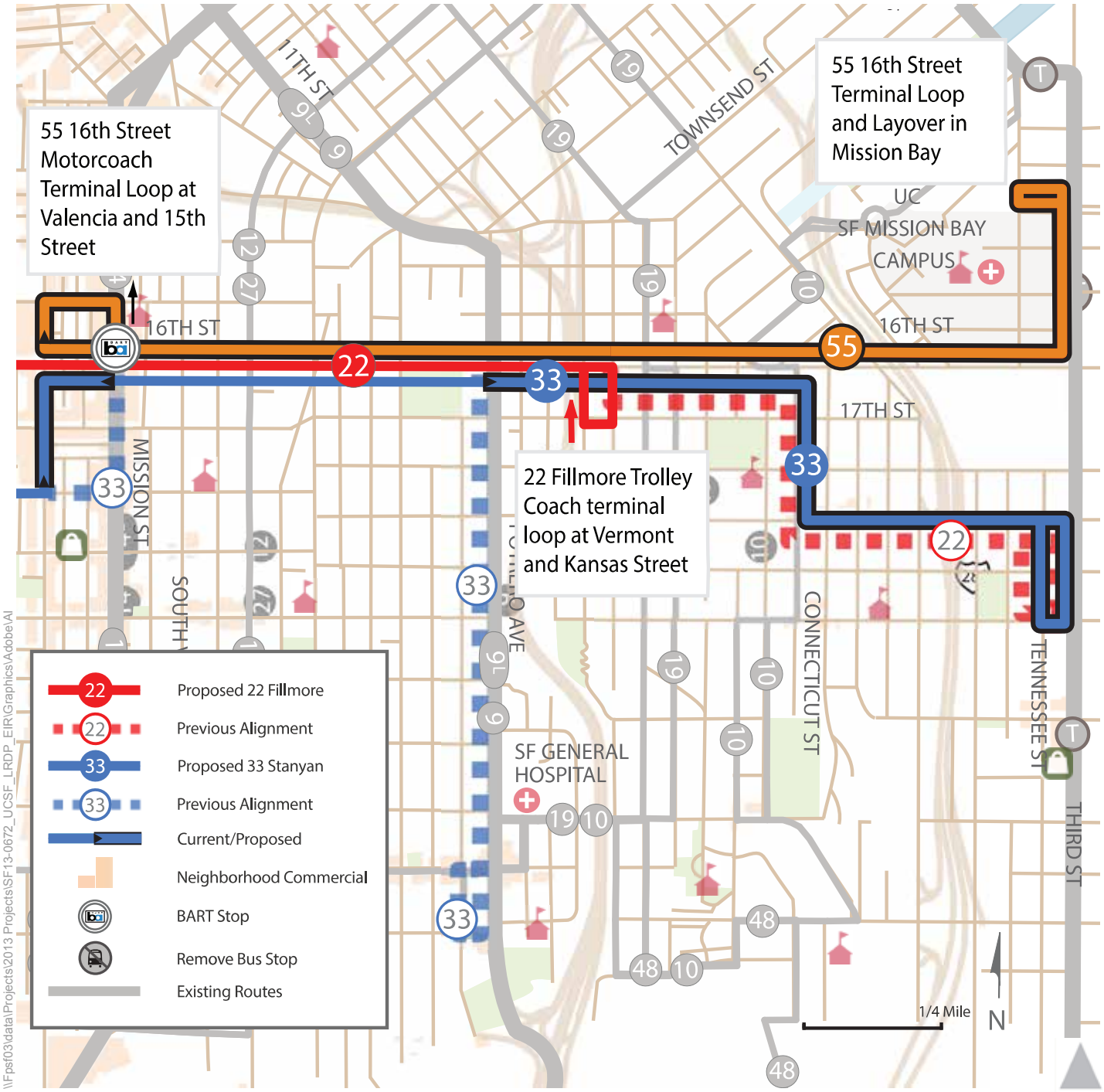


Figure 2-10

Muni Line '55' Interim Service Proposal

TABLE 2-14: REGIONAL TRANSIT OPERATIONS - MISSION BAY

Route	AM Peak Weekday Headways (7AM-9AM)[1]	PM Peak Weekday Headways (4PM-6PM)[1]	Hours of Operation	Areas Served by Route	Nearest Stop Location	Distance to Campus Site
Caltrain Local	-	-	4:30AM-12:01AM (IB) 4:55AM-1:32AM (OB)	San Francisco, San Jose	Fourth / King	0.6 miles
Caltrain Limited-Stop	10-20	20-60	5:50AM-8:00PM (IB) 6:11AM-8:19PM (OB)	San Francisco, San Jose	Fourth / King	0.6 miles
Caltrain Baby Bullet	10-40	20-40	5:45AM-7:24PM (IB) 6:57AM-7:39PM (OB)	San Francisco, San Jose	Fourth / King	0.6 miles
BART	5-15	5-15	4:00AM-12:00AM (IB/OB)	East Bay, San Francisco, San Mateo County	16th / Mission	1.5 miles
AC Transit	15-20	15-20	12:00AM-12:00AM(IB/OB)	East Bay, San Francisco	Beale between Folsom / Howard	1.5 miles
SamTrans Route 292	10-15	20	3:55AM-2:28AM (IB) 4:30AM-12:00AM (OB)	San Mateo County, SFO, San Francisco	Potrero / 24th	1.3 miles
GGT commuter and basic bus routes	15-90	15-90	4:01AM-12:41AM (IB) 5:06AM-2:28AM (OB)	North Bay, San Francisco	Seventh / Folsom	1.1 miles

Notes:

1. Headway in minutes.

Source: Caltrain, BART, AC Transit, SamTrans, GGT; Prepared by Fehr & Peers, 2013.

2.4.3.3 UCSF Shuttle System

Table 2-15 summarizes the UCSF shuttle routes serving the campus site. Shuttles to and from the Mission Bay campus site stop at shuttle zones along Fourth Street in front of the Koret Quad and in front of the parking lot located near Campus Way, as shown on **Figure 2-9**. These stops are designated by UCSF Transportation Services and reviewed/approved by SFMTA. UCSF shuttles were not observed to interfere with Muni operations at the Mission Bay campus site.

UCSF shuttle stop at Mission Bay campus site.

TABLE 2-15: UCSF SHUTTLES - MISSION BAY				
Route	**Campuses Served**	**Hours of Operation**	**Headways (minutes)[1]**	**Average Weekday Boardings**
Gold	Parnassus-Mt. Zion-Mission Bay-SFGH	5:45 AM – 9:25 PM	15/20	924
Blue	Parnassus-SFGH-Mission Bay-Mt. Zion	5:35 AM – 8:47 PM	15/20	996
Grey	Parnassus-Mission Bay	6:30 AM – 10:00 PM	20	1,470
Red	Mission Bay-MCB-16th BART	5:55 AM – 7:45 PM	10/15	808
Green	Mission Bay-China Basin-654 Minnesota	6:25 AM – 6:40 PM	15	499

Notes:

1. Multiple values indicate variability in headways during the day.

Sources: UCSF Campus Life Services Transportation, Routes & Timetables, 2014; Ridership data from *UCSF Shuttle Operations Study, Final Report*, January 2014, prepared by Nelson Nygaard.

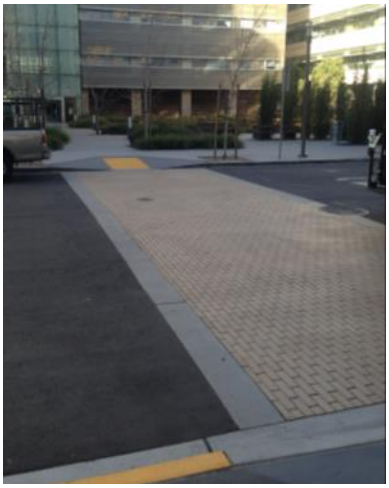
2.4.3.4 Mission Bay Transportation Management Association

The Mission Bay Transportation Management Association (MBTMA), formed several years ago in conformance with mitigation measures identified in the Mission Bay Plan SEIR, provides two shuttle bus route services (east and west) between Mission Bay and the Powell Street BART Station and the Fourth/King Caltrain Station; they are free of charge and open to all employees, residents, and visitors to the Mission Bay Area and the China Basin building at 185 Berry Street. The west route serves Seventh and Owens streets, while the east route serves Fourth Street and Mission Bay Boulevard; both operate at 15-minute intervals from 7:00 to 10:00 AM and 3:45 to 8:15 PM.

2.4.4 Pedestrian Circulation

Approximately six percent of those traveling to and from the campus site walk.

Due to the developing nature of the Mission Bay neighborhood, pedestrian volumes are currently relatively low surrounding the campus site. Pedestrian activity is generally higher towards the center of the campus site along Fourth Street and the many pedestrian alleyways and plazas such as Gene Friend Way and Campus Way. Pedestrian counts indicate that approximately 240 pedestrians cross at Fourth Street and Campus Way during the AM and PM peak hours. Pedestrian activity is also higher around transit hubs such as the UCSF shuttle stop on Fourth Street south of Gene Friend Way and the T Third Street light rail stops on Third Street at Gene Friend Way.



Decorative mid-block crosswalks decrease pedestrian walking distances on large blocks

Within the campus site area, sidewalks generally exist on both sides of the street in most locations, and are generally 12 to 15 feet wide. There are sidewalks gaps along roadway frontages of the campus site that are currently under construction including the south site of 16th Street between Seventh and Third streets and the west side of Third Street between 16th and Mariposa streets. These sidewalk gaps will be closed upon completion of construction of the adjacent buildings. All intersections surrounding the

campus site include standard painted crosswalks and directional curb ramps. Pedestrian median refuges are provided along Fourth Street to slow traffic and reduce the pedestrian exposure time while crossing the street. Pedestrian signals with count down timers are provided at all signalized intersections. In addition, to the on-street pedestrian facilities, there are numerous public pedestrian alleyways and plazas that reduce the size of the city blocks for pedestrians. This provides a fine-grained pedestrian oriented network and reduces pedestrian walking distances throughout the campus site.

2.4.5 Bicycle Circulation

The topography within and around the Mission Bay campus site is flat, which facilitates easy bicycle travel. Approximately seven percent of those traveling to and from the campus site bike. This is approximately three times greater than the bicycling mode share throughout San Francisco. Several bikeways run within the vicinity of the campus site, as shown in **Figure 2-11**.

The following bicycle facilities are located within or near the Mission Bay campus site:

King Street is part of San Francisco Bike Route Five and is a short east-west bike route that travels in front of AT&T Park between Second and Third streets with Class II bicycle lanes. The bike lane ends mid-way between Second and Third streets and turns into a Class III facility with sharrow markings. The route ends at Third Street.

16th Street is part of San Francisco Bike Route 40 and is an east-west bike route that extends from Terry A Francois Boulevard to Kansas Street. Between Third Street and Kansas Street, 16th Street has Class II bicycle lanes in both directions. Between Terry A Francois Boulevard and Third Street, 16th Street is currently designated as a Class III bicycle facility, and will be upgraded to a Class II facility as a part of the Mission Bay South Infrastructure Plan.

Figure 2-11

Existing Bicycle Facilities-
Mission Bay

Mariposa Street is part of San Francisco Bike Routes 7 and 23 and is an east-west bike route that extends from Illinois Street to Mississippi Street as a Class III bicycle facility with sharrow markings. At its eastern terminus, Mariposa Street connects to the Class II bicycle lanes on Terry A Francois Boulevard, while on its western terminus it connects to the Class II bicycle lanes that continue north on Mississippi Street.

Third Street is part of San Francisco Bike Route 5 and is a short north-south bike route that extends from King Street to Terry A Francois Boulevard and is designated as a Class III bicycle facility with sharrows. At its southern terminus, Third Street connects to the Class II bicycle lanes on Terry A Francois Boulevard.

Fourth Street is a north-south bike route that extends from Berry Street to 16th Street. Fourth Street is designated as a Class III bicycle facility as it crosses Mission Creek until Channel Street, south of which it has Class II bicycle lanes. The Fourth Street bikes lanes provide the primary bicycle access through the Mission Bay campus site.

Seventh Street is part of San Francisco Bike Route 23 and is a north-south bike route that extends from Brannan Street to 16th Street with Class II bicycle lanes.

Bike lanes on Fourth Street through the center of Mission Bay campus site.

Mississippi Street is part of San Francisco Bike Route 23 and is a north-south bike route that extends from 16th Street to Mariposa Street with Class II bicycle lanes.

Mission Bay Drive is a east-west bike route that extends from the Mission Bay Circle to Seventh Street. It is designated as a Class II bicycle facility that provides bicycle access across the Caltrain tracks into the Mission Bay campus site. The *San Francisco Bike Plan* (June 2009) ("Bike Plan") includes a planned bikeway near/along Mission Creek between Fourth Street and Harrison Street, which is listed as a long-term project in the Bike Plan.

Bicycle counts indicate the most popular bicycling route through the campus site is Fourth Street, where between 40 and 50 bicyclists were observed during the AM and PM peak hours. Campus Way is also a popular connection into the campus site from 16th Street with 10-20 bicyclists observed crossing Owens Street at Campus Way during the AM and PM peak hours.

Bicycle racks are provided throughout the Mission Bay Campus Site in front of campus buildings, on-street, and within the Community Center garage on Owens Street. Popular bicycle parking locations such as the gym were observed to be nearly fully occupied during a site visit in February 2014. In an effort to increase bike parking here at the Mission Bay Campus Site to meet the growing demand, while also taking into account the feedback received from bicyclists, UCSF has since redesigned and expanded the bike parking throughout the campus site. This included new racks that double the amount of bike parking available in each area of installation, while providing equal access to all bicycle frame shapes and sizes.

2.4.6 Loading Conditions

Commercial loading zone on Nelson Rising Lane.

The Mission Bay campus site has both service vehicle and passenger loading. There are six off-street service vehicle loading facilities serving the existing uses on the campus site, and summarized in **Table 2-16** and shown in **Figure 2-12**. Passenger and service vehicles may also load on-street at marked zones on Fourth Street, Nelson Rising Lane, Mission Bay Boulevard South, and adjacent to the Gladstone Institutes building.

Based on 2010 monthly security data, the Helen Diller Cancer Research building receives approximately 100 deliveries each month, resulting in approximately three to four deliveries per day. The four loading spaces are sufficient for existing operations. On occasion, the Rutter Center requires deliveries of materials for special events, but on average this is no more than one additional truck delivery per day of the event, which is accommodated in the existing loading spaces. Daily deliveries are typical for the Café and laundry services for the recreation center, resulting in a minimum of three deliveries per day. The two loading spaces are sufficient for existing operations.

The loading area at Genentech Hall, receives approximately 20 deliveries each day for Genentech Hall and the adjacent Byers Hall. The six parcel spaces are comprised of four dock spaces and two small delivery van spaces. Based on the existing delivery operations, the six spaces are sufficient for current operations.

In general, existing loading areas provide a sufficient amount of space for passenger and vehicle loading based on feedback from UCSF Facilities Services. No delivery vehicles were observed double parking or using other facilities. Some passenger loading vehicles used empty metered parking spots for pick-up and/or drop-off because of proximity to destination.

Future loading areas may be provided at the Research CUP/EH&S Building. The Third Street Garage may include some loading spaces which are currently used for permit parking and UCPD emergency supplies. Mission Hall is not anticipated to include an off-street loading area. UCSF Facility Services assume Campus Lane, an adjacent private street, will be marked with loading areas similar to the on-street loading zones on Nelson Rising Lane.

TABLE 2-16: PASSENGER AND VEHICLE LOADING INFORMATION- MISSION BAY

Building / Location	Loading Areas (Passenger or Vehicle)	# Vehicle Loading Spaces and Type	# Passenger Loading Spaces
Smith Cardiovascular Research	Vehicle	4 parcel/truck spaces	--
Helen Diller Cancer Research	Vehicle	4 parcel/truck spaces	--
Sandler Neurosciences Center	Vehicle	2 parcel/truck spaces	--
Mission Bay Housing	Vehicle (Compactors Only[1])	--	--
Rutter Center	Vehicle	2 parcel/truck spaces	--
Genentech Hall	Vehicle	6 parcel/truck spaces	--
On-Street Fourth Street	Vehicle/Passenger	75 feet (3 spaces)	100 feet (4 spaces)
On-Street Nelson Rising Lane	Vehicle/Passenger	260 feet (10 spaces)	220 feet (10 spaces)
On-Street Mission Bay Boulevard South	Passenger	--	80 feet (4 spaces)
On-Street Adjacent to Gladstone Institutes building	Vehicle	100 feet (4 spaces)	--

Notes:

1. Vehicle loading used for compactors, loading area prohibits passenger and delivery vehicles.

Source: UCSF, 2013

Figure 2-12

Existing Parking and Loading Locations-Mission Bay

2.4.7 Parking Conditions

2.4.7.1 On-Street Parking

Most on-street parking provided in the vicinity of the Mission Bay campus site is regulated with a combination of two-hour, four-hour and unlimited time meters; exceptions include portions of Terry François Boulevard, Mission Bay Boulevard North and South, 16th Street, and Mariposa Street. Parking limits are generally in effect between 9 AM and 6 PM, with longer hours (until 10 PM). Parking is prohibited on 16th Street, west of Third Street; in addition, portions of Mariposa and Illinois Streets have baseball game-day-only tow-away parking prohibitions.

Mission Bay experiences a high parking utilization on most streets, including those with lower time limits. The streets which are surrounded by finished construction and occupied buildings have low parking availability, especially on weekday days. On other streets where parking demand is managed by two-hour time limits, too few of the parking spaces are used, which is an inefficient use of the existing parking supply. SFMTA through its SFPark program is implementing changes to the parking rates and time limits in the Mission Bay and Dogpatch neighborhoods to better manage and operate the existing on-street parking supply.

Table 2-17 summarizes the on-street parking supply and occupancy from parking surveys conducted along 16th Street, Mission Bay Boulevard, Fourth Street, Mission Rock Street, China Basin Street and Terry A. François Boulevard, in August 2011 and September 2013 on weekday mid-morning (9 to 11 AM), midday (1:30 to 3 PM) and late evening (6:30 to 8 PM) periods, including during an evening baseball game at AT&T Park. Overall street parking occupancy during the mid-morning is 48 percent and 89 percent during the midday period, while the late evening period occupancy is 61 percent during a baseball game, and 24 percent on a no-event day. Although, as expected, the street parking occupancy in the late evening is higher when a game takes place at AT&T Park, it is not as high as during the midday, which represents the peak parking demand period.

TABLE 2-17: MISSION BAY EXISTING ON-STREET PARKING SUPPLY AND OCCUPANCY [1]

Street Location	Overall Supply (spaces)	Occupancy			
		Mid-Morning [2]	Midday	Late Evening	Late Evening with SF Giants Game
T. François Blvd, from MB Blvd to 16th St	144	55%	88%	16%	40%
Fourth St, bet. Mission Rock St & 16th St	71	30%	89%	8%	77%
Mission Rock St, from Third St to Fourth St	25	49%	84%	20%	72%
China Basin St, from Third St to Fourth St	57	22%	88%	32%	53%
MB Blvd, from T. François Blvd to Fourth St	73	53%	92%	47%	84%
16th St, east of Third St	40	90%	90%	35%	68%
Total	**410**	**48%**	**89%**	**24%**	**61%**

Notes:

1. Data collected in September 2013, except as noted.
2. Data collected by SFMTA in August 2011.

Source: Adavant Consulting, Fehr & Peers, SFMTA

2.4.7.2 Off-Street Parking

The Mission Bay campus site currently has almost 1,600 parking spaces located in the 1630 Third Street Garage, the Community Center Garage (1675 Owens Street), and in three surface parking lots. They all offer a combination of public, patient, and UCSF-only permitted parking spaces. Additional off-street public parking is available nearby at the 1670 Owens Street Garage (about 800 spaces) and at the 450 South Street Garage (approximately 1,400 spaces), both owned by Alexandria Real Estate, Inc.

Table 2-18 summarizes the off-street parking supply and occupancy from parking surveys conducted in March and September 2013 on weekday morning (6:30 to 8:30 AM), midday (11:30 AM to 1:30 PM), and evening (3:30 to 5:30 PM) periods. Parking occupancy was also collected at two of the parking facilities during the late evening (6:30 to 8 PM) during an evening baseball game at AT&T Park.

TABLE 2-18: MISSION BAY EXISTING OFF-STREET PARKING SUPPLY AND OCCUPANCY [1]

Parking Facility	Overall Supply (spaces)	Occupancy			
		Morning	Midday	Evening	Late Evening with SF Giants Game
UCSF Facilities					
1630 Third Street Garage	732	43%	92%	68%	76%
Community Center (1675 Owens St) Garage	593	30%	78%	66%	--
Surface Parking Lots [2]	254	55%	81%	65%	--
Total UCSF Facilities	**1,579**	**40%**	**85%**	**67%**	**76%**
Other Parking Facilities					
450 South Street Garage	1,400	4%	77%	26%	18%
1670 Owens Street Garage	800	6%	22%	17%	--
Total Other Parking Facilities	**2,200**	**5%**	**57%**	**23%**	**18%**
All Facilities	**3,779**	**19%**	**69%**	**41%**	**38%**

Notes:

1. Data collected in March and September 2013.
2. Includes the west side of Block 23, the Orthopedic Institute west of Owens St, and the Child Care Center. Mostly reserved to UCSF faculty, staff and patients.

Source: Adavant Consulting, Fehr and Peers, UCSF

Overall off-street parking occupancy during the morning period is 19 percent and 69 percent during the midday period, while the overall occupancy in the evening is 41 percent. The overall parking occupancy at the UCSF parking facilities is substantially higher than at the other garages, reaching 85 percent at midday, the peak parking demand period. An occupancy above 90 percent, such as at the Third Street garage, typically represents that the facility has reached its effective capacity. Similar to the street parking occupancy conditions described in the previous section, the off-street parking occupancy in the late evening when a game takes place at AT&T Park is not as high as during the midday period.

2.5 MOUNT ZION CAMPUS SITE

2.5.1 Roadway Facilities

The Mount Zion campus site is located at the crossroads of San Francisco between the more modestly-scaled neighborhoods of the Richmond District to the west and more downtown-scaled areas to the east. As such, the roadways serving the campus site are primarily east-west corridors – Geary Boulevard, Pine Street, and Bush Street. Primary north-south access to the campus site is provided via Divisadero Street. The primary vehicular entrances to parking and loading areas for the campus site are located along Sutter Street and Post Street between Broderick Street and Divisadero Street, along Geary Boulevard between Divisadero Street and Scott Street, and along Scott Street between Geary Boulevard and Post

Street. Approximately 60 percent of those traveling to and from the campus site drive alone, are dropped off, or carpool/vanpool. The street network providing access to the Mount Zion campus site is shown in **Figure 2-2**.

2.5.1.1 Regional Access

Regional access to the Mount Zion campus site is provided by several major regional freeways, as discussed below.

I-80 is a six-lane freeway located approximately two miles southeast of the campus site and connects San Francisco to the East Bay and other points east via the San Francisco-Oakland Bay Bridge. I-80 connects to U.S. 101 east of the Mount Zion campus site.

U.S. 101 is an eight-lane freeway located approximately one mile east of the Mount Zion campus site. U.S. 101 connects San Francisco with the peninsula and the South Bay to the south and with the North Bay to the north via the Golden Gate Bridge. U.S. 101 connects to I-80 east of the campus site. Within the northern part of San Francisco, U.S. 101 operates on surface streets (i.e., Van Ness Avenue and Lombard Street). Van Ness Avenue and Lombard Street are part of the Citywide Pedestrian Network outlined in the Transportation Element of the *San Francisco General Plan* and are located one mile east and one mile north of the campus site, respectively.

2.5.1.2 Local Access

Local access to the Mount Zion campus site is provided by an urban street grid network. Key local roadways through the campus site are discussed in detail below and defined according to roadway classifications identified in the San Francisco General Plan Transportation Element.

Geary Boulevard is a six-lane east-west arterial that extends from Gough Street to 48th Avenue. The City classifies this arterial as a Major Arterial, a Neighborhood Commercial Street, and a Primary Transit Important Street. From Steiner Street to Baker Street (within the campus area) the roadway has a center median with foliage. On-street parking is provided on both sides of the street within the vicinity of the campus site. The 38 Geary, 38L Geary Limited, and Golden Gate Transit bus lines operate in both directions along Geary Boulevard, while the NX Judah Express operates only in the westbound direction during weekday peaks.

Pine Street is a three-lane, one-way westbound roadway that extends from Market Street to Presidio Avenue. The City classifies this roadway as a Major Arterial. It is also designated as part of the Neighborhood Pedestrian Street network between Scott Street and Divisadero Street. Pine Street is the westbound component of the Pine/Bush Street one-way couplet. On-street parking is provided on both sides of the street. The 1AX California A Express, 31AX Balboa A Express, 31BX Balboa B Express, 38AX Geary A Express, and 38BX Geary B Express bus lines utilize Pine Street to travel from Market Street to northwestern San Francisco neighborhoods.

Bush Street is a three-lane, one-way eastbound roadway that extends from Davis Street to Presidio Avenue. The City classifies this roadway as a Major Arterial. It is also designated as part of the Neighborhood Pedestrian Street network between Scott Street and Divisadero Street. Bush Street is the eastbound component of the Pine/Bush Street one-way couplet. On-street parking is provided on both sides of the street. The 1AX California A Express, 31AX Balboa A Express, 31BX Balboa B Express, 38AX

Geary A Express, 38BX Geary B Express, and NX Judah Express bus lines utilize Bush Street to travel from northwestern San Francisco neighborhoods to Market Street.

Divisadero Street is a four-lane north-south roadway that extends from Marina Boulevard to 14th Street. The City classifies this roadway as a Major Arterial between Pine Street and Lombard Street, a Secondary Arterial between Castro Street and California Street, and a Secondary Transit and Neighborhood Commercial Street between Haight Street and California Street. On-street parking is provided on both sides of the street. The 24 Divisadero bus line operates in both directions along Divisadero Street between Jackson Street and Waller Street, providing transit service between Pacific Heights and Bayview.

Sutter Street is a two-lane east-west roadway that travels from Market Street to Presidio Avenue. The City classifies this roadway as a Transit Conflict and a Secondary Transit Preferential Street. It is also designated as part of the Neighborhood Pedestrian Street network between Scott Street and Divisadero Street. On-street parking is provided on both sides of the street. The 2 Clement bus line operates in both directions along Sutter Street within the campus site, but only travels westbound on Sutter Street between Laguna Street and Market Street.

Post Street is a two-lane east-west Local Street that extends from Market Street to Presidio Avenue. On-street parking is provided on both sides of the street. The City classifies this roadway as a Secondary Transit Preferential Street. It is also designated as part of the Neighborhood Pedestrian Street network between Piece Street and Divisadero Street. Post Street is part of Bike Route 16 and has Class II bicycle lanes in both directions between Presidio Avenue and Steiner Street, west of which turns into a Class III bicycle route.

Pierce Street is a two-lane north-south Local Street that extends from Clay Street to Post Street. On-street parking is provided on both sides of the street**.**

Scott Street is a two-lane north-south Local Street that extends from Marina Boulevard to Duboce Avenue. On-street parking is provided on both sides of the street, with 45-degree parking on the southbound side of Scott Street between Sutter Street and Post Street.

Broderick Street is a two-lane north-south Local Street that extends from Marina Boulevard to Waller Street. On-street parking is provided on both sides of the street, with parking at 90-degrees between Sutter Street and Post Street. Broderick Street is designated as a Class III bicycle route between Clay Street and Post Street.

2.5.2 Intersection Operating Conditions

The following 16 campus site area intersections were selected for analysis through consultation with UCSF Campus Planning and San Francisco Planning Department staff. These study intersections are shown in **Figure 2-2**.

45. Pine Street/Divisadero Street
46. Bush Street/Broderick Street
47. Bush Street/Divisadero Street
48. Bush Street/Scott Street
49. Bush Street/Pierce Street
50. Sutter Street/Broderick Street
51. Sutter Street/Divisadero Street
52. Sutter Street/Scott Street
53. Sutter Street/Pierce Street
54. Post Street/Broderick Street
55. Post Street/Divisadero Street
56. Post Street/Scott Street
57. Post Street/Pierce Street
58. Geary Boulevard/Broderick Street
59. Geary Boulevard/Divisadero Street
60. Geary Boulevard/Scott Street

Figure 2-13A and **Figure 2-13B** display the existing AM and PM peak hour traffic volumes, lane configurations and traffic controls at each of the 16 study intersections. Intersection turning movement counts at the study intersections were collected in May 2013 on mid-week and non-holiday days when schools were in session. Intersection turning movement count sheets are provided **in Appendix D**.

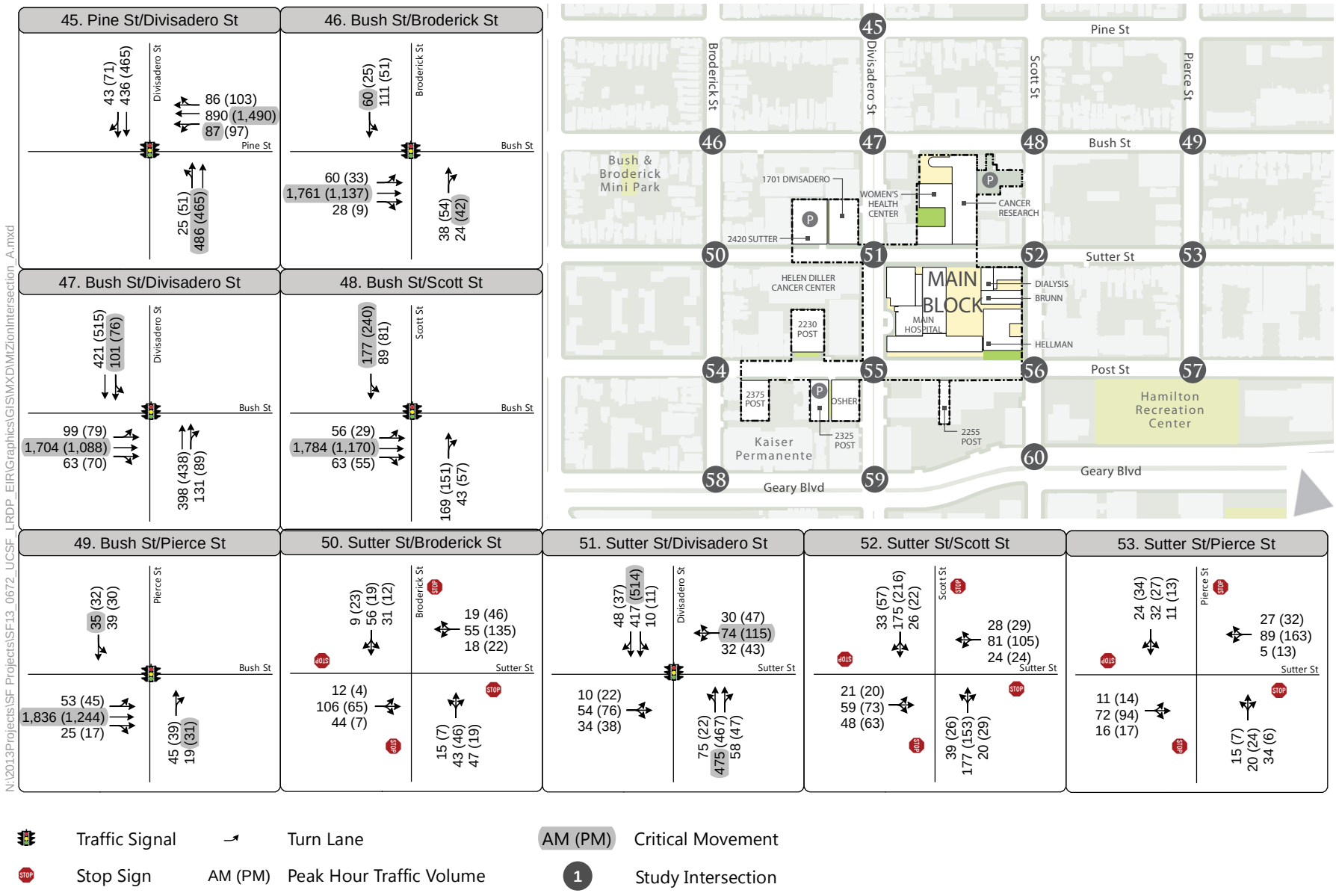


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Figure 2-13A

Existing Intersection Lane Configurations, Traffic Control, and Volumes-Mount Zion

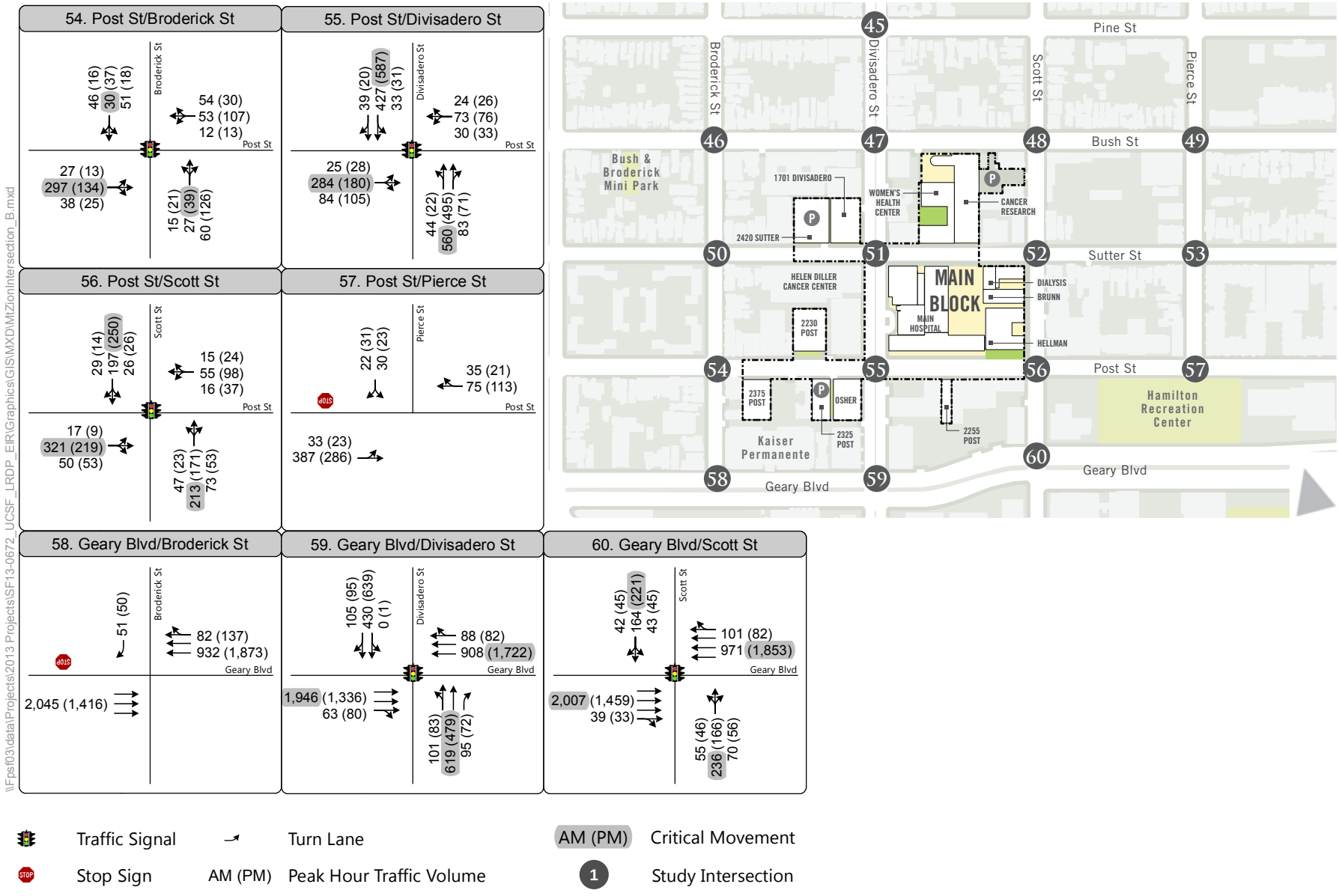

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Figure 2-13B

Existing Intersection Lane Configurations, Traffic Control, and Volumes-Mount Zion

As shown in **Table 2-19**, all of the study intersections operate at an acceptable level of service (LOS D or better) during both the AM and PM peak hours.

TABLE 2-19: EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE - MOUNT ZION

Intersection	Traffic Control[1]	Peak Hour	Vehicle Delay[2] (seconds)	LOS[3]
45. Pine Street / Divisadero Street	Signal	AM PM	14 32	B C
46. Bush Street / Broderick Street	Signal	AM PM	17 11	B B
47. Bush Street / Divisadero Street	Signal	AM PM	48 18	D B
48. Bush Street / Scott Street	Signal	AM PM	30 17	C B
49. Bush Street / Pierce Street	Signal	AM PM	30 15	C B
50. Sutter Street / Broderick Street	AWS	AM PM	<10 / <10 <10 / <10	A / A A / A
51. Sutter Street / Divisadero Street	Signal	AM PM	12 12	B B
52. Sutter Street / Scott Street	AWS	AM PM	10 / 11 11 / 12	B / B B / B
53. Sutter Street / Pierce Street	AWS	AM PM	<10 / <10 <10 / <10	A / A A / A
54. Post Street / Broderick Street	Signal	AM PM	14 12	B B
55. Post Street / Divisadero Street	Signal	AM PM	17 14	B B
56. Post Street / Scott Street	Signal	AM PM	17 15	B B
57. Post Street / Pierce Street	SSS	AM PM	12 11	B B
58. Geary Boulevard / Broderick Street	SSS	AM PM	15 17	B C
59. Geary Boulevard / Divisadero Street	Signal	AM PM	34 30	C C
60. Geary Boulevard / Scott Street	Signal	AM PM	21 20	C B

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards

Source: Fehr & Peers, 2014.

2.5.3 Transit Network

The Mount Zion campus site is well-served by public transit, both local and regional. Local service is provided by Muni bus lines. Regional service is provided by BART, AC Transit, Golden Gate Transit, SamTrans, and Caltrain. UCSF supplements Muni transit service with its own shuttle system that provides direct connections to UCSF-operated facilities throughout San Francisco. In many cases, these shuttles provide a direct transit alternative between two campus sites that would otherwise require a transfer between two or more Muni routes. Approximately 25 percent of those traveling to and from the campus site use public transit, while another six percent rely on UCSF shuttles to get to and from the campus site. **Figure 2-14** presents the transit routes in the vicinity of the campus site.

2.5.3.1 San Francisco Muni

Table 2-20 presents the Muni routes serving the campus site within a quarter-mile walk and **Table 2-21** presents the peak hour muni ridership for these routes.

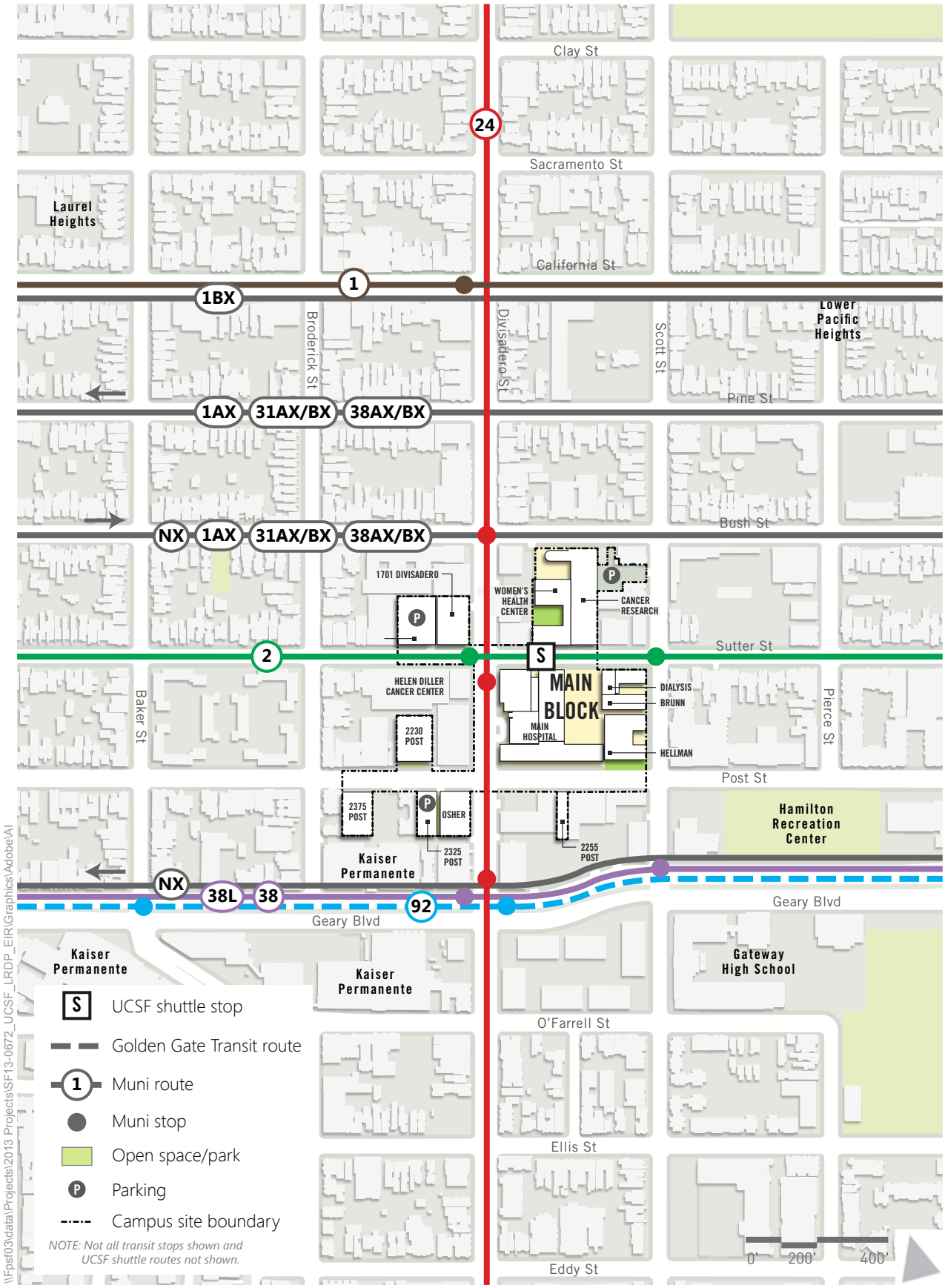


Figure 2-14

Existing Transit Service-Mount Zion

TABLE 2-20: LOCAL MUNI OPERATIONS - MOUNT ZION

Route	AM Peak Weekday Headways (7-9AM)[1]	PM Peak Weekday Headways (4-6PM)[1]	Hours of Operation	Neighborhoods Served by Route	Nearest Stop Location	Distance to Campus Site (feet)
1 – California	7	7	4:45AM – 1:30AM	Financial District, Richmond District	California Street / Divisadero Street	1,200
2 – Clement	12	12	5:00AM – 8:00PM	Financial District, Richmond District	Sutter Street / Divisadero Street	0
24 - Divisadero	10	10	2:00AM – 2:00AM	Pacific Heights, Bayview	Sutter Street / Divisadero Street	0
38 – Geary	6.5	6.5	2:00AM – 2:00AM	Financial District, Richmond District	Geary Boulevard / Divisadero Street	700
38L – Geary Limited	5.5	5.5	6:00AM – 8:45PM	Financial District, Richmond District	Geary Boulevard / Divisadero Street	700

Notes:

1. Headway in minutes.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

TABLE 2-21: PEAK HOUR MUNI RIDERSHIP - MOUNT ZION				
Route	**AM Peak Ridership at MLP[1] (Inbound / Outbound)**	**AM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)**	**PM Peak Ridership at MLP[1] (Inbound / Outbound)**	**PM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)**
1 – California	857 583	79% 54%	600 909	56% 84%[2]
2 – Clement	245 120	78% 38%	170 260	54% 83%[3]
24 - Divisadero	270 144	71% 38%	174 276	46% 73%
38 – Geary	230 195	49% 41%	352 450	47% 64%
38L – Geary Limited	818 644	80%[4] 63%	556 862	54% 84%[5]

Notes:

1. Maximum load point, which is the point at which the route has the maximum number of passengers relative to capacity, is identified for those lines operating above or near 85 percent.
2. MLP located at California Street/Presidio Avenue.
3. MLP located at Sutter Street/Mason Street.
4. MLP located at Geary Boulevard/Laguna Street.
5. MLP located at Geary Street/Van Ness Avenue.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

2.5.3.1.1 Recent and Proposed Changes to Transit Service

The following changes are proposed by the TEP for lines in the vicinity of the Mount Zion campus site:

- **1 California** – The TEP proposes changes to PM peak headways east of Presidio Avenue from 7 to 6 minute headways.
- **2 Clement** – The TEP proposes supplemental trolley coach service added between Downtown (Sansome/Market streets) and Presidio Avenue. Peak period route headways would be reduced from 12 to 7.5 minutes.
- **24 Divisadero** – The TEP proposes reducing peak period headways from 10 to 9 minutes.

In addition, although not included in the TEP, the 38 Geary/38L Geary Limited would be converted to a Bus Rapid Transit (BRT) line, with reduced stops and reduced headways which will be specified in the Geary Corridor Bus Rapid Transit Project currently underway. The project alternatives propose implementing transit improvements in the Geary corridor with high-frequency (i.e. headways every five minutes or less during peark period times), BRT-branded bus service operating on physically demarcated, bus-only lanes from 34th Avenue to Market Street. The bus-only lanes would be differentiated from other lanes by colored pavement, signage, buffers, and street markings. Creating these bus-only lanes would involve converting one existing mixed-flow traffic lane (or general-use lane) on Geary Boulevard to a bus-only lane from 34th Avenue to Gough Street. From Van Ness Avenue to Market Street, where buses currently operate on Geary Boulevard in the westbound direction and on O'Farrell Street in the eastbound

direction, enhanced markings and signage have been applied to make the existing bus-only lanes more conspicuous and self-enforcing. Other enhancements would be deployed as well, including transit signal priority (TSP), specialized BRT-branded bus vehicles, and distinctive BRT-branded stations.

2.5.3.2 Regional Transit Service

Table 2-22 presents the regional transit routes serving the Mount Zion campus site and route characteristics as of November 2013, including service frequencies during the weekday morning and evening peak periods, hours of operations and neighborhoods served.

AC Transit, SamTrans, Caltrain, and BART riders would transfer to Muni to access the Mount Zion campus site. Golden Gate Transit riders would be able to walk to the nearest stop, located at Geary Boulevard and Divisadero Street approximately 700 feet from the campus site.

TABLE 2-22: REGIONAL TRANSIT OPERATIONS - MOUNT ZION

Route	AM Peak Weekday Headways (7AM-9AM)[1]	PM Peak Weekday Headways (4PM-6PM)[1]	Hours of Operation	Areas Served by Route	Nearest Stop Location	Distance to Campus Site
Caltrain Local	-	-	4:30 AM-12:01 AM (IB) 4:55 AM-1:32 AM (OB)	San Francisco, San Jose	Fourth and King	2.7 miles
Caltrain Limited-Stop	10-20	20-60	5:50 AM-8:00 PM (IB) 6:11 AM-8:19 PM (OB)	San Francisco, San Jose	Fourth and King	2.7 miles
Caltrain Baby Bullet	10-40	20-40	5:45 AM-7:24 PM (IB) 6:57 AM-7:39 PM (OB)	San Francisco, San Jose	Fourth and King	2.7 miles
BART	5-15	5-15	4:00 AM-12:00 AM (IB/OB)	East Bay, San Francisco, San Mateo County	Civic Center	1.5 miles
AC Transit	15-20	15-20	12:00 AM-12:00 AM(IB/OB)	East Bay, San Francisco	Beale between Folsom and Howard	2.7 miles
SamTrans Route 292	10-15	20	3:55 AM-2:28 AM (IB) 4:30 AM-12:00 AM (OB)	San Mateo County, SFO, San Francisco	Mission and First	2.5 miles
GGT commuter and basic bus routes	15-90	15-90	4:01 AM-12:41 AM (IB) 5:06 AM-2:28 AM (OB)	North Bay, San Francisco	Geary and Divisadero	700 feet

Notes:

1. Headway in minutes.

Source: Caltrain, BART, AC Transit, SamTrans, GGT; Prepared by Fehr & Peers, 2013.

2.5.3.3 UCSF Shuttle System

Table 2-23 summarizes the UCSF shuttle routes serving the campus site. Shuttles to and from the Mount Zion campus site stop at a shuttle loading zone located midblock on Sutter Street between Divisadero Street and Scott Street (as shown in **Figure 2-13**). These stops are designated by UCSF Transportation Services and reviewed/approved by SFMTA. UCSF shuttles were not observed to interfere with Muni operations at the Mount Zion campus site.

TABLE 2-23: UCSF SHUTTLES - MOUNT ZION

Route	Campuses Served	Hours of Operation	Headways (minutes)[1]	Average Weekday Boardings (2012)
Gold	Parnassus-Mt. Zion-Mission Bay-SFGH	5:45 AM – 9:25 PM	15/20	924
Blue	Parnassus-SFGH-Mission Bay-Mt. Zion	5:35 AM – 8:47 PM	15/20	996
Black	Parnassus-Mt. Zion-Laurel Heights	6:30 AM – 7:50 PM	20	781
Tan	Parnassus-Laurel Heights-Mt. Zion	6:50 AM – 7:45 PM	20	651
Purple	Parnassus (Library)-3360 Geary-Mt. Zion-3360 Geary	6:15 AM – 6:38 PM	45	171

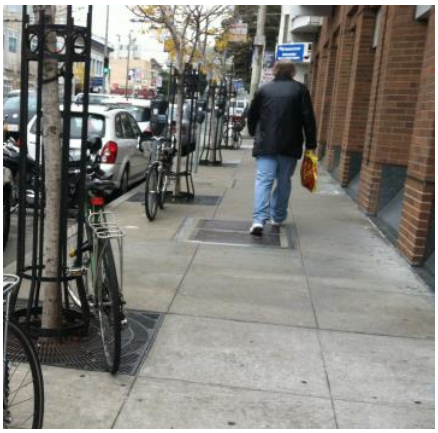
Notes:
1. Multiple values indicate variability in headways during the day.

Sources: UCSF Campus Life Services Transportation, Routes & Timetables, 2014; Ridership data from *UCSF Shuttle Operations Study, Final Report*, January 2014, prepared by Nelson Nygaard.

2.5.4 Pedestrian Circulation

Approximately six percent of those traveling to and from the campus site walk.

Pedestrian activity is high around the campus site, particularly along Divisadero Street between Geary Boulevard and Bush Street. Pedestrian counts indicate that the highest pedestrian activity occurs along Divisadero Street at Geary Boulevard and Sutter Street, with over 900 total pedestrians counted crossing each of those intersections during the AM and PM peak hours. Pedestrian volumes are generally lower on Post, Bush, and Pine streets, and fall to less than 100 pedestrians on most crosswalks on other north-south streets parallel to Divisadero Street. Besides the campus site itself, the many ground level shops, restaurants and services in the area attract foot traffic.



Sidewalks with street trees and other pedestrian amenities surround the Mount Zion campus site

Within the campus site area, sidewalks generally exist on both sides of the street in most locations, and are generally 11 to 15 feet wide. Continental crosswalks are provided at the intersections of Divisadero Street/Bush Street and Divisadero Street/Sutter Street, while standard crosswalks are provided at other intersections surrounding the campus site. Curb ramps are generally provided at all intersections in the vicinity of the

campus site. Pedestrian signals are present at signalized intersections surrounding the campus site with the exception of the signalized intersection of Divisadero Street/Sutter Street.

2.5.5 Bicycle Circulation

Approximately three percent of those traveling to and from the Mount Zion campus site use a bicycle. This is consistent with the bicycling mode share throughout San Francisco. Several bikeways run within the vicinity of the campus site, as shown in **Figure 2-15**.

The following bicycle facilities are located within or near the Mount Zion campus site:

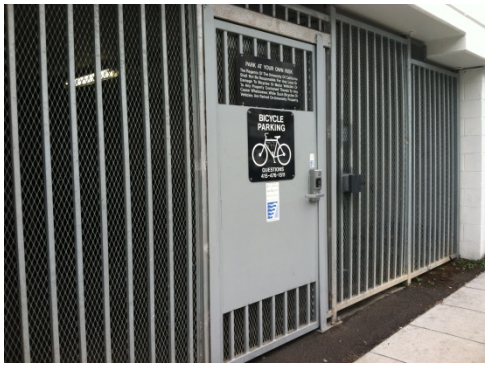
Post Street is part of San Francisco Bike Route 16, an east-west bike route extending from Van Ness Avenue to Presidio Avenue. Between Van Ness Avenue and Steiner Street, Post Street is designated as a Class III bicycle route with sharrows. From Steiner Street to Presidio Avenue, Post Street has Class II bicycle lanes in both directions.

Clay Street is part of San Francisco Bike Route 10, an east-west bike route that extends from the Embarcadero to Cherry Street via Broadway Street, Pacific Avenue, Webster Street, and Clay Street. Between the Embarcadero and Columbus Avenue, Bike Route 10 is a Class III route with sharrows, while the rest of the route is Class III but with no sharrows.

The SF Bike Plan does not include any short- or long-term improvements in the study area.

Bicycle counts indicate the most popular bicycling route through the campus site is Post Street, where between 40 and 70 bicyclists were counted during the AM and PM peak hours. Fewer than 10 bicyclists were counted on most other streets during the AM and PM peak hours in the study area.

Short-term bicycle parking is provided in "u-racks" in front of UCSF buildings on Sutter, Divisadero, and Post streets, and within the 2230 Post Street garage. Secure bicycle parking is provided in a bicycle cage in the 2325 Post Street and 2420 Sutter Street garages. Bicycle parking was observed to be less than half full at most short-term and secure bicycle parking locations.



Secure bicycle parking cage at 2325 Post Street

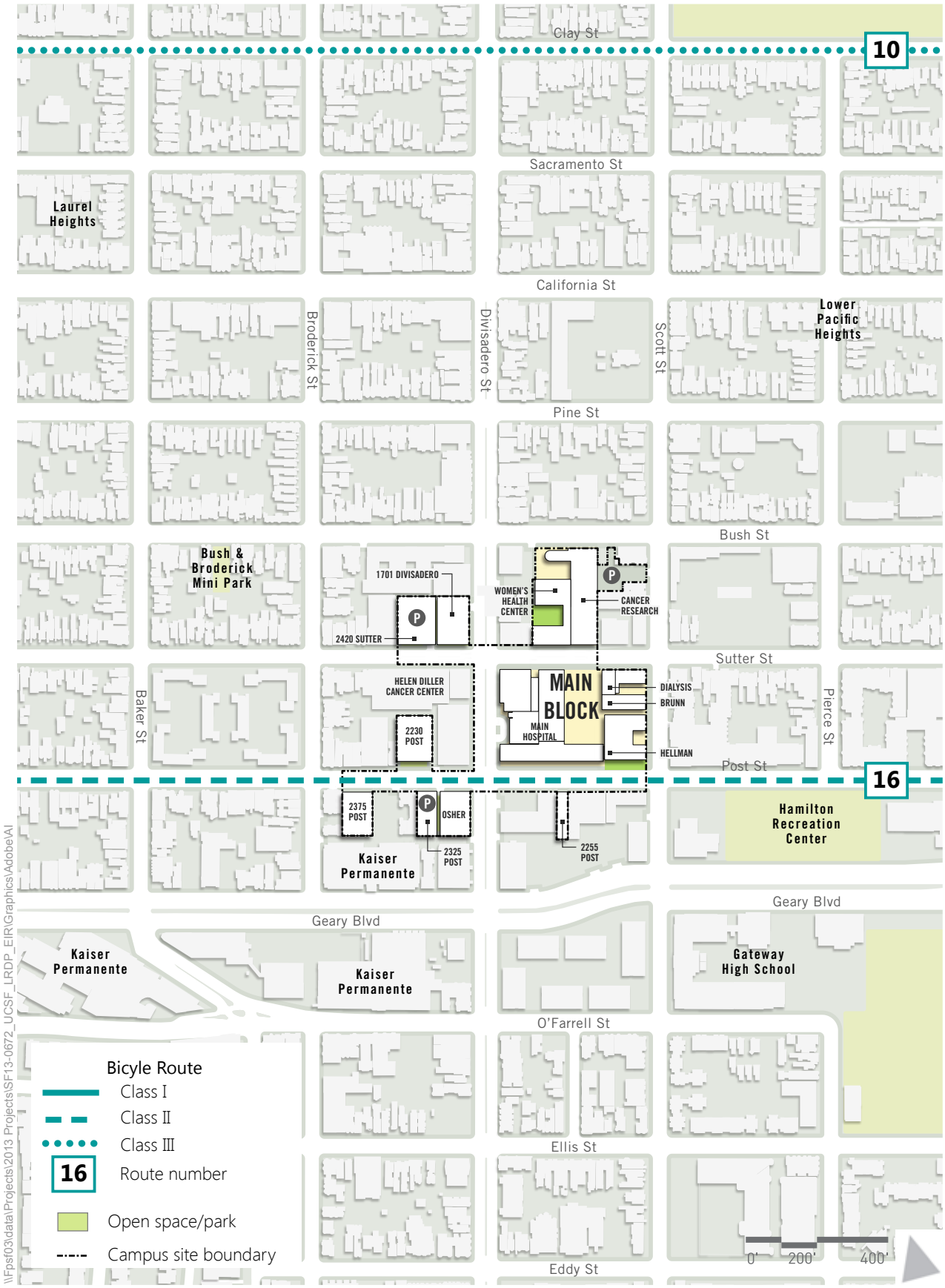


Figure 2-15

Existing Bicycle Facilities-Mount Zion

2.5.6 Loading Conditions

The Mount Zion campus site has both service vehicle and passenger loading. There are three off-street service vehicle loading facilities serving the existing uses on the campus site, and summarized in **Table 2-24** and shown in **Figure 2-16**. Passenger and service vehicles may also load on-street in marked zones on Sutter Street, Post Street, and Scott Street.

The off-street loading dock at the building on Sutter Street between Divisadero and Scott streets receives approximately 20 deliveries a day, not including additional deliveries made by catering, food services, waste management and other contractors. The loading area fronting the Scott Street facility serves passenger vehicles, emergency vehicles, and a valet service. Based on field observations, the loading area appears to currently be at capacity, as multiple passenger vehicles were seen occupying metered parking spots. Valet service, which frequently turns over during peak periods is also offered from a driveway loop in front of the hospital fronting Divisadero Street. Existing vehicle and most passenger loading areas provide sufficient amount of space for existing demand.

TABLE 2-24: PASSENGER AND VEHICLE LOADING INFORMATION - MOUNT ZION

Building / Location	Loading Areas (Passenger or Vehicle)	# Vehicle Loading Spaces and Type	# Passenger Loading Spaces
Sutter Street (between Divisadero and Scott)	Vehicle	3 parcel/truck space	--
2330 Post Street	Vehicle	1 parcel/truck spaces	--
Cancer Research	Vehicle	3 parcel/truck spaces	--
Hospital Driveway Loop (Divisadero Street)	Passenger	--	75 feet (3 spaces)
On-Street Sutter Street	Passenger	--	60 feet (2.5 spaces)
On-Street Post Street	Vehicle/Passenger	60 feet (1-2 spaces)	130 feet (6 spaces)
On-Street Scott Street	Passenger	--	75 feet (3 spaces)

Source: UCSF, 2013

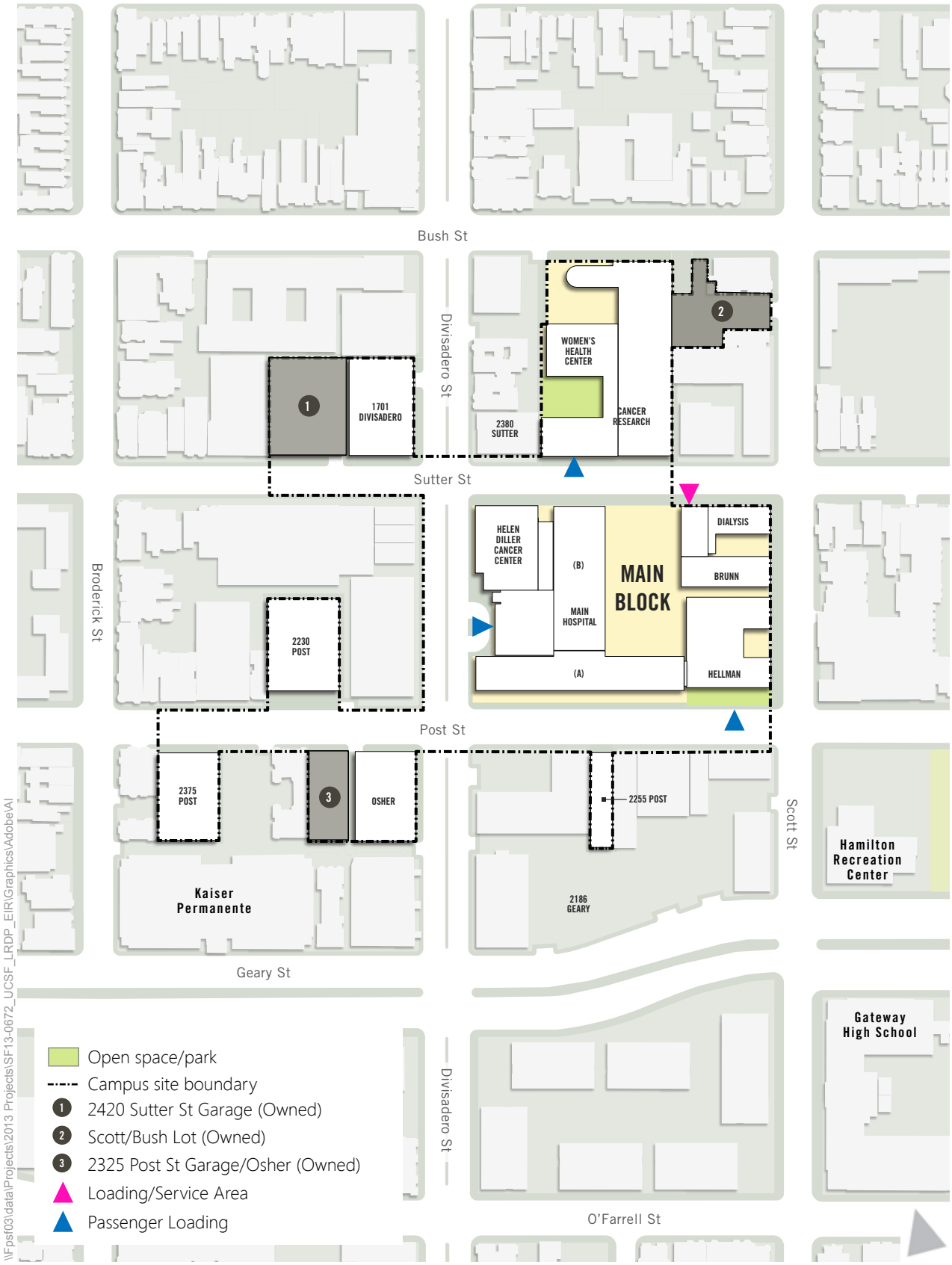


Figure 2-16

Existing Parking and Loading Locations-Mount Zion

2.5.7 Parking Conditions

2.5.7.1 On-Street Parking

The majority of the streets in the vicinity of the Mount Zion campus site are within the "G" Residential Parking Permit area (generally bounded by Broadway, Polk Street, Post Street, and Presidio Avenue), which restrict on-street parking Monday through Friday, to a two-hour period between the hours of 8 AM and 6 PM Metered parking with 30-minute and one-hour time limits is provided along Divisadero Street and on portions of Post and Sutter streets on one to two blocks to the east and west of Divisadero Street.

Table 2-25 summarizes the on-street parking supply and utilization from a parking survey conducted in March 2014 of approximately 1,240 spaces within the area generally bounded by Pine Street to the north, Geary Boulevard to the south, Baker Street to the west, and Pierce Street to the east. Parking occupancies throughout the mid-morning (10 AM to noon), midday (noon to 2 PM), and evening (6 to 8 PM) periods are very similar, close to 90 percent (i.e., very close to their effectively capacity). Most of the available parking during the peak parking demand periods is at non-metered spaces subject to residential permit parking restrictions, or at spaces subject to daytime passenger loading/unloading regulations. Overall, on-street metered parking is typically at capacity.

2.5.7.2 Off-Street Parking

There are three UCSF-managed and six public parking facilities in the vicinity of the Mount Zion campus site, providing a combined total of about 1,160 parking spaces. In addition, there are several private customer-only parking facilities that serve other medical office building in the area. The public parking facilities typically close in the late evening (e.g., at about 9 PM) and are not generally available for residential parking.

The UCSF-managed parking facilities include:

- 1701 Divisadero Street garage, located at the northwest corner of Divisadero and Sutter streets, under a medical office building. It provides 156 marked spaces for parking by UCSF permit holders only. Vehicle access is via a single driveway (entry and exit) at Sutter Street.
- 2420 Sutter Street garage, located between Divisadero and Broderick streets, consists of one level of underground parking and six levels of above-ground parking. Vehicle entry/exit is provided off of Sutter Street and also connects underground to the 1701 Divisadero Street garage. It provides 172 public parking spaces and 56 UCSF permit-holders only spaces. If needed, attendant parking can increase the capacity of the garage by approximately 20 vehicles.
- 2325 Post Street garage, located between Divisadero and Broderick streets, consists of a two-level above-ground parking structure. Vehicle entry/exit to the ground level (20 spaces) is provided off of Post Street, while vehicular access to the upper level (29 spaces) is provided off of Garden Street.
- Bush Street surface lot, located at the southwest corner of Bush and Scott Streets, provides 20 UCSF permit holders only spaces. It has two vehicle access points, at Bush Street (entry only) and at Scott Street (exit only).

TABLE 2-25: MOUNT ZION EXISTING ON-STREET PARKING SUPPLY AND OCCUPANCY [1]

Street Location	Overall Supply (spaces)	Occupancy [2]		
		Mid-Morning	Midday	Evening
North-South Streets				
Pine St, from Baker St to Steiner St	91	88%	81%	89%
Bush St, from Baker St to Steiner St	91	93%	88%	103%
Sutter St, from Baker St to Steiner St	54	56%	69%	83%
Post St, from Baker St to Steiner St	74	92%	96%	96%
Geary Blvd, from Baker St to Steiner St	67	91%	87%	85%
Pine St, from Baker St to Steiner St	86	85%	86%	94%
Total North-South Streets	**463**	**86%**	**85%**	**93%**
East-West Streets				
Baker St, from Pine St to Geary Blvd	149	83%	87%	88%
Broderick St, from Pine St to Geary Blvd	168	92%	91%	95%
Divisadero St, from Pine St to Geary Blvd	147	103%	101%	99%
Scott St, from Pine St to Post St	162	95%	102%	93%
Pierce St, from Pine St to Geary Blvd	151	74%	73%	46%
Total East-West Streets	**777**	**89%**	**91%**	**84%**
Total All Streets	**1,240**	**88%**	**89%**	**88%**

Notes:

1. Data collected in March 2014.
2. Values over 100% indicated illegal parking, such as double parked vehicles or vehicles stopped at a fire hydrant.

Source: Adavant Consulting.

The general public parking facilities include:

- 1635 Divisadero Street garage, located between Divisadero and Broderick streets, has approximately 430 marked spaces; attendant parking on the upper levels can increase the total capacity of the garage by approximately 50 vehicles. It has two vehicle access points, at Sutter Street (entry and exit) and at Post Street (exit only).
- 2355 Post Street surface lot, located on the south side of the street between Divisadero and Broderick streets. It has approximately 30 marked spaces, and can provide 37 additional spaces with attendant parking.
- 2186 Geary Boulevard surface lot located on the north side of Geary Boulevard between Divisadero and Scott Street. It has 70 marked spaces and can provide 25 additional spaces with attendant parking.
- 2120 Geary Boulevard surface lot, located on the north side of Geary Boulevard between Divisadero and Scott streets, serves an adjacent medical office building and provides general

public parking. It has 30 marked spaces and can provide 16 additional spaces with attendant parking.

- 1515 Scott Street surface lot, located at the northwest corner of Geary Boulevard and Scott Street, serves an adjacent medical office building and provides general public parking. It has 35 marked spaces and can provide 10 additional spaces with attendant parking. There are two access points, at Scott Street and Geary Boulevard.
- 2300 Sutter Street garage, located on the west side of the street, between Bush and Sutter streets. It provides 23 public parking spaces on the first floor of the garage.

Table 2-26 summarizes the off-street parking supply and occupancy from parking surveys conducted at UCSF-owned and public parking facilities in February and March 2014, on weekday mid-morning (10 AM to noon), midday (noon to 2 PM), and evening (4 to 6 PM) periods.

TABLE 2-26: MOUNT ZION EXISTING OFF-STREET PARKING SUPPLY AND OCCUPANCY [1]

Parking Facility	Overall Supply (spaces)	Occupancy		
		Mid-Morning	Midday	Evening
UCSF Facilities				
1701 Divisadero St & 2420 Sutter St Garages	384	84%	81%	24%
2325 Post St Garage	49	95%	95%	45%
Bush St Surface Lot	20	60%	60%	45%
Total UCSF Facilities	**453**	**84%**	**81%**	**27%**
Other Parking Facilities				
1635 Divisadero St Garage	430	90%	81%	17%
2355 Post St Surface Lot	67 [2]	100%	97%	36%
2186 Geary Blvd Surface Lot	95 [2]	87%	80%	14%
2120 Geary Blvd Surface Lot	46 [2]	100%	100%	17%
1515 Scott Surface Lot	45 [2]	91%	91%	42%
2300 Sutter St Garage	23	78%	78%	closed
Total Other Parking Facilities	**706**	**91%**	**84%**	**20%**
All Facilities	**1,159**	**88%**	**83%**	**23%**

Notes:

1. Data collected in February and March 2014.
2. Supply includes attendant parking spaces.

Source: Adavant Consulting, UCSF

Overall off-street parking occupancy during the mid-morning period is 88 percent and 83 percent during the midday period, while the overall occupancy in the evening is 23 percent. The overall peak parking occupancy at the UCSF-managed parking facilities is generally lower than at the other facilities. During mid-morning, the peak parking demand period, the UCSF parking facilities near the Mount Zion campus

site operate at about 84 percent of their capacity, while the non-UCSF facilities operate at 91 percent. An occupancy above 90 percent typically represents that the facility has reached its effective capacity.

2.6 MISSION CENTER

2.6.1 Roadway Facilities

The Mission Center campus site is located in the Mission neighborhood. Approximately 52 percent of those traveling to and from the campus site drive alone, are dropped off, or carpool/vanpool. The primary north-south corridors are Mission Street, Howard Street/South Van Ness Avenue, Folsom Street, Harrison Street, and Bryant Street. Primary east-west routes to the campus are 10th Street, 13th/Division Street, and 16th Street. The primary vehicular entrances to parking and loading areas for the campus site are located along Harrison Street between 14th Street and 15th Street and along 15th Street between Harrison Street and Folsom Street. The street network providing access to the Mission Center campus site is shown in **Figure 2-2**.

2.6.1.1 Regional Access

Regional access to the Mission Center campus site is provided by several major regional freeways, as discussed below.

I-80 is a six-lane freeway located approximately half a mile northeast of the campus site and connects San Francisco to the East Bay and other points east via the San Francisco-Oakland Bay Bridge. I-80 connects to U.S. 101 east of the Mission Center campus site. Access to I-80 is provided via the on- and off-ramps at Harrison Street at Eighth and Fifth streets.

U.S. 101 is an eight-lane freeway located one block north of the Mission Center campus site. U.S. 101 connects San Francisco with the peninsula and the South Bay to the south and with the North Bay to the north via the Golden Gate Bridge. Within the northern part of San Francisco, U.S. 101 operates on surface streets (i.e., Van Ness Avenue and Lombard Street). Van Ness Avenue and Lombard Street are part of the Citywide Pedestrian Network outlined in the Transportation Element of the *San Francisco General Plan*. Access to the campus site is provided at South Van Ness Avenue and Mission Street several blocks west of Mission Center.

2.6.1.2 Local Access

Local access to the Mission Center campus site is provided by an urban street grid network. Key local roadways near the campus site are discussed in detail below and defined according to roadway classifications identified in the San Francisco General Plan Transportation Element.

Mission Street is a four-lane roadway that extends from The Embarcadero to A Street in Daly City. The City of San Francisco classifies this roadway as a Primary Transit Oriented street. On-street parking is provided on both sides of the street. The 14 Mission and 14L Mission Limited Muni bus lines operate on Mission Street between The Embarcadero and San Jose Avenue; the 49 Mission/Van Ness bus line operates on Mission Street between South Van Ness Avenue and Ocean Avenue; and the 33 Stanyan operates on Mission Street between 16th Street and 18th Street. SamTrans Routes KX, 292, and 397 also

operate along Mission Street between the Temporary Transbay Terminal and 10th Street. Several Golden Gate Transit basic and commute bus routes operate on Mission Street between the Temporary Transbay Terminal and Eighth Street.

Howard Street/South Van Ness Avenue is a two to four-lane roadway that extends from The Embarcadero (as Howard Street) to Cesar Chavez Street (as South Van Ness Avenue), with Howard Street merging into South Van Ness Avenue just north of 13th Street. In addition, Howard Street operates as a southbound one-way street between Fremont Street and 11th Street. The City classifies this roadway as a Major Arterial. On-street parking is provided on both sides of the street. SamTrans Route 397 operates on Howard Street/South Van Ness Avenue between 10th Street and Cesar Chavez Street. Several Golden Gate Transit basic and commute bus routes operate on Howard Street between First Street and Eighth Street.

Folsom Street is a three to four-lane roadway that extends from The Embarcadero to Ripley Street. In addition, Folsom Street operates as a northbound one-way street north of 11th Street. The City classifies this roadway as a Major Arterial east of 13th Street and a Local Street west of 13th Street. On-street parking is provided on both sides of the street. The 12 Folsom/Pacific bus line operates on Folsom Street between Second Street and Cesar Chavez Street. Several Golden Gate Transit basic and commute bus routes operate on Folsom Street between Fremont Street and Seventh Street. Folsom Street is designated as a Class II bicycle facility between 11th Street and 19th Street, but only has a northbound bike lane between 11th Street and 14th Street.

Harrison Street is a three to four-lane roadway that extends from The Embarcadero to Cesar Chavez Street. The City classifies this roadway as a Secondary Transit street north of 11th Street (which transitions into a Primary Transit Important street until Fourth Street), a Major Arterial street between 11th and 13th streets, and a Local Street south of 13th Street. In addition, Harrison Street operates as a southbound one-way street between Third Street and 10th Street. On-street parking is provided on both sides of the street. The 12 Folsom/Pacific, 27 Bryant, and 47 Van Ness bus lines operate on Harrison Street between Fifth and 11th streets. Harrison has Class II bicycle lanes between 11th and 23rd streets, after which the street transitions into a Class III bicycle route.

Bryant Street is a two to four-lane roadway that extends from The Embarcadero to Cesar Chavez Street. In addition, Bryant Street operates as a northbound one-way street between Second and 13th streets. The City classifies this roadway as a Secondary Transit street north of 11th Street (which transitions into a Primary Transit Important street until Third Street), a Major Arterial street between 11th Street and 13th Street, and a Local Street south of 13th Street. On-street parking is provided on both sides of the street. The 27 Bryant bus line operates on Bryant Street between Fifth Street and Cesar Chavez Street, while the 47 Van Ness bus line operates between 13th Street and Fourth Street.

10th Street is a four-lane, one-way eastbound roadway that extends from Division Street to Market Street. The City classifies this roadway as a Major Arterial. On-street parking is provided on both sides of the street. San Mateo transit (SamTrans) operates on 10th Street between Mission Street and Division Street.

13th/Division Street is a six-lane roadway that extends from Bryant Street to Mission Street underneath the US101 Central Freeway. The City classifies this roadway as a Major Arterial. On-street parking is provided on both sides of the street.

16th Street is a four-lane roadway that extends from Third Street to Castro Street. The City classifies this roadway as a Primary Transit-Oriented street. On-street parking is provided on both sides of the street.

The 22 Fillmore bus line operates on 16th Street between Kansas Street and Church Street, while the 33 Stanyan bus line operates between Potrero Avenue and Mission Street.

11th Street is a two-lane roadway that extends from Bryant Street to Market Street. On-street parking is provided on both sides of the street. The City classifies this roadway as a Secondary Transit street. On-street parking is provided on both sides of the street. The 9 San Bruno and 9L San Bruno Limited bus lines operate along the entirety of 11th Street, while the 47 Van Ness bus line operates on 11th Street between Mission Street and Bryant Street. 11th Street has Class II bicycle lanes along its entire length.

14th Street is a two-lane Local Street that extends from Harrison Street to Buena Vista Terrace and operates one-way eastbound between Market Street and Folsom Street. On-street parking is provided on both sides of the street. 14th Street is designated as a Class III bicycle route with sharrows between Harrison and Folsom streets.

15th Street is a two-lane Local Street that extends from Harrison Street to Roosevelt Way and operates one-way westbound between South Van Ness Avenue and Guerrero Street. On-street parking is provided on both sides of the street.

17th Street is a two-lane Local Street that extends from Pennsylvania Street to Stanyan Street. On-street parking is provided on both sides of the street. Near the campus site, 17th Street has Class II bicycle lanes in both directions.

Florida Street is a two-lane Local Street that extends from Division Street to 16th Street. On-street parking is provided on both sides of the street, with parking at 90-degrees between Division Street and 15th Street on the eastern side of the street.

Alabama/Treat/Division Street is a two-lane Local Street that extends from Bryant to 16th Streets. Both sides of the street provide on-street parking, with parking at 90-degrees between 15th and 16th streets on the eastern side of the street.

Shotwell Street is a two-lane Local Street that extends from 14th to 16th streets. On-street parking is provided on both sides of the street.

2.6.2 Intersection Operating Conditions

The following 15 campus area intersections were selected for analysis through consultation with UCSF Campus Planning and San Francisco Planning Department staff. These study intersections are shown in **Figure 2-2**.

61. 13th Street/South Van Ness Avenue
62. 13th Street/Folsom Street
63. 13th Street/Harrison Street
64. 10th Street/Bryant Street
65. 14th Street/South Van Ness Avenue
66. 14th Street/Folsom Street
67. 14th Street/Harrison Street
68. 15th Street/South Van Ness Avenue
69. 15th Street/Folsom Street
70. 15th Street/Harrison Street
71. 16th Street/Mission Street
72. 16th Street/South Van Ness Avenue
73. 16th Street/Folsom Street
74. 16th Street/Harrison Street
75. 16th Street/Bryant Street

Figure 2-17A and **Figure 2-17B** displays the existing AM and PM peak hour traffic volumes, lane configurations and traffic controls at each of the 15 study intersections. Intersection turning movement counts at the study intersections were collected in May 2013 on mid-week and non-holiday days when schools were in session. Intersection turning movement count sheets are provided in **Appendix D**.

As shown in **Table 2-27**, 14 of the 15 study intersections operate at an acceptable level of service (LOS D or better) during the AM peak hour and all 15 operate at an acceptable level of service during the PM peak hour.

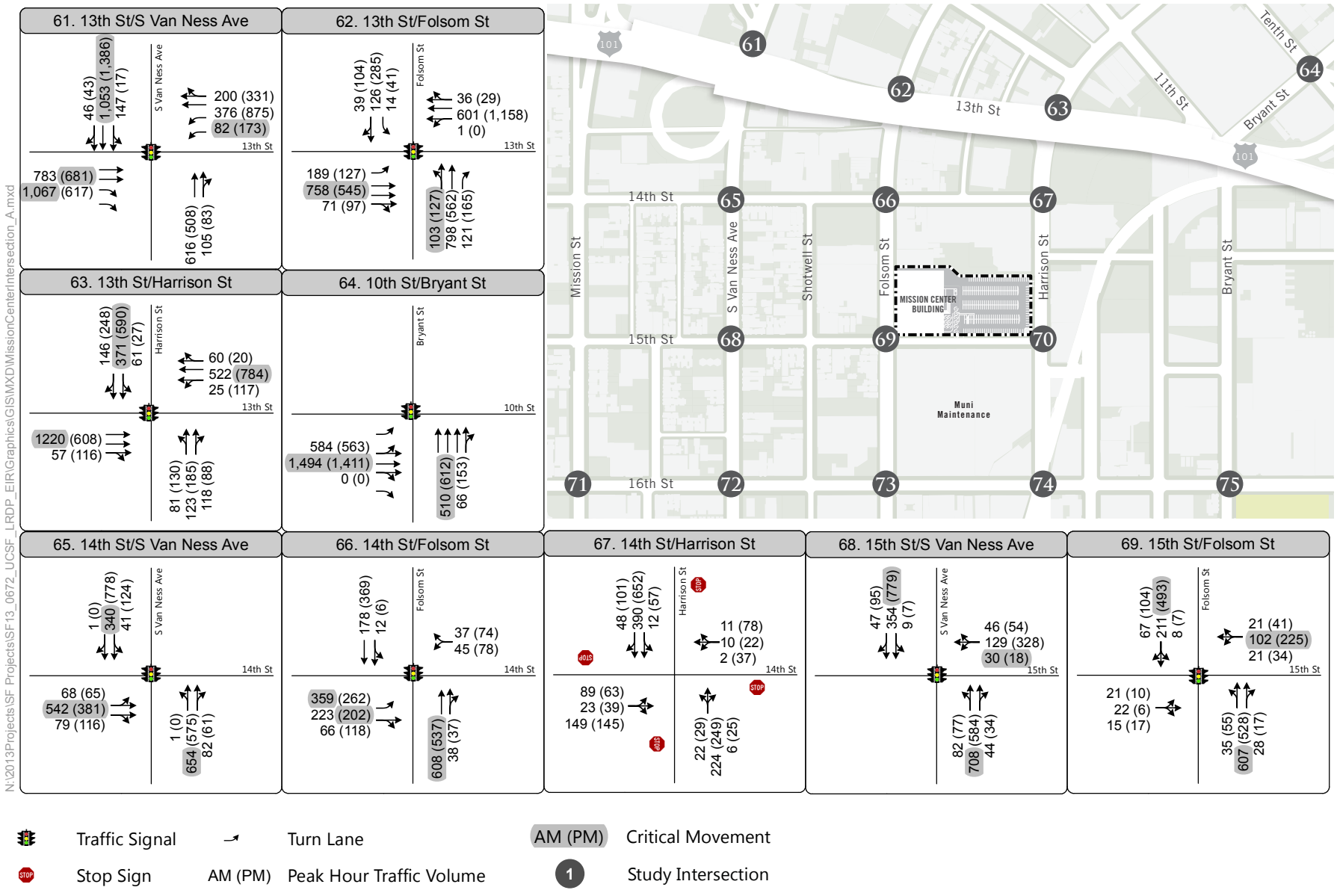


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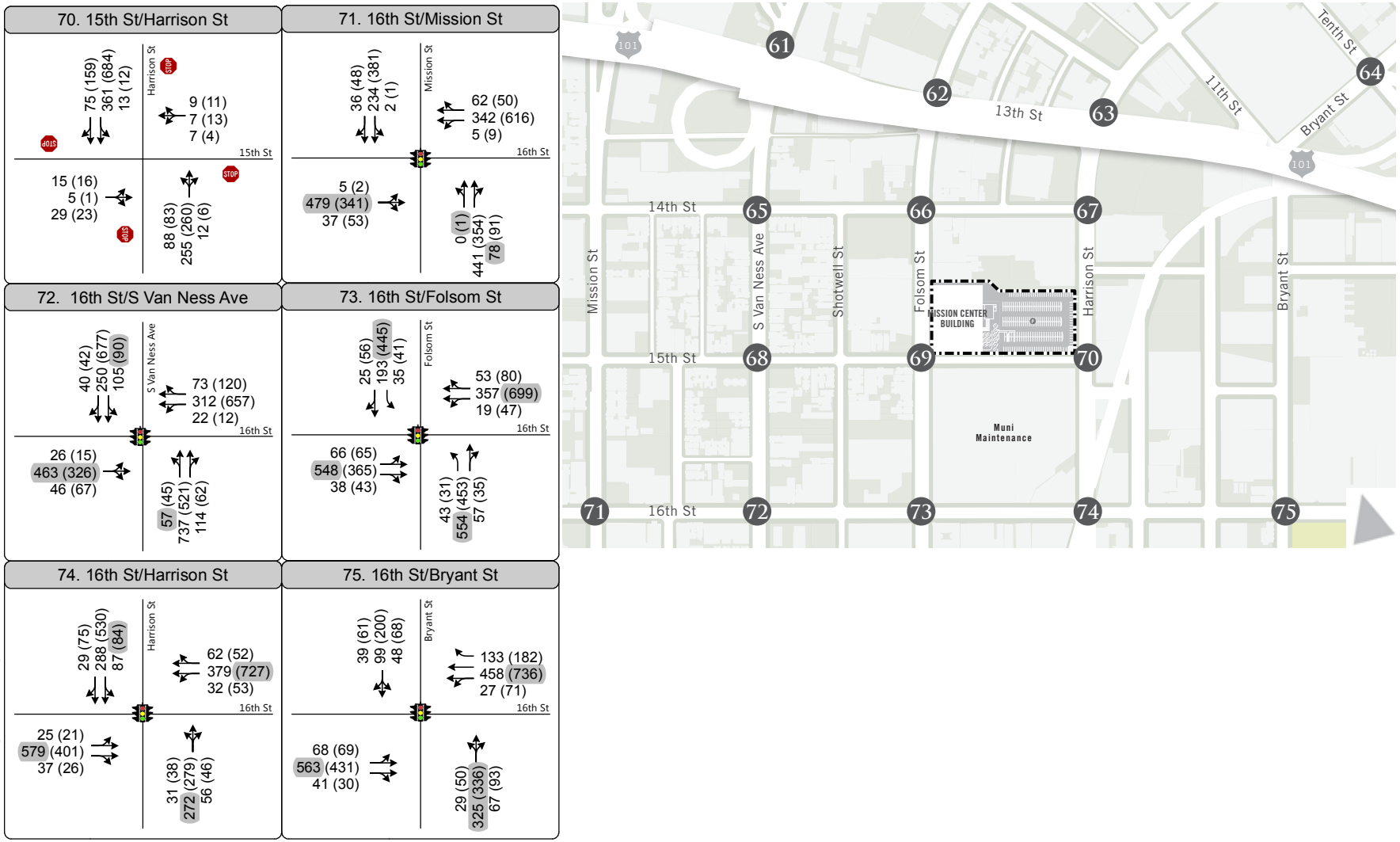
Figure 2-17A

Existing Intersection Lane Configurations, Traffic Control, and Volumes- Mission Center



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Traffic Signal — Turn Lane — AM (PM) Critical Movement

Stop Sign — AM (PM) Peak Hour Traffic Volume — 1 Study Intersection

Figure 2-17B

Existing Intersection Lane Configurations, Traffic Control, and Volumes- Mission Center

TABLE 2-27: EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE - MISSION CENTER

Intersection	Traffic Control[1]	Peak Hour	Vehicle Delay[2] (seconds)	LOS[3]
61. 13th Street / South Van Ness Avenue	Signal	AM PM	**71** 30	**E** C
62. 13th Street / Folsom Street	Signal	AM PM	26 29	C C
63. 13th Street / Harrison Street	Signal	AM PM	16 19	B B
64. Tenth Street / Bryant Street	Signal	AM PM	14 16	B B
65. 14th Street / South Van Ness Avenue	Signal	AM PM	15 16	B B
66. 14th Street / Folsom Street	Signal	AM PM	16 15	B B
67. 14th Street / Harrison Street	AWS	AM PM	11 / 12 20 / 24	B / B C / C
68. 15th Street / South Van Ness Avenue	Signal	AM PM	15 18	B B
69. 15th Street / Folsom Street	Signal	AM PM	12 29	B C
70. 15th Street / Harrison Street	AWS	AM PM	10 / 12 14 / 15	B / B B / C
71. 16th Street / Mission Street	Signal	AM PM	26 16	C B
72. 16th Street / South Van Ness Avenue	Signal	AM PM	37 20	D B
73. 16th Street / Folsom Street	Signal	AM PM	38 28	D C
74. 16th Street / Harrison Street	Signal	AM PM	21 30	C C
75. 16th Street / Bryant Street	Signal	AM PM	20 35	C D

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards

Source: Fehr & Peers, 2014.

As shown in **Table 2-27**, the following intersection operates unacceptably (LOS E) during the AM or PM peak hours:

- 13th Street and South Van Ness Avenue (Intersection #61) operates at LOS E during the AM peak hour due to the high volume of southbound traffic on South Van Ness Avenue.

2.6.3 Transit Network

The Mission Center campus site is well-served by public transit, both local and regional. Local service is provided by Muni bus lines. Regional service is provided by BART, AC Transit, Golden Gate Transit, SamTrans, and Caltrain. UCSF supplements Muni transit service with its own shuttle system that provides direct connections to UCSF-operated facilities throughout San Francisco. In many cases, these shuttles provide a direct transit alternative between two campus sites that would otherwise require a transfer between two or more Muni routes. Approximately 25 percent of those traveling to and from the campus site use public transit, while another 13 percent rely on UCSF shuttles to get to and from the campus site. **Figure 2-18** presents the transit routes in the vicinity of the campus site.

2.6.3.1 San Francisco Muni

Table 2-28 presents the Muni routes serving the campus site within an approximately quarter-mile walk and **Table 2-29** presents the peak hour muni ridership for these routes.

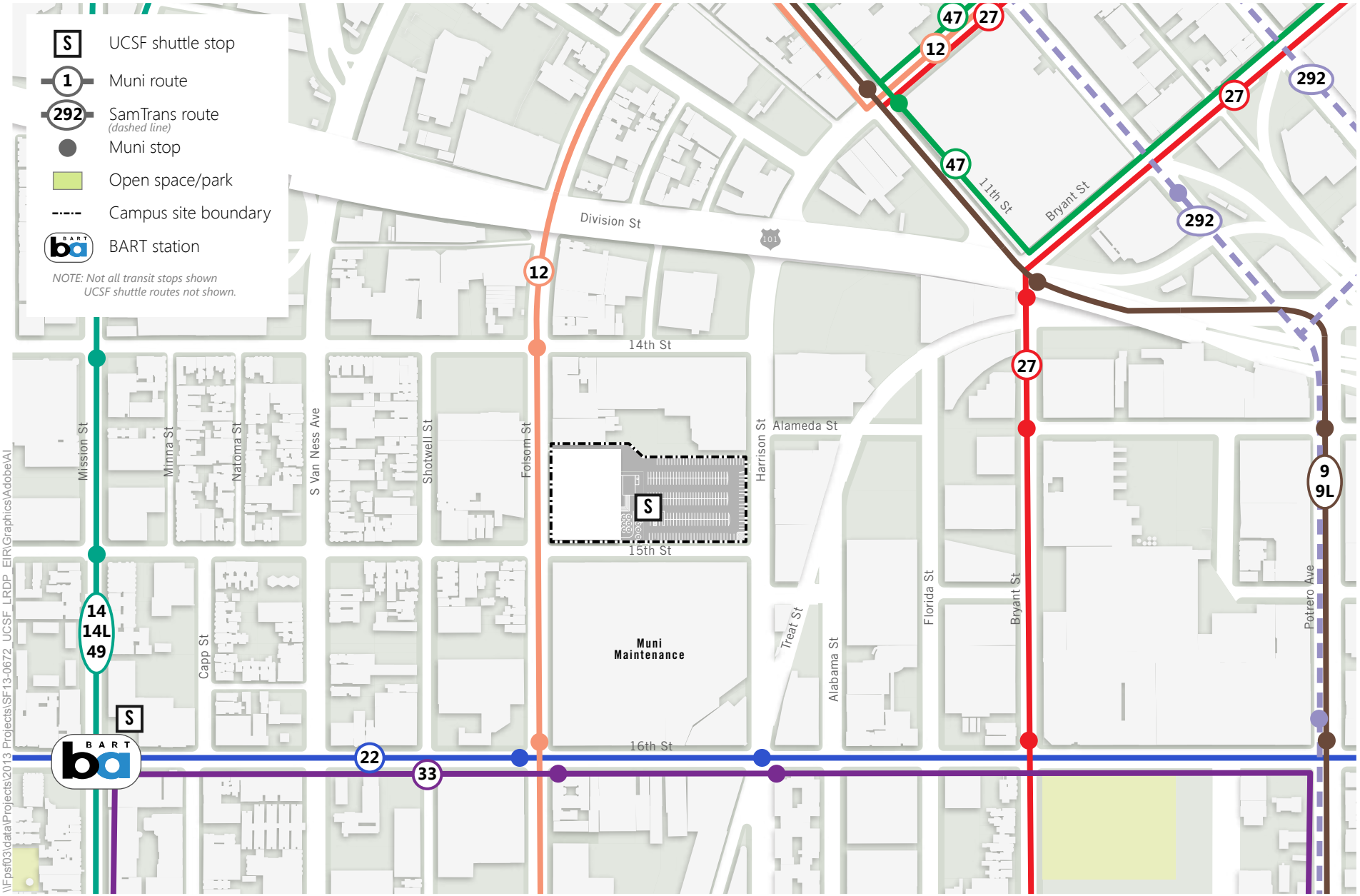


Figure 2-18

Existing Transit Service-
Mission Center

TABLE 2-28: LOCAL MUNI OPERATIONS - MISSION CENTER

Route	AM Peak Weekday Headways (7-9AM)[1]	PM Peak Weekday Headways (4-6PM)[1]	Hours of Operation	Neighborhoods Served by Route	Nearest Stop Location	Distance to Campus Site (feet)
9 – San Bruno	12	12	5:00 AM – 1:30 AM	Financial District, Visitacion Valley	Harrison Street / 11th Street	1,300
9L – San Bruno Limited	12	12	6:30 AM – 6:30 PM	Financial District, Visitacion Valley	Harrison Street / 11th Street	1,300
12 – Folsom/Pacific	20	20	5:30 AM – 12:00 AM	Nob Hill, Mission District	Folsom Street / 14th Street	0
14 – Mission	8	8	3:30 AM – 2:30 AM	Financial District, Crocker	Mission Street / 14th Street	1,600
14L – Mission Limited	9	9	6:00 AM – 7:00 PM	Financial District, Crocker	Mission Street / 16th Street	1,700
22 – Fillmore	9	8	2:00 AM – 2:00 AM	Marina District, Dogpatch	Folsom Street / 16th Street	900
27 – Bryant	15	15	5:15 AM – 1:00 AM	Nob Hill, Mission District	Bryant Street / Alameda Street	1,200
33 – Stanyan	15	15	5:15 AM – 1:15 AM	Inner Richmond, Potrero Hill	Folsom Street / 16th Street	900
47 – Van Ness	10	10	6:00 AM – 1:15 AM	Fisherman's Wharf, South of Market	Harrison Street / 11th Street	1,300
49 – Mission/Van Ness	8	8	4:45 AM – 1:00 AM	Marina District, Balboa Park	Mission Street / 14th Street	1,600

Notes:

1. Headway in minutes.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

TABLE 2-29: PEAK HOUR MUNI RIDERSHIP - MISSION CENTER				
Route	**AM Peak Ridership at MLP[1] (Inbound / Outbound)**	**AM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)**	**PM Peak Ridership at MLP[1] (Inbound / Outbound)**	**PM Peak Capacity Utilization at MLP[1] (Inbound / Outbound)**
9 – San Bruno	225 175	71% 56%	180 215	57% 68%
9L – San Bruno Limited	240 115	76% 37%	140 200	44% 63%
12 – Folsom/Pacific	123 144	65% 76%	135 126	71% 67%
14 – Mission	370 220	39% 23%	232 360	31% 48%
14L – Mission Limited	487 180	78% 29%	293 427	47% 68%
22 – Fillmore	293 287	70% 68%	323 308	68% 65%
27 – Bryant	132 140	52% 56%	160 116	63% 46%
33 – Stanyan	140 128	56% 51%	156 132	62% 52%
47 – Van Ness	294 276	78% 73%	276 258	73% 68%
49 – Mission/Van Ness	345 285	49% 40%	353 375	50% 53%

Notes:

1. Maximum load point, which is the point at which the route has the maximum number of passengers relative to capacity.

Source: SF Muni, 2013; SFMTA, Fall 2011; prepared by Fehr & Peers, 2013.

2.6.3.1.1 Recent and Proposed Changes to Transit Service

The following changes are proposed by the TEP for lines in the vicinity of the Mission Center campus site:

- **9L San Bruno Limited** – The TEP proposes changes to AM peak headways from 12 to 10 minute headways.
- **12 Folsom/Pacific** – The TEP proposes that the 12 Folsom/Pacific line be discontinued, though many portions of the discontinued line would still be served by rerouting the 27 Bryant line and the introduction of a new line, the 11 Downtown Connector.
- **14L Mission Limited** – The TEP proposes changes to AM and PM peak headways from 9 to 7.5 minute headways.
- **22 Fillmore** – The TEP proposes rerouting the 22 Fillmore to continue along 16th Street, creating new connections to Mission Bay from the Mission neighborhood. The proposed route change would add transit to 16th Street between Kansas Street and Third Street and Third Street between

16th Street and Mission Bay Boulevard North. The TEP also proposes to change the AM peak period headway, reducing from 9 minute to 6 minute headways.

Additionally, the SFMTA has proposed two transit enhancement treatment visions for 16th Street, of which one or a combination of the two will be selected by the SFMTA Board prior to implementation. The treatments are referred to as the Moderate and Expanded Alternatives in the TEP EIR. The Moderate Alternative proposes a number of physical changes to the portion of the rerouted 22 Fillmore in the vicinity of the Mission Bay campus site including, but not limited to, new transit stops, relocated transit stops, and transit bulbs (approximately 45 feet in length), as well as new traffic signals at Connecticut and Missouri streets. The Expanded Alternative includes the features listed for the Moderate Alternative as well as the conversion of a lane of mixed-flow lane of traffic to a transit-only lane along 16th Street in both directions both within and in the vicinity of the campus site as well as the prohibition of left turns at Bryant, Potrero (westbound only), Utah, San Bruno, Kansas, Rhode Island, De Haro, Carolina, Wisconsin, Arkansas, Connecticut, and Missouri streets. Both alternatives would reduce peak period headways; AM would be reduced from 9 to 6 minutes, PM peak headways would be reduced from 8 to 5.5 minutes, and midday headways would be reduced from 10 to 7.5 minutes. The stated purpose of both alternatives is to make the 22 Fillmore more frequent, reliable, and effective along 16th Street.

Prior to the extension of the 22 Fillmore into Mission Bay via either the Moderate or Expanded Alternative, which both require the extension of overhead wire, the SFMTA proposes to implement a temporary motor coach service to coincide with the opening of the Phase One Medical Center at Mission Bay between the campus site and the 16th Street BART Station for an initial service phase. The preliminary name for this interim service is the Muni line '55' which is shown in **Figure 2-10**. The route would follow 16th Street between Mission Street to Third Street and Third Street from 16th Street to Mission Bay Boulevard North. The preliminarily proposed locations for new bus stops for this service in the vicinity of the campus site are on 16th Street at Fourth Street (both directions) and on Third Street just south of Mission Bay Boulevard South (southbound direction). The operating hours and service frequencies of the proposal have not yet been made public at the time of publication of this document.

- **33 Stanyan** – The TEP proposes two alignment changes. First, the line would be rerouted to Valencia Street between 16th and 18th streets to alleviate transit congestion on Mission Street. Second, the line would continue along 16th Street to Connecticut Street, south to 18th Street, east to Third Street, south to 20th Street, and west to Tennessee Street to replace the segment of the 22 Fillmore that is proposed to be discontinued. The TEP also proposes reducing peak period headways from 15 to 12 minutes.
- **47 Van Ness** – The TEP proposes changes to AM and PM peak headways from 10 to 7.5 minute headways. The TEP also proposes two alignment changes. First, the line would terminate at the intersection of Van Ness Avenue and North Point Street, which would discontinue service on portions of North Point, Stockton, Beach, and Powell streets. Second, the southern portion of the line would operate along Division and Townsend streets instead of Bryant and Harrison streets to provide a faster connection to the Caltrain station at Fourth and King streets and better connections to commercial and residential centers along 13th and Division streets. This second

realignment would discontinue service on portions of Mission, 11th, Harrison, Bryant, Fifth, and Fourth streets.

2.6.3.2 Regional Transit Service

Table 2-30 presents the regional transit routes serving the Mission Center campus site and route characteristics as of November 2013, including service frequencies during the weekday morning and evening peak periods, hours of operations and neighborhoods served.

Golden Gate Transit, AC Transit, SamTrans, Caltrain, and BART riders would transfer to Muni to access the Mission Center campus site.

TABLE 2-30: REGIONAL TRANSIT OPERATIONS - MISSION CENTER

Route	AM Peak Weekday Headways (7AM-9AM)[1]	PM Peak Weekday Headways (4PM-6PM)[1]	Hours of Operation	Areas Served by Route	Nearest Stop Location	Distance to Campus Site
Caltrain Local	-	-	4:30 AM-12:01 AM (IB) 4:55 AM-1:32 AM (OB)	San Francisco, San Jose	Fourth and King	1.3 miles
Caltrain Limited-Stop	10-20	20-60	5:50 AM-8:00 PM (IB) 6:11 AM-8:19 PM (OB)	San Francisco, San Jose	Fourth and King	1.3 miles
Caltrain Baby Bullet	10-40	20-40	5:45 AM-7:24 PM (IB) 6:57 AM-7:39 PM (OB)	San Francisco, San Jose	Fourth and King	1.3 miles
BART	5-15	5-15	4:00 AM-12:00 AM (IB/OB)	East Bay, San Francisco, San Mateo County	16th Street and Mission	1,700 feet
AC Transit	15-20	15-20	12:00 AM-12:00 AM(IB/OB)	East Bay, San Francisco	Beale between Folsom and Howard	2.1 miles
SamTrans Route 292	10-15	20	3:55 AM-2:28 AM (IB) 4:30 AM-12:00 AM (OB)	San Mateo County, SFO, San Francisco	Mission and Seventh	1.3 miles
GGT commuter and basic bus routes	15-90	15-90	4:01 AM-12:41 AM (IB) 5:06 AM-2:28 AM (OB)	North Bay, San Francisco	Folsom and Eighth	0.6 miles

Notes:

1. Headway in minutes.

Source: Caltrain, BART, AC Transit, SamTrans, GGT; Prepared by Fehr & Peers, 2013.

2.6.3.3 UCSF Shuttle System

Table 2-31 summarizes the routes serving the campus site, which includes some of the shuttle routes provided by UCSF. Shuttles to and from the Mission Center campus site stop in the parking lot located adjacent to the Mission Center building, entering from Harrison Street and exiting onto 15th Street.

TABLE 2-31: UCSF SHUTTLES TO MISSION CENTER CAMPUS SITE - MISSION CENTER

Route	Campuses Served	Hours of Operation	Headways (minutes)[1]	Average Weekday Boardings (2012)
Lime	Parnassus-BDC-MCB	6:05 AM – 8:31 PM	15	732
Red	Mission Bay-MCB-16th Street BART	5:55 AM – 7:45 PM	10/15	808
Yellow	16th Street BART-MCB-2300 Harrison-SFGH-2300 Harrison	6:07 AM – 8:23 PM	15	403

Notes:
1. Multiple values indicate variability in headways during the day.

Sources: UCSF Campus Life Services Transportation, Routes & Timetables, 2014; Ridership data from *UCSF Shuttle Operations Study, Final Report*, January 2014, prepared by Nelson Nygaard.

2.6.4 Pedestrian Circulation

Traveling to and from the campus site via walking is a relatively small travel mode for many UCSF Mission Center employees and students. Approximately three percent of those traveling to and from the campus site walk, although those using Muni or BART arrive to the campus site via foot as well.

Most intersections surrounding the Mission Center campus site were observed to have 50 to 100 pedestrians crossing at most crosswalks. The highest pedestrian volumes were observed on 16th Street, with 400 to 600 pedestrians observed at Bryant Street, and steadily increasing pedestrian traffic proceeding west on 16th Street to a peak of over 2,000 pedestrians at Mission and 16th streets near the BART station.

Sidewalks surrounding the Mission Center Campus Site.

Within the campus site area, sidewalks exist on both sides of the street in most locations, and are generally 11 to 15 feet wide. Standard crosswalks are provided at most intersections surrounding the campus site; however, no crosswalks are striped across 14th Street at the T-intersection with Trainor Street, nor across Harrison Street at the T-intersection with Alameda Street. Curb ramps are generally provided at most intersections and pedestrian signals are present at signalized intersections in the campus site vicinity.

2.6.5 Bicycle Circulation

The topography at and around the Mission Center campus site is relatively flat, which facilitates easy bicycle travel. Approximately six percent of those traveling to and from the campus site ride bikes, which is approximately double the bicycling mode share throughout San Francisco. Several bikeways run within the project vicinity, as shown in **Figure 2-19**.

The following bicycle facilities are located near the Mission Center campus site:

11th Street is part of San Francisco Bike Routes 25 and 30, an east-west bike route that extends from Market Street to 13th Street with Class II bicycle lanes.

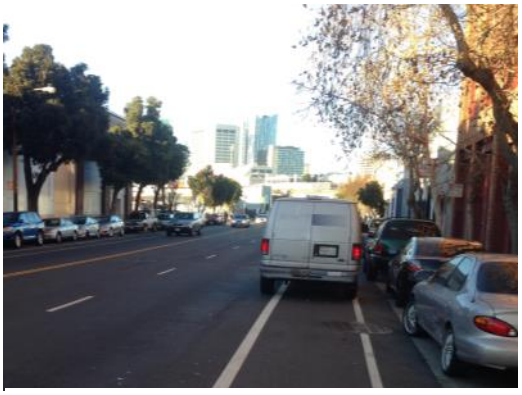
13th Street/Division is part of Bike Route 36, an east-west bike route that extends from Townsend Street to Bryant Street with Class II physically-separated bike lanes between Brannan Street and Townsend Street.

14th Street is part of Bike Routes 30 and 36, an east-west bike route that extends from Harrison Street to Market Street with a Class II bicycle lane and Class III sharrows.

17th Street is part of Bike Routes 25 and 40, an east-west bike route that extends from Kansas Street to Market Street with Class II bicycle lanes between Kansas Street and Church Street. Between Church Street and Market Street, 17th Street is designated as a Class III bicycle route, but does not have shared-lane markings.

Harrison Street is part of Bike Routes 25, 33, and 36, a north-south bike route that extends from 11th Street to Cesar Chavez Street. From 11th Street to 23rd Street, the route has Class II bicycle lanes. South of 23rd Street to Cesar Chavez, the route is designated as a Class III bicycle facility with no shared-lane markings.

Folsom Street is part of Bike Route 30, a north-south bike route that extends from 11th Street to 19th Street as a Class II route. However, the segment of Folsom between 11th Street and 14th Street has a single, northbound bike lane.



Bike lanes on Folsom Street are often blocked by double parking vehicles.

The SF Bike Plan includes planned short-term improvements to Bicycle Route 25 on Howard Street and Route 40 on 17th Street. Improvements to Howard Street include bicycle lanes from Ninth Street to 11th Street. Improvements to 17th Street include bicycle lanes between Market Street and Corbett Avenue.

The streets surrounding the campus site serve as popular bicycle routes connecting the Mission neighborhood with Downtown San Francisco. Bicycle routes connecting to downtown such as Harrison, Folsom, and 14th streets all see over 200 bicyclists during the AM peak hours. These routes are slightly less traveled in the PM peak hour, but still generally exceed 50 to 100 bicyclists. Other popular streets for bicycling include Division Street and 16th Street, which is not a signed bicycle route, but sees between 20 and 40 bicyclists during the AM and PM peak hours.

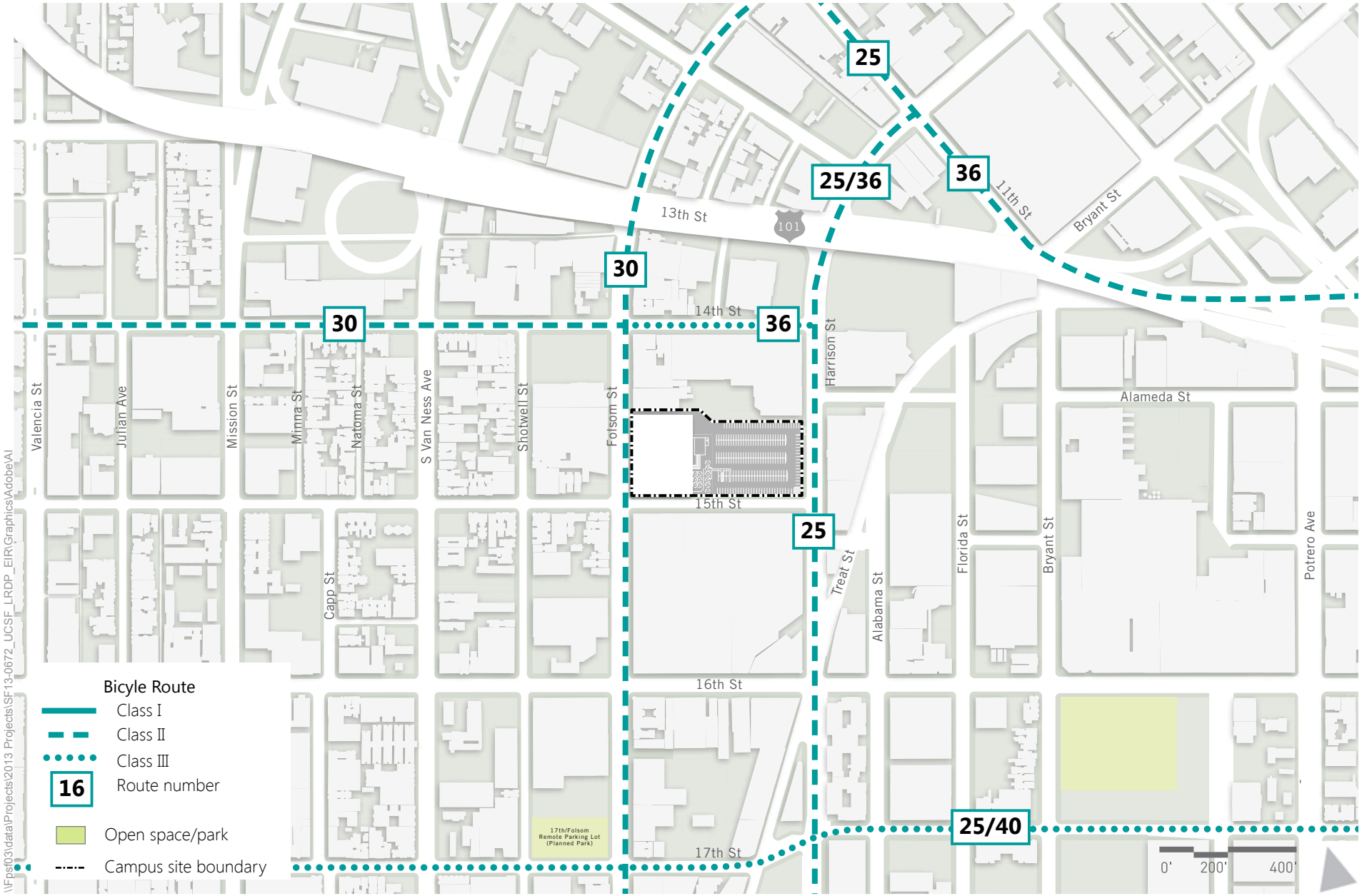


Figure 2-19

Existing Bicycle Facilities-
Mission Center

Bicycle racks are provided adjacent to the main entrance to the Mission Center Building. In an effort to increase bike parking and respond to feedback received from bicyclists, UCSF has recently redesigned and expanded the bike parking with new user-friendly racks.

2.6.6 Loading Conditions

The Mission Center campus site has both service vehicle and passenger loading. There are two off-street service vehicle loading facilities serving the existing uses on the campus site, and summarized in **Table 2-32** and shown in **Figure 2-20**. Marked zones for passenger and service vehicles are unavailable on adjacent streets, with most passenger loading occurring within the parking lot, adjacent to the building.

The Mission Center building receives approximately 12 deliveries per day in the designated off-street loading area. Additional parcel deliveries are made at the front of the building on Folsom Street, sometimes, which have been observed to block the northbound bicycle lane due to the lack of a curbside loading zone. Existing vehicle loading areas are sufficient for existing demand, although a curbside loading zone on Folsom Street, adjacent to the building, would improve conditions for bicyclists whom may have their path blocked due to vehicles loading in the northbound bicycle lane. This potential loading zone is discussed further in Section 4.5.4.

TABLE 2-32: PASSENGER AND VEHICLE LOADING INFORMATION - MISSION CENTER

Building / Location	Loading Areas (Passenger or Vehicle)	# Vehicle Loading Spaces and Type	# Passenger Loading Spaces
Mission Center Parking Lot	Vehicle	2 parcel/truck spaces	70 feet (3 spaces)

Source: UCSF, 2013

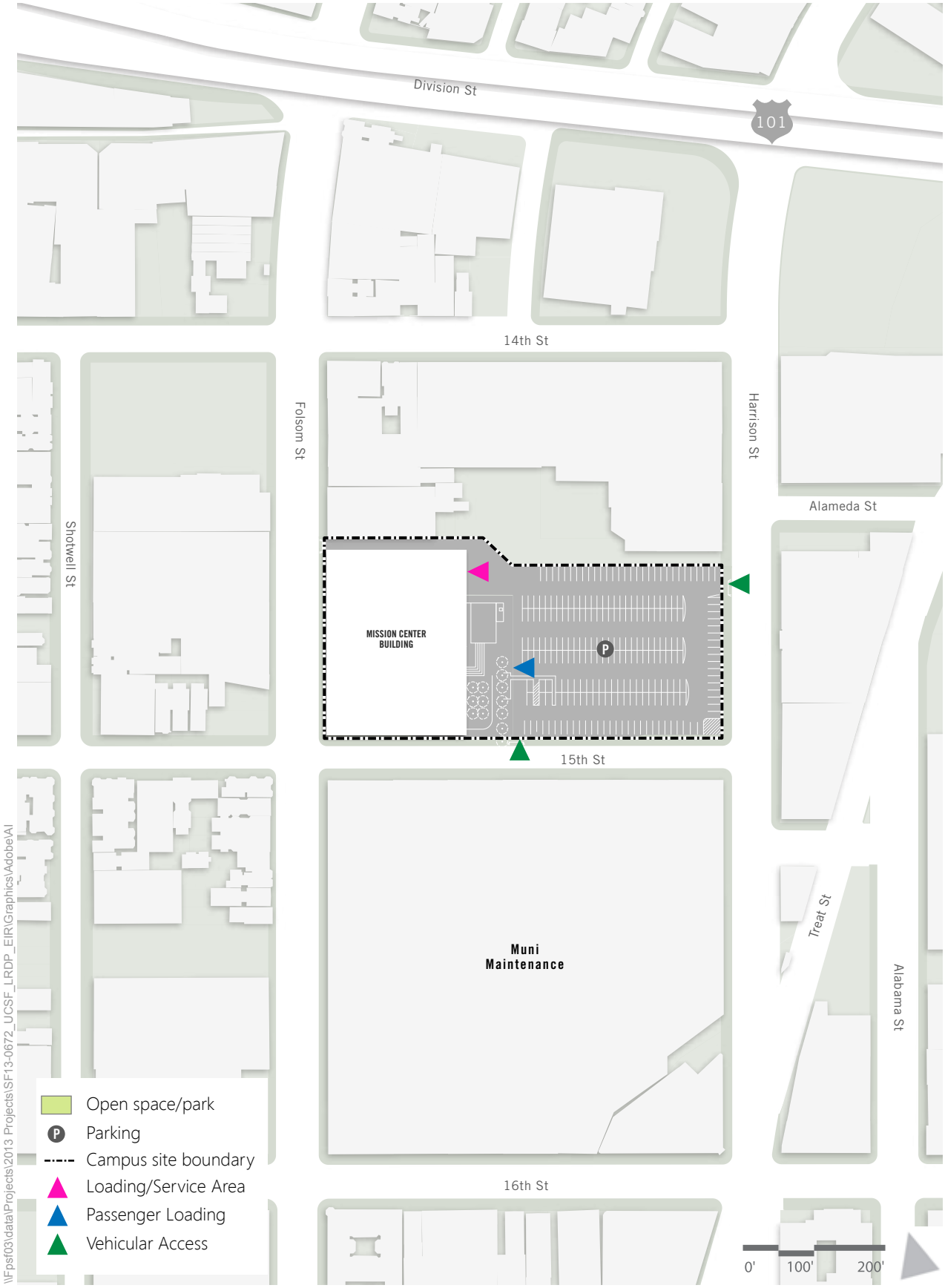


Figure 2-20

Existing Parking and Loading Locations-Mission Center

2.6.7 Parking Conditions

2.6.7.1 On-Street Parking

The majority of the on-street parking spaces in the vicinity of the Mission Center campus site are generally unrestricted. On-street parking on South Van Ness Avenue is limited to a one-hour period between the hours of 8 AM and 6 PM. Overnight parking is prohibited along Alameda, Alabama and portions of Treat streets west of Harrison Street.

Table 2-33 summarizes the on-street parking supply and utilization from a parking survey conducted by SFMTA in May and October 2012 of approximately 890 spaces, within the area generally bounded by 13th Street to the north, 17th Street to the south, South Van Ness Avenue to the west, and Harrison Street /Alabama Streets to the east.

TABLE 2-33: MISSION CENTER EXISTING ON-STREET PARKING SUPPLY AND OCCUPANCY [1]

Street Location	Overall Supply (spaces)	Occupancy		
		Mid-Morning	Midday	Evening
North-South Streets				
South Van Ness Av, from 13th St to 17th St	126	87%	86%	85%
Shotwell St, from 14th St to 17th St	114	97%	96%	89%
Folsom St, from 13th St to 17th St	124	98%	98%	76%
Harrison St, from 13th St to 17th St	117	98%	95%	72%
Treat St, from 15th St to 17th St	70	93%	97%	73%
Alabama St, from 15th St to Alameda St	45	96%	89%	71%
Total North-South Streets	**596**	**95%**	**93%**	**79%**
East-West Streets				
14th St, from So. V. Ness Av to Harrison St	66	97%	97%	89%
15th St, from So. V. Ness Av to Alabama St	99	96%	98%	80%
16th St, from So. V. Ness Av to Harrison St	59	95%	86%	73%
17th St, from So. V. Ness Av to Harrison St	67	97%	99%	82%
Total East-West Streets	**291**	**96%**	**96%**	**81%**
Total All Streets	**887**	**95%**	**94%**	**79%**

Notes:

1. Data collected in May and October 2012.

Source: Adavant Consulting, SFMTA.

Parking occupancies throughout the mid-morning (10 AM to noon) and midday (noon to 2 PM), periods are very similar, at 95 percent (i.e., at their effective capacity); parking utilization in the evening (6:30 Pm to 8 PM) period is about 80 percent.

2.6.7.2 Off-Street Parking

The Mission Center campus site provides 224 marked parking spaces at an adjacent surface lot on the east side of the building. The vast majority (207) of the spaces are reserved for UCSF permit-holders, with 17 spaces available for general paid parking. There are two access points, at Harrison and 15th streets.

Additional non-UCSF owned public parking is available at nearby facilities, including a surface lot at 3111 17th Street at the northwest corner of 17th and Folsom streets (220 spaces), a surface lot at 24 Florida Street near Treat Street (139 spaces), and a surface lot at 1550 Bryant Street near 15th Street, with access off Florida Street (41 spaces). **Table 2-34** summarizes the off-street parking supply and occupancy from parking surveys conducted at these facilities in February, during the weekday mid-morning (10 AM to noon), midday (noon to 2 PM), and evening (4 to 6 PM) periods.

TABLE 2-34: MISSION CENTER SITE EXISTING OFF-STREET PARKING SUPPLY AND OCCUPANCY

Parking Facility	Overall Supply (spaces)	Occupancy [1]		
		Mid-Morning	Midday	Evening
UCSF Facilities				
Mission Center Surface Lot (1855 Folsom St)	224	84%	86%	23%
Other Parking Facilities				
3111 17th Street Surface Lot	220	78%	75%	38%
24 Florida St Surface Lot	139	94%	96%	54%
1550 Bryant St Surface Lot	41	120%	124%	66%
Total Other Parking Facilities	**400**	**88%**	**88%**	**46%**
All Facilities	**624**	**86%**	**87%**	**38%**

Notes: Data collected in February 2014.

1. Values above 100% indicate attendant parking.

Source: Adavant Consulting

Overall off-street parking occupancy during the mid-morning period is 86 percent and 87 percent during the midday period, while the overall occupancy in the evening is 38 percent. The overall peak parking occupancy at the UCSF surface parking lot is slightly lower than at the other facilities. During mid-morning, the peak parking demand period, the parking lot at the Mission Center campus site operates at 86 percent of its capacity, while the other facilities have a combined utilization of 88 percent.

3 TRAVEL DEMAND ANALYSIS

This chapter describes the vehicle, pedestrian, bicycle, and transit travel demand that would be generated by the proposed 2014 LRDP, based on factors developed from extensive surveys conducted at existing UCSF facilities over the past few years. The impact of new travel associated with the 2014 LRDP was estimated using a four-step process: trip generation, mode split, trip distribution, and trip assignment.

In the first step, the number of person trips generated by the 2014 LRDP was estimated on a daily, AM and PM peak hour basis. Next, the person trips were assigned to different modes of travel; automobile, transit, UCSF shuttle, bicycles, etc. Then, the geographic distribution of the trip origins and destinations was predicted. Finally, project trips for each mode were assigned to specific streets, UCSF routes and transit lines along the transportation network. The results of this four-step process are described in the following sections. In addition to the travel demand generated by the 2014 LRDP, this chapter also summarizes its expected parking, commercial loading, and construction-related travel demands.

The 2014 LRDP proposes various levels of growth at each campus site through the plan horizon year of 2035. Some known projects, such as Phase Two Medical Center at Mission Bay, are currently projected to occur between 2035 and 2040, after the 2014 LRDP horizon year, but have been incorporated into the travel demand estimates presented in this document. As such, the transportation analysis represents a conservative approach as it includes development five years past the 2014 LRDP horizon, to the year 2040.

Table 3-1 summarizes the existing and estimated average daily population growth by campus site by 2040. These population assumptions are different than those presented in the 2014 LRDP document. In addition to accounting for the 2035/2040 population increases described above, they include a certain level of population double-counting as well. Faculty and staff that would be present at two campus sites on the same day are counted twice, once at each location, as they would generate trips at both sites. In addition, a 10 percent reduction factor has been applied to all staff, to account for those who might be absent from each campus site due vacation, illness, or working elsewhere.[8]

As shown in **Table 3-1**, each campus site is expected to increase in weekday daily population through the LRDP horizon year/2040 with the highest growth expected at the Mission Bay site. In total, the four campus sites are expected to grow their combined average weekday daily population by approximately 20,250 people, a 71 percent increase.

[8] The 10 percent average employee absentee rate is based on information provided by UCSF; the 1996 UCSF LRDP estimated an employee absentee rate of 11 percent.

TABLE 3-1: SUMMARY OF GROWTH IN AVERAGE DAILY POPULATION BY CAMPUS SITE [1]			
Campus Site	**Existing (2011/2012)**	**Future (2035/2040) [2]**	**Growth**
Parnassus Heights	17,596	18,662	1,066 (6%)
Mission Bay	5,671	22,839	17,169 (303%)
Mount Zion	4,452	5,990	1,538 (35%)
Mission Center	780	1,260	480 (62%)
Total	***28,499***	***48,752***	***20,253 (71%)***

Notes:

1. Average weekday daily population for the four main campus sites only; includes the following groups: staff, patients and their visitors, other visitors, child care staff and children, and residents. Faculty and staff that would be present at two campus sites on the same day are counted twice, once at each location, as they would generate trips at both sites.
2. The data shown in this table reflects the future average weekday daily population through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Source: UCSF, Adavant Consulting, 2014

Travel demand characteristics and forecasts for the UCSF campus sites were developed by Adavant Consulting and its assumptions have been reviewed by the UCSF Campus Planning staff. **Appendix F** shows detailed tables of the summaries below.

3.1 TRIP GENERATION

Travel demand estimates for the four campus sites are based on the current and projected average number of physicians, staff and visitors, child care, residents, etc., at each campus site on a typical weekday. Forecasting the net new travel demand involves estimating the number of trips generated by the LRDP at each campus site, less trips associated with the existing uses on-site.

The following sections describe trip generation resources, person trip generation rates, person trip generation estimates, and the estimation of existing and future person trips at each campus site.

3.1.1 Trip Generation Resources

Medical, academic, and clinical facilities as well as residential housing generate travel demand in unique ways, depending on their location, specialties, and surrounding land uses. In order to forecast travel demand for the campus sites, the following UCSF-specific data sources were obtained and processed:

- UCSF Mount Zion Transportation Surveys, 1992, 1999
- UCSF Parnassus Heights Transportation Surveys, 1992, 1999
- UCSF 1996 LRDP FEIR, 1997
- UCSF 1996 LRDP Amendment #1 FSEIR, 2002
- UCSF Survey of Residents at Aldea and Avenue Housing, 2013
- UCSF Transportation Services, Annual Commuter Surveys for 2012 and 2013

In addition to the UCSF-specific data sources, the following documents were also consulted:

- Institute of Transportationg Engineers (ITE), *Trip Generation Report* (9th Edition), 2012
- San Francisco Planning Department, *Transportation Impact Analysis Guidelines for Environmental Review*, 2002

Further, the number of persons entering and exiting key UCSF buildings at the Mission Bay and Parnassus Heights campus sites was recorded over a two-day period in October 2013 in order to refine and validate the travel demand assumptions.

3.1.2 Population Assumptions and Trip Generation Rates

Typical weekday, as well as weekday AM and PM peak hour person trip generation rates were developed through an iterative process for each population group, based on the number of people arriving and departing each campus site gathered from the surveys. The conditions for the development of these trip rates were:

- Reflect logical travel journeys to/from and within the campus site for each population type (staff, patients and visitors, other visitors, etc.);
- Have the same value across all campus sites for each land use type (hospital, research/office, residential);
- Produce results that are in line with those obtained from the staff, patient and visitor surveys and data collection efforts previously conducted at the campus sites; and
- Result in overall trip generation rates that are comparable to those shown in other transportation studies of similar facilities, from previous UCSF studies, or obtained from other recognized sources.

Estimates for staffing and patient and visitor levels for a typical weekday were provided by UCSF Campus Planning staff and are based on the types and intensities of services proposed to be located at each campus site according to the LRDP. The population groups include the following:

Staff: Staff includes faculty, physicians, fellows, residents, nurses, nurse practitioners, postdocs, and students. It also includes "visiting" faculty, physician researchers, etc. who are not based at that specific campus site, but come to it occasionally for teaching, patients' visits, to perform surgery, or to research. The four campus sites currently have approximately 17,000 staff members combined (including some double counting as described above) on a typical weekday. There would be an increase in the total number of staff members of approximately 29,100 individuals on a typical weekday by 2035/2040.

Patients and Visitors: The patients and visitors group includes inpatients, visitors to the inpatients, and outpatients and their companions. There are currently a total of approximately 8,000 existing patients and visitors to the Parnassus Heights, Mission Bay and Mount Zion campus sites on a typical weekday. There would be an increase of approximately 13,700 total patients and visitors on a typical weekday by 2035/2040 on a typical weekday.

Other Visitors: This population group includes community center visitors (at Parnassus Heights and Mission Bay), staff visitors, vendors, and service providers. There are approximately 1,720 existing visitors

in this group at the four campus sites, which would increase to approximately 2,570 visitors by 2035/2040 on a typical weekday.

Child care: This population group at the Parnassus Heights and Mission Bay campus sites includes child care staff and child care children. There are currently approximately 230 child care staff and children, which would increase to approximately 390 through 2035/2040 on a typical weekday. For travel demand purposes, child care children generate person and vehicle trips under the drop-off mode of travel.

Residential: The residential population at the Parnassus Heights and Mission Bay campus sites includes on-campus residents (contract holders, spouses, and children), visitors to the residents, vendors and residential service providers. There are approximately 1,540 existing residents at the two campus sites, which would increase to approximately 2,970 residents through 2035/2040 on a typical weekday.

The resultant existing and future average population assumptions for a typical weekday at each campus site are summarized in **Table 3-2** by population group.

TABLE 3-2: EXISTING AND FUTURE AVERAGE DAILY POPULATION ESTIMATES ON A TYPICAL WEEKDAY BY CAMPUS SITE AND POPULATION GROUP [1]

Population Group	Existing Population (2012/2013)	Future Population(2035/2040) [1]	Growth
Parnassus Heights			
Staff	10,701	11,161	460
Patients and Visitors	5,269	5,396	127
Other Visitors	920	920	0
Child care	118	143	25
Residential	588	1,043	455
Sub-Total	**17,596**	**18,662**	**1,066**
Mission Bay			
Staff	3,743	14,297	10,554
Patients and Visitors	260	4,983	4,723
Other Visitors	610	1,390	780
Child care	107	245	138
Residential	951	1,924	973
Sub-Total	**5,671**	**22,839**	**17,169**
Mount Zion			
Staff	1,845	2,485	640
Patients and Visitors	2,477	3,335	858
Other Visitors[1]	130	170	40
Sub-Total	**4,452**	**5,990**	**1,538**
Mission Center			
Staff	720	1,170	450
Other Visitors	60	90	30
Sub-Total	**780**	**1,260**	**480**
Four Campus Sites			
Staff	17,009	29,113	12,104
Patients and Visitors	8,006	13,714	5,708
Other Visitors	1,720	2,570	850
Child care	225	388	163
Residential	1,539	2,967	1,428
Grand Total	**28,499**	**48,752**	**20,253**

Notes:

1. Faculty and staff that would be present at two campus sites on the same day are counted twice, once at each location, as they would generate trips at both sites.
2. The data shown in this table reflects the future average weekday daily population through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Source: UCSF, Adavant Consulting, 2014

3.1.3 Trip Generation Estimates

The daily trip generation rates and additional number of total person trips (including internal to each campus site) expected by 2040 at each campus site are summarized in **Table 3-3**. The daily person trip rates presented in the table for staff patients and visitors were originally developed for the UCSF LRDP FEIR (1997), while the daily person trip rates for the residential uses have been obtained from Table 3-2, (p. 3-12) of the UCSF LRDP Amendment #1 FSEIR (2002). These rates were verified against field video counts taken at representative residential, research and medical office buildings at the Parnassus and Mission Bay campus sites and found to be appropriate for use in the evaluation of the 2014 LRDP. The daily person trip rate for child care represents a weighted average of staff (2.23 daily person trips per employee) and children (2.00 daily person trips per child).

Table 3-3 shows that in total, the four campus sites are expected to generate approximately 46,000 new person trips on a typical weekday, which represents an increase of approximately 72 percent over current values.

TABLE 3-3: NEW DAILY PERSON TRIPS BY CAMPUS SITE AND POPULATION GROUP

Population Group	Population Change (Existing through 2035/2040) [1]	Daily Person Trip Rate [2]	Additional Daily Person Trips (Existing through 2035/2040) [1]
Parnassus Heights			
Staff	460	2.23	1,026
Patients and Visitors	127	2.00	254
Other Visitors	0	2.00	0
Child care	25	2.04	50
Residential	455	3.79	1,725
Sub-Total	***1,066***	***2.86***	***3,055***
Mission Bay			
Staff	10,554	2.23	23,536
Patients and Visitors	4,723	2.00	9,446
Other Visitors	780	2.00	1,560
Child care	138	2.04	282
Residential	973	3.97	3,864
Sub-Total	***17,169***	***2.25***	***38,688***
Mount Zion			
Staff	640	2.23	1,427
Patients and Visitors	858	2.00	1,716
Other Visitors	40	2.00	80
Child care	0	-	0
Residential	0	-	0
Sub-Total	***1,538***	***2.10***	***3,223***
Mission Center			

TABLE 3-3: NEW DAILY PERSON TRIPS BY CAMPUS SITE AND POPULATION GROUP			
Population Group	**Population Change (Existing through 2035/2040) [1]**	**Daily Person Trip Rate [2]**	**Additional Daily Person Trips (Existing through 2035/2040) [1]**
Staff	450	2.23	1,004
Patients and Visitors	0	-	0
Other Visitors	30	2.00	60
Child care	0	-	0
Residential	0	-	0
Sub-Total	***480***	***2.22***	***1,064***
Four Campus Sites			
Staff	12,104	2.23	26,992
Patients and Visitors	5,708	2.00	11,416
Other Visitors	850	2.00	1,700
Child care	163	2.04	332
Residential	1,428	3.91	5,589
Grand Total	***20,253***	***2.27***	***46,029***

Notes:

1. The data shown reflects the future daily trips through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site. Faculty and staff that would be present at two campus sites on the same day are counted twice, once at each location, as they would generate trips at both sites.
2. The daily person-trip rates shown in this table represent the average value for each population group as a whole. Separate trip generation rate assumptions were developed for each category within the groups (e.g., faculty, physicians, residents etc. within staff), which are shown in **Appendix F**.

Source: Adavant Consulting, 2014

3.1.4 Net New External Vehicle Person Trips

As shown in **Table 3-3**, proposed projects at the four campus sites through 2035/2040 would yield approximately 46,000 additional daily person trips. This value reflects the total number of additional person trips that would be generated by the 2014 LRDP; they have not been adjusted to subtract trips associated with the existing land uses at the campus sites and internal trips expected to occur within each campus site. An internal trip is an origin-destination pair within the same site (e.g. a researcher at the Parnassus Heights campus site traveling from her office to the Millberry Union to eat lunch and returning back to her office afterwards).

Thus, the number of internal trips within each campus site needs to be assessed, such that they are subtracted from the total in order to determine the number of net new external person trips that would be generated by each campus site. The proportion of trips occurring within a campus site will be different for each population group. Using information from previous transportation analyses and surveys of UCSF campus sites, it has been assumed that trips internal to each site would represent 10 percent of all the staff (including child care staff) daily trips, 50 percent of the child care children daily trips (i.e. at least half of the children have a parent working on site), and 10 to 70 percent of the residents daily trips (depending on the campus and the resident population type). All patient, visitor, and vendor daily trips are assumed

to be external (one trip end inside and the other outside the campus site). **Appendix F** presents the application of the internal trip rates.

Table 3-4 summarizes the net new daily trip generation external to each campus as proposed by the 2014 LRDP (Those trips that do not have both trip ends within the same campus site). As shown in the table, conservatively, no internal person trips were assumed to occur within the Mount Zion and Mission Center campus sites given their smaller size.

TABLE 3-4: EXISTING AND FUTURE DAILY INTERNAL AND EXTERNAL PERSON TRIPS

Population Group	Existing (2012/2013) Daily Person Trips		2035/2040 Daily Person Trips [1]		Net New Daily Person Trips	
	Internal	External	Internal	External	Internal	External
Parnassus Heights						
Staff	2,386	21,477	2,489	22,400	103	923
Patients and Visitors	0	10,538	0	10,792	0	254
Other Visitors	0	1,840	0	1,840	0	0
Child care	104	136	125	165	21	29
Residential	1,085	1,104	2,088	1,825	1,004	722
Sub-Total	***3,575***	***35,095***	***4,702***	***37,022***	***1,127***	***1,928***
Mission Bay						
Staff	835	7,512	3,188	28,695	2,354	21,182
Patients and Visitors	0	520	0	9,966	0	9,446
Other Visitors	0	1,220	0	2,780	0	1,560
Child care	90	128	210	290	120	162
Residential	667	3,161	3,132	4,560	2,465	1,399
Sub-Total	***1,591***	***12,542***	***6,530***	***46,291***	***4,939***	***33,749***
Mount Zion						
Staff	0	4,114	0	5,541	0	1,427
Patients and Visitors	0	4,954	0	6,670	0	1,716
Other Visitors	0	260	0	340	0	80
Sub-Total	***0***	***9,328***	***0***	***12,551***	***0***	***3,223***
Mission Center						
Staff	0	1,606	0	2,609	0	1,004
Other Visitors	0	120	0	180	0	60
Sub-Total	***0***	***1,726***	***0***	***2,789***	***0***	***1,064***
Total Campus Sites						
Staff	3,221	34,709	5,677	59,245	2,456	24,536
Patients and Visitors	0	16,012	0	27,428	0	11,416
Other Visitors	0	3,440	0	5,140	0	1,700
Child care	194	264	335	455	141	191
Residential	1,752	4,265	5,220	6,385	3,469	2,120

Total	***5,167***	***58,690***	***11,233***	***98,654***	***6,066***	***39,963***

Note:
1. The data shown reflects the future daily person trips through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Source: Adavant Consulting, 2014

Table 3-4 shows that the through 2035/2040, the four campus sites would generate about 39,960 net new external person trips per day.

3.2 PERSON TRIPS FOR MISSION BAY SITE IN 2015

An interim trip generation assessment was also conducted at the Mission Bay campus site only for the year 2015, when Phase One Medical Center and the Mission Hall projects, currently under construction, are expected to open. The population and person trip increases at the Mission Bay site by 2015 are summarized in **Table 3-5**.

TABLE 3-5: 2012/13 TO 2015 DAILY POPULATION AND PERSON TRIP GROWTH AT THE MISSION BAY CAMPUS SITE BY POPULATION GROUP

Population Group	Average Daily Population Growth (2012/13 to 2015)	Additional Daily Person Trips by 2015		
		Internal	External	Total
Mission Bay				
Staff	2,405	536	4,826	5,363
Patients and Visitors	2,127	0	4,254	4,254
Other Visitors	170	0	340	340
Child care	0	0	0	0
Residential	0	0	0	0
Total Mission Bay	***4,702***	***536***	***9,420***	***9,957***

Source: UCSF, Adavant Consulting, 2014

As shown in the table, with the opening of Phase One Medical Center and Mission Hall by 2015, there would be an increase in population of approximately 4,700 individuals, which represents an increase of 9,420 external daily person trips.

3.3 TRAVEL MODE SPLIT

Travel mode split is the relative proportioning of LRDP-generated trips to various travel modes. Modes of travel categories include automobile, transit, walking and other, where other includes bicycle, motorcycle, and taxi. An average vehicle occupancy factor was applied to the number of automobile person trips to determine the number of vehicle trips.

Travel mode split and average vehicle occupancy assumptions for each campus site were based on information collected by UCSF and its transportation planning consultants, as described in Section 3.1.1. The methodology estimates the future modal share based on the current modal splits for each campus by population type, which take into account the transit accessibility, UCSF shuttle service, parking availability, and TDM measures being provided at each campus site; this approach is consistent with the travel demand methodologies established by the SF Planning Department.

Table 3-6 summarizes the external person trips percentages by mode of travel for each campus site. As shown in the table, the majority of Parnassus Heights campus site trips arrive or depart by taking public transit or the UCSF shuttle service. A majority of Mission Bay campus site trips are drive alone, followed by public transit, and the UCSF shuttle service. The majority of Mount Zion and Mission Center campus sites trips arrive or depart by driving alone, followed by travel by public transit.

TABLE 3-6: EXTERNAL TRIPS MODE OF TRAVEL ASSUMPTIONS[1]

Population Group	Drive Alone	Drop-Off/Taxi	Carpool/ Vanpool	Public Transit	UCSF Shuttle	Bike / Motorcycle	Walk	All Modes
Parnassus Heights								
Staff	4%	2%	1%	18%	32%	16%	28%	100%
Patients and Visitors	24%	17%	14%	42%	0%	1%	1%	100%
Other Visitors	54%	8%	4%	20%	0%	1%	13%	100%
Child care	9%	70%	3%	8%	5%	2%	3%	100%
Residential	24%	4%	0%	17%	47%	3%	4%	100%
Total	**14%**	**6%**	**2%**	**21%**	**33%**	**9%**	**15%**	**100%**
Mission Bay								
Staff	33%	2%	6%	22%	22%	8%	8%	100%
Patients and Visitors	45%	5%	14%	26%	2%	1%	7%	100%
Other Visitors	71%	4%	9%	11%	0%	1%	4%	100%
Child care	9%	72%	2%	7%	7%	2%	1%	100%
Residential	37%	0%	1%	15%	36%	5%	7%	100%
Total	**38%**	**3%**	**8%**	**22%**	**16%**	**5%**	**8%**	**100%**
Mount Zion								
Staff	37%	4%	8%	26%	12%	6%	8%	100%
Patients and Visitors	39%	7%	23%	25%	0%	1%	5%	100%
Other Visitors	63%	4%	14%	15%	0%	2%	4%	100%
Total	**39%**	**6%**	**16%**	**25%**	**5%**	**3%**	**6%**	**100%**
Mission Center								
Staff	43%	1%	5%	27%	13%	7%	4%	100%
Other Visitors	100%	0%	0%	0%	0%	0%	0%	100%
Total	**46%**	**1%**	**5%**	**26%**	**13%**	**6%**	**3%**	**100%**

Notes:

1. Mode of travel percentages assumed for future travel conditions; percentages might not add up to 100% due to rounding.

Source: Adavant Consulting, 2014

Table 3-7 shows the external daily person trips by mode of travel as well as the number of daily vehicle trips for each campus site, which have been obtained by applying the percentages shown in **Table 3-7** to the external person trips described in Section 3.1.4.

TABLE 3-7: NEW DAILY EXTERNAL TRIPS BY MODE OF TRAVEL

Population Group	Daily Person Trips								Daily Vehicle Trips [1]
	Drive Alone	Drop-Off/Taxi	Carpool / Vanpool	Public Transit	UCSF Shuttle	Bike / Motor cycle	Walk	All Modes	
Parnassus Heights									
Staff	40	15	9	165	294	146	254	923	93
Patients and Visitors	62	42	36	107	0	3	4	254	17
Other Visitors	0	0	0	0	0	0	0	0	0
Child care	3	20	1	2	1	0	1	29	44
Residential	170	29	2	126	342	21	32	722	251
Total	**274**	**107**	**48**	**400**	**637**	**171**	**291**	**1,928**	**405**
Mission Bay (by 2015)									
Staff	1,639	57	195	914	874	510	637	4,826	1,893
Patients and Visitors	1,874	213	595	1,147	60	43	323	4,254	1,877
Other Visitors	244	12	29	36	0	5	14	340	280
Total	**3,757**	**282**	**819**	**2,097**	**934**	**557**	**974**	**9,420**	**4,051**
Mission Bay (by 2040)									
Staff	6,960	340	1,209	4,624	4,601	1,671	1,778	21,182	8,429
Patients and Visitors	4,274	472	1,293	2,462	144	94	706	9,446	4,457
Other Visitors	1,112	56	134	168	0	22	67	1,560	1,282
Child care	14	116	3	12	12	3	2	162	248
Residential	512	4	10	206	499	66	102	1,399	558
Total	**12,872**	**988**	**2,649**	**7,472**	**5,256**	**1,856**	**2,656**	**33,749**	**14,974**

TABLE 3-7: NEW DAILY EXTERNAL TRIPS BY MODE OF TRAVEL

Population Group	Daily Person Trips								Daily Vehicle Trips [1]
	Drive Alone	Drop-Off/Taxi	Carpool / Vanpool	Public Transit	UCSF Shuttle	Bike / Motor cycle	Walk	All Modes	
Mount Zion									
Staff	534	54	109	369	165	82	114	1,427	688
Patients and Visitors	662	125	397	429	0	17	86	1,716	544
Other Visitors	50	3	11	12	0	1	3	80	60
Total	**1,246**	**182**	**516**	**810**	**165**	**100**	**203**	**3,223**	**1,292**
Mission Center									
Staff	430	10	49	275	135	68	37	1,004	479
Other Visitors	60	0	0	0	0	0	0	60	60
Total	**490**	**10**	**49**	**275**	**135**	**68**	**37**	**1,064**	**539**

Notes:

1. Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

Source: Adavant Consulting, 2014

3.4 TRIP DISTRIBUTION

Project-generated person trips were assigned to San Francisco and regional origins/destinations, including the four San Francisco Superdistricts (northeast, northwest, southeast, and southwest quadrants of the City), the East Bay, the North Bay, and the South Bay, as well as areas outside the Bay Area region. Information collected by UCSF as part of their ongoing surveys of employees, patients, visitors and residents were used in this analysis.

The information includes origin/destination data by campus and by specific population group, including faculty, medical residents and nurses, students, staff, patients and visitors, vendors and services, and housing residents; the existing geographical trip distribution was used in the travel demand analysis; this approach is consistent with the travel demand methodologies established by the SF Planning Department. The following sections describe the trip distribution percentages by campus site, the detailed trip distributions by population group are presented in **Appendix F**.

3.4.1 Parnassus Heights

Table 3-4 shows approximately 1,930 new daily external trips to be attracted/generated by the Parnassus Heights campus site. These additional external person trips are distributed locally and regionally as described above. The resulting trip distribution percentages are shown in **Table 3-8**.

TABLE 3-8: PARNASSUS HEIGHTS CAMPUS SITE – 2040 PEAK HOUR TRIP DISTRIBUTION BY POPULATION GROUP[1]

Population Group	Staff	Patient and Visitors	Other Visitors [3]	Child care	Residential	All Population Groups Combined
San Francisco						
Superdistrict 1 / Northeast Quadrant	11%	43%	0%	11%	24%	19%
Superdistrict 2 / Northwest Quadrant	14%	3%	0%	14%	10%	11%
Superdistrict 3 / Southeast Quadrant	31%	17%	0%	31%	46%	39%
Superdistrict 4 / Southwest Quadrant	10%	4%	0%	10%	11%	10%
Outside of San Francisco						
East Bay	6%	22%	0%	6%	3%	5%
North Bay[2]	-2%	-1%	0%	-2%	2%	0%
South Bay	30%	13%	0%	30%	3%	16%
Out of Region[2]	0%	-1%	0%	0%	1%	0%
Total	***100%***	***100%***	***0%***	***100%***	***100%***	***100%***

Notes:

1. Trip distribution accounts for external trips only.
2. Negative trip distribution percentage occurs because the net peak hour trips origin/destination is less than the existing conditions.
3. No additional "Other Visitor" external trips would be generated/attracted to the Parnassus Heights campus site as part of the LRDP.

Source: Adavant Consulting, 2014

As shown in **Table 3-8**, most staff, patient and visitors, child care and resident trips come from Superdistrict 1, the Northeast quadrant of San Francisco, and Superdistrict 3, the Southeast quadrant. **Figure 3-1** shows general directions of approach and departure of LRDP-generated trips, based on the percentages presented in **Table 3-8**.

Figure 3-1

2040 Net New Trip Distribution-
Parnassus Heights

3.4.2 Mission Bay

As noted in **Table 3-4**, Phase One Medical Center and the Mission Hall projects at the Mission Bay campus site would generate 9,420 net new external daily person trips. Those trips are distributed regionally, with the resulting trip distribution percentages for the 2015 year are shown below in **Table 3-9**.

TABLE 3-9: MISSION BAY CAMPUS SITE – 2015 PEAK HOUR TRIP DISTRIBUTION BY POPULATION GROUP[1]

Population Group	Staff	Patient and Visitors	Other Visitors	Child care [2]	Residential [2]	All Population Groups Combined
San Francisco						
Superdistrict 1 / Northeast Quadrant	8%	22%	16%	0%	0%	13%
Superdistrict 2 / Northwest Quadrant	10%	7%	11%	0%	0%	9%
Superdistrict 3 / Southeast Quadrant	22%	9%	11%	0%	0%	17%
Superdistrict 4 / Southwest Quadrant	7%	20%	19%	0%	0%	11%
Outside of San Francisco						
East Bay	12%	15%	14%	0%	0%	13%
North Bay	8%	7%	8%	0%	0%	8%
South Bay	33%	12%	15%	0%	0%	26%
Out of Region	0%	8%	6%	0%	0%	3%
Total	***100%***	***100%***	***100%***	***0%***	***0%***	***100%***

Notes:

1. Trip distribution accounts for external trips only.
2. No new child care or residential external person trips would be generated by 2015.

Source: Adavant Consulting, 2014

As shown above, a majority of net peak hour trips come from the South Bay, while a sizeable portion of staff, patients and visitors, and other visitors come from the Northeast and Southwest quadrants of San Francisco. UCSF staff does not anticipate net new trips generated from child care or residents by 2015. **Figure 3-2** shows general directions of approach and departure of LRDP-generated trips, based on the percentages presented in **Table 3-9**.

Figure 3-2

2015 Net New Trip Distribution-Mission Bay

Table 3-4 indicates that the 2014 LRDP would generate approximately 33,750 net new external daily person trips at the Mission Bay site by 2040. Due to the different mix in population growth between 2015 and 2040, the trip distribution for the project trips in 2015 differs slightly from that of year 2040. **Table 3-10** shows the year 2040 trip distribution which includes the net new trips between the existing and year 2040.

TABLE 3-10: MISSION BAY CAMPUS SITE – 2040 PEAK HOUR TRIP DISTRIBUTION BY POPULATION GROUP[1]

Population Group	Staff	Patient and Visitors	Other Visitors	Child care	Residential	All Population Groups Combined
San Francisco						
Superdistrict 1 / Northeast Quadrant	7%	22%	16%	7%	44%	11%
Superdistrict 2 / Northwest Quadrant	8%	7%	11%	8%	5%	8%
Superdistrict 3 / Southeast Quadrant	19%	9%	10%	19%	38%	18%
Superdistrict 4 / Southwest Quadrant	6%	20%	19%	6%	6%	9%
Outside of San Francisco						
East Bay	14%	15%	14%	14%	3%	13%
North Bay	9%	7%	8%	9%	1%	9%
South Bay	37%	12%	15%	37%	3%	30%
Out of Region	0%	8%	7%	0%	0%	2%
Total	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***

Notes:

1. Trip distribution accounts for external trips only,

Source: Adavant Consulting, 2014

As shown in **Table 3-10**, a majority of staff and Child care trips would come to/from the South Bay and Superdistrict 3, the Southeast quadrant of San Francisco. Most patients and visitors and other visitors are from Superdistricts 1 and 4, the Northeast and Southwest quadrants of San Francisco, with a sizeable amount coming from the East Bay and South Bay areas. A majority of residential trips are distributed to Superdistricts 1 and 3, the Northeast and Southeast quadrants of the City, with few residents traveling outside of San Francisco. **Figure 3-3** shows general directions of approach and departure of LRDP-generated trips, based on the percentages presented in **Table 3-10**.

Figure 3-3

2040 Net New Trip Distribution-Mission Bay

3.4.3 Mount Zion

Table 3-4 shows approximately 3,220 additional external person trips at the Mount Zion campus site by 2040. These new external trips have been distributed regionally as previously described. The resulting trip distribution percentages are shown in **Table 3-11**.

TABLE 3-11: MOUNT ZION CAMPUS SITE – 2040 PEAK HOUR TRIP DISTRIBUTION BY POPULATION GROUP[1]

Population Group	Staff	Patient and Visitors	Other Visitors	All Population Groups Combined
San Francisco				
Superdistrict 1 / Northeast Quadrant	4%	34%	24%	10%
Superdistrict 2 / Northwest Quadrant	18%	25%	20%	19%
Superdistrict 3 / Southeast Quadrant	8%	10%	12%	8%
Superdistrict 4 / Southwest Quadrant	8%	16%	15%	9%
Outside of San Francisco				
East Bay	21%	3%	12%	18%
North Bay	13%	3%	10%	11%
South Bay	28%	10%	3%	25%
Out of Region[2]	0%	-1%	4%	0%
Total	***100%***	***100%***	***100%***	***100%***

Notes:

1. Trip distribution accounts for external trips only,
2. Negative trip distribution percentage occurs because the net peak hour trips origin/destination is less than the existing conditions.

Source: Adavant Consulting, 2014

As shown above, a majority of staff would come from outside of San Francisco, with almost 30-percent arriving from the South Bay. Unlike staff, most patients, visitors and other visitors are distributed within San Francisco. **Figure 3-4** shows general directions of approach and departure of LRDP-generated trips, based on the percentages presented in **Table 3-11**.

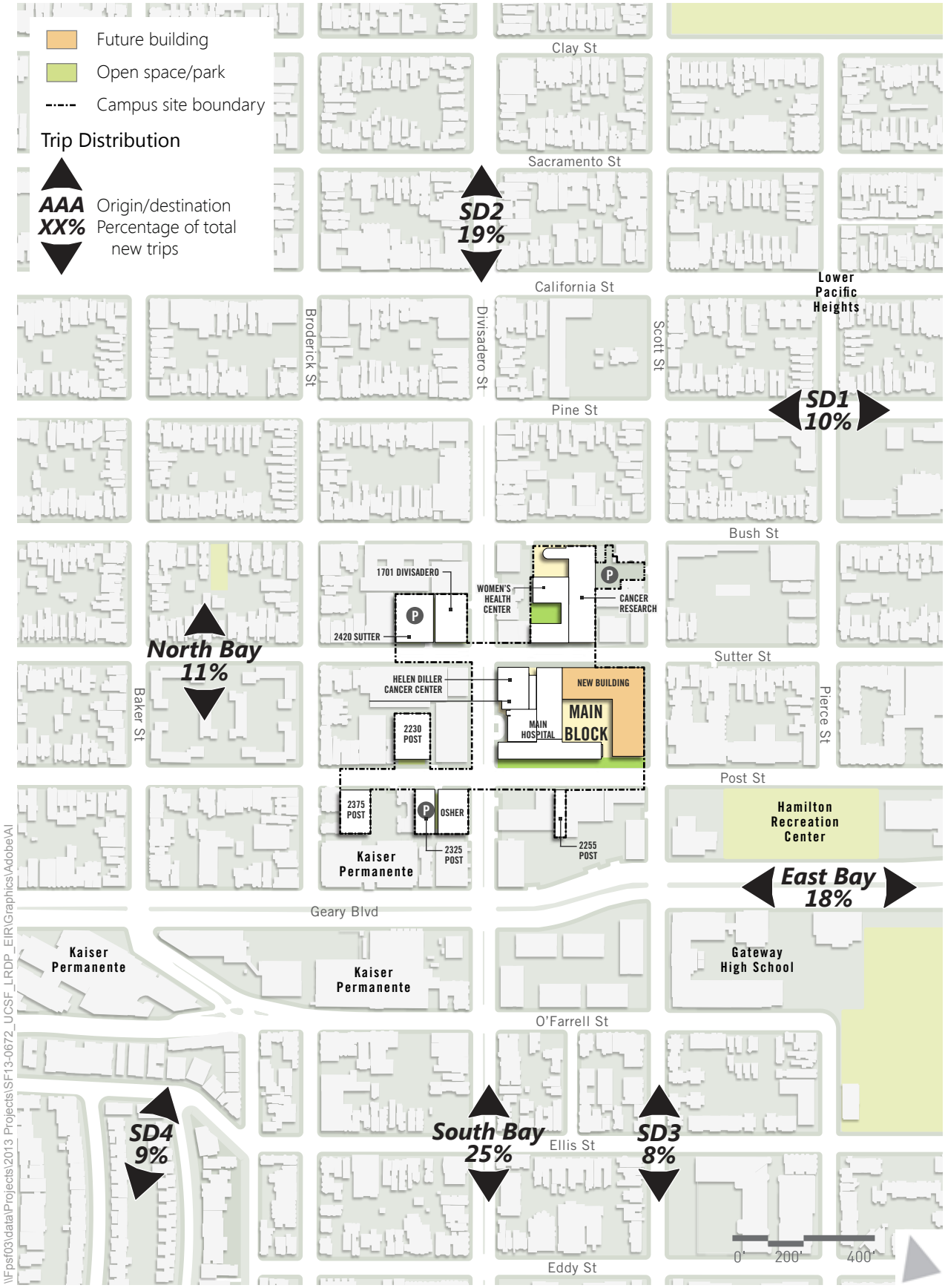


Figure 3-4

2040 Net New Trip Distribution-Mount Zion

3.4.4 Mission Center

Table 3-4 shows 1,064 external trips at the Mission Center campus site. These external trips have been distributed regionally as previously described in the document. The resulting trip distribution percentages are summarized in **Table 3-12**.

TABLE 3-12: MISSION CAMPUS SITE – 2040 PEAK HOUR TRIP DISTRIBUTION BY POPULATION GROUP[1]

Population Group	Staff	Other Visitors	All Population Groups Combined
San Francisco			
Superdistrict 1 / Northeast Quadrant	8%	16%	8%
Superdistrict 2 / Northwest Quadrant	10%	11%	10%
Superdistrict 3 / Southeast Quadrant	22%	11%	22%
Superdistrict 4 / Southwest Quadrant	7%	19%	8%
Outside of San Francisco			
East Bay	16%	14%	16%
North Bay	5%	8%	6%
South Bay	30%	15%	28%
Out of Region	2%	6%	2%
Total	***100%***	***100%***	***100%***

Notes:

1. Trip distribution accounts for external trips only,

Source: Adavant Consulting, 2014

As shown in **Table 3-12** approximately half of the staff and other visitors are distributed in San Francisco while the remaining half is distributed outside of the City. **Figure 3-5** shows general directions of approach and departure of LRDP-generated trips, based on the percentages presented in **Table 3-12**.

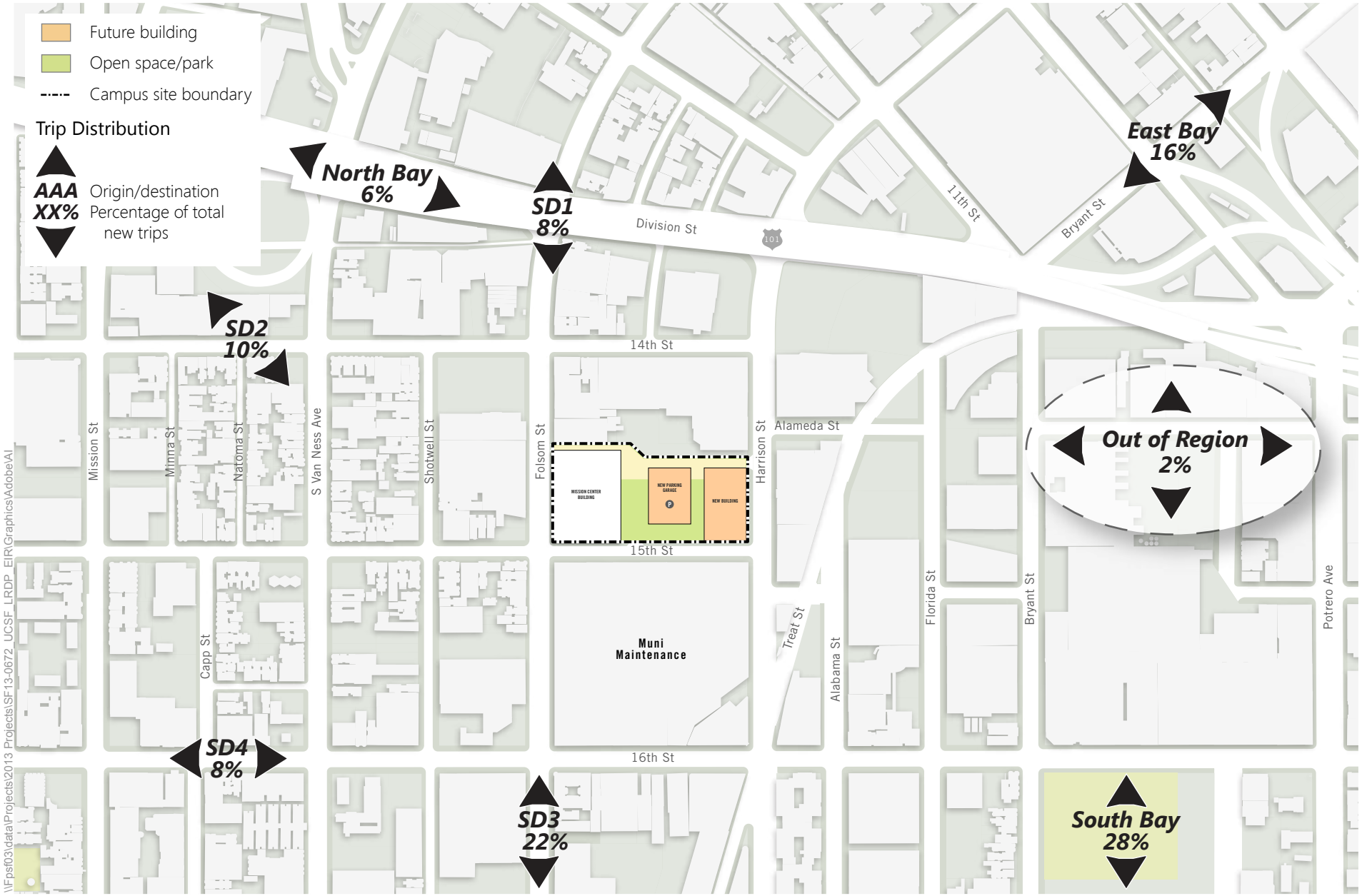


Figure 3-5

2040 Net New Trip Distribution-
Mission Center

3.5 PEAK HOUR TRIP GENERATION

The AM and PM peak hour trips were then estimated by applying appropriate peak hour factors to the daily trips presented in Table 3-13. The peak hour trips were, in turn, allocated as inbound or outbound to each campus site, depending on the time period. The peak hour assumptions differ slightly by campus site according to field survey data, and are summarized in **Table 3-13**.

TABLE 3-13: AM AND PM PEAK HOUR % OF DAILY TRAVEL ASSUMPTIONS FOR EXTERNAL TRIPS

Population Group	AM Peak Hour			PM Peak Hour		
	% of Daily	% Inbound	% Outbound	% of Daily	% Inbound	% Outbound
Parnassus Heights						
Staff	18.1%	97.6%	2.4%	15.0%	4.3%	95.7%
Patients and Visitors	12.6%	84.4%	15.6%	11.8%	20.0%	80.0%
Other Visitors	15.7%	82.7%	17.3%	6.8%	17.6%	82.4%
Child care	48.2%	64.3%	35.7%	48.2%	35.7%	64.3%
Residential	15.5%	18.8%	81.3%	15.7%	77.9%	22.1%
Total	16.9%	67.7%	32.3%	15.3%	35.6%	64.4%
Mission Bay						
Staff	21.9%	99.9%	0.1%	19.4%	2.7%	97.3%
Patients and Visitors	11.5%	78.5%	21.5%	8.5%	23.2%	76.8%
Other Visitors	16.2%	82.6%	17.4%	7.1%	16.4%	83.6%
Child care	42.6%	58.0%	42.0%	42.6%	42.0%	58.0%
Residential	12.0%	16.7%	83.3%	16.4%	76.9%	23.1%
Total	18.4%	92.7%	7.3%	15.8%	9.8%	90.2%
Mount Zion						
Staff	19.8%	100.0%	0.0%	17.0%	5.0%	95.0%
Patients and Visitors	23.7%	60.1%	39.9%	5.2%	50.0%	50.0%
Other Visitors	11.3%	44.4%	55.6%	8.8%	28.6%	71.4%
Total	21.7%	76.1%	23.9%	10.5%	17.4%	82.6%
Mission Center						
Staff	22.6%	100.0%	0.0%	21.8%	3.2%	96.8%
Other Visitors	18.3%	81.8%	18.2%	6.7%	0.0%	100.0%
Total	22.4%	99.2%	0.8%	21.0%	3.1%	96.9%

Source: Adavant Consulting, 2014

3.6 PEAK HOUR TRIP ASSIGNMENT

External project trips summarized in **Table 3-4** are then assigned to specific modes and routes that LRDP-generated AM and PM peak hour trips would likely take to and from each campus site. Vehicle trips are

assigned to roadways and intersection turning movements according to the trip distribution percentages identified in the previous section. Similarly, transit trips are assigned to specific transit service providers and routes using the trip distribution and mode split percentages from the tables above based on the most direct transit route to and from their origin or destination.

The subsections below describe the peak hour vehicle and transit trip assignments for the four major campus sites.

3.6.1 Parnassus Heights

The Parnassus Heights campus site would generate 1,927 net new external daily person trips of which 405 would be vehicle trips and 1,037 would be transit (public transit plus UCSF shuttle bus service) riders. Approximately 17 percent of daily trips would be expected to occur during the AM peak hour and about 15 percent during the PM peak hour. **Table 3-14** shows the AM and PM peak hour new vehicle trips by population group, **Table 3-15** shows the AM and PM peak hour additional transit trips by transit service provider, and **Table 3-16** shows the AM and PM peak hour pedestrian and bicycle trips.

TABLE 3-14: PARNASSUS HEIGHTS CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR VEHICLE TRIPS[1]

Population Group	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Staff	18	4	22	2	21	23
Patients and Visitors	6	0	6	1	3	4
Other Visitors	0	0	28	0	0	0
Child care	11	10	21	10	10	20
Residential	14	32	46	32	13	45
Total	***49***	***46***	***95***	***45***	***47***	***92***

Notes:

1. Peak hour trips account for external trips only. Includes UCSF shuttle vehicles.

Source: Adavant Consulting, 2014

TABLE 3-15: PARNASSUS HEIGHTS CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR TRANSIT TRIPS[1]

Transit Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
SF Muni	45	12	57	18	39	57
BART	12	1	13	2	10	12
AC Transit	1	0	1	0	1	1
Caltrain	1	0	1	0	1	1
SamTrans	1	0	1	0	1	1
Golden Gate Transit	2	0	2	0	2	2
UCSF Shuttle	60	57	117	48	46	94
Total	***122***	***70***	***192***	***68***	***100***	***168***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+Muni, AC Transit+Muni, Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, Fehr & Peers, 2014

TABLE 3-16: PARNASSUS HEIGHTS CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR WALK AND BICYCLE TRIPS[1]

Mode	AM Peak Hour	PM Peak Hour
Walk	36	33
Bicycle	17	15
Total	***53***	***48***

Notes:

1. Peak hour trips account for external trips only. Accounts for pedestrians or bicyclists walking/biking as their main mode of travel to the campus site.

Source: Adavant Consulting, 2014

As shown in **Table 3-14**, approximately 95 new vehicle trips would occur during the AM and PM peak with approximately half entering and half exiting the site. **Table 3-15** shows approximately 190 new transit riders in the AM peak hour and 170 new transit riders in the PM peak hour. A majority of transit users would be expected to travel to/from the campus site by Muni and the UCSF shuttle bus service. **Table 3-16** shows approximately 50 new pedestrians and bicyclists are expected during the AM and PM peak hour.

3.6.2 Mission Bay

The Mission Bay campus site would generate 9,420 net new external daily person trips by 2015 (completion of Phase One Medical Center and Mission Hall projects) of which 4,051 would be vehicle trips and 1,491 would be transit (public transit plus UCSF shuttle bus service) riders. Approximately 18 percent of daily trips would occur during the AM peak hour and about 16-percent during the PM peak hour. **Table 3-17** shows the 2015 AM and PM peak hour additional vehicle trips by population group, **Table**

3-18 shows the AM and PM peak hour new transit trips by transit service provider, and **Table 3-19** shows AM and PM peak hour walk and bicycle trips.

TABLE 3-17: MISSION BAY CAMPUS SITE – EXISTING TO 2015 NEW PEAK HOUR VEHICLE TRIPS[1]

Population Group	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Staff	407	15	422	17	297	314
Patients and Visitors	167	46	213	38	120	158
Other Visitors	39	8	47	3	17	20
Child care	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Total	**613**	**69**	**682**	**58**	**434**	**492**

Notes:

1. Peak hour trips account for external trips only. Includes UCSF shuttle vehicles.

Source: Adavant Consulting, 2014

TABLE 3-18: MISSION BAY CAMPUS SITE – EXISTING TO 2015 NEW PEAK HOUR TRANSIT TRIPS[1]

Transit Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
SF Muni	208	19	227	17	160	178
BART	155	13	168	13	123	136
AC Transit	22	2	25	2	19	21
Caltrain	36	3	39	3	28	31
SamTrans	6	1	7	1	5	5
Golden Gate Transit	7	1	8	1	5	6
Other	19	2	21	2	15	17
UCSF Shuttle	188	3	191	6	161	167
Total	***641***	***44***	***685***	***44***	***516***	***561***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+SF Muni, AC Transit+SF Muni, SF Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

TABLE 3-19: MISSION BAY CAMPUS SITE – EXISTING TO 2015 NEW PEAK HOUR WALK AND BICYCLE TRIPS[1]

Mode	AM Peak Hour	PM Peak Hour
Walk	315	244
Bicycle	276	214
Total	***591***	***458***

Notes:

1. Peak hour trips account for external trips only. Accounts for pedestrians or bicyclists walking/biking as their main mode of travel to the campus site.

Source: Adavant Consulting, 2014

As shown in **Table 3-17**, approximately 610 new vehicles are estimated to arrive and 70 vehicles are estimated to depart, totaling about 680 new vehicle trips during the AM peak hour. There are an estimated 60 vehicles estimated to arrive and 430 vehicles estimated to depart during the PM peak hour, totaling approximately 490 additional vehicles at the campus site. **Table 3-18** shows that approximately 690 and 560 new transit riders would arrive or depart the campus site during the AM and PM peak hour, respectively. A majority of transit users at the Mission Bay campus site are expected to use SF Muni, BART, and the UCSF shuttle bus service. **Table 3-19** shows approximately 590 new pedestrians and bicyclists during the AM and approximately 460 new pedestrians and bicyclists during the PM peak hour.

By the year 2040, the Mission Bay campus site would generate 33,749 net new external daily trips of which 14,974 would be vehicle trips and 12,728 would be transit trips. Approximately 18-percent of daily trips would occur during the AM peak hour and about 16-percent during the PM peak hour. **Table 3-20** shows the year 2040 AM and PM peak hour additional vehicle trips by population group, **Table 3-21** the AM and PM peak hour new transit trips by transit service provider, and **Table 3-22** shows the AM and PM peak hour walk and bicycle trips.

TABLE 3-20: MISSION BAY CAMPUS SITE – EXISTING TO 2040 NEW PEAK HOUR VEHICLE TRIPS[1]

Transit Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Staff	1,909	71	1,980	107	1,631	1,738
Patients and Visitors	389	108	497	88	277	365
Other Visitors	175	37	212	16	78	94
Child care	61	57	118	57	61	118
Residential	27	46	73	65	33	98
Total	**2,561**	**319**	**2,880**	**333**	**2,080**	**2,413**

Notes:

1. Peak hour trips account for external trips only. Includes UCSF shuttle vehicles.

Source: Adavant Consulting, 2014

TABLE 3-21: MISSION BAY CAMPUS SITE – EXISTING TO 2040 NEW PEAK HOUR TRANSIT TRIPS [1]

Transit Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
SF Muni	880	57	937	70	766	836
BART	692	38	730	48	610	658
AC Transit	103	5	108	7	88	96
Caltrain	147	9	155	11	132	143
SamTrans	25	1	26	2	23	25
Golden Gate Transit	26	2	28	2	23	25
Other	74	6	80	6	65	71
UCSF Shuttle	1,039	75	1,114	105	964	1,069
Total	***2,986***	***193***	***3,178***	***251***	***2,671***	***2,923***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+SF Muni, AC Transit+SF Muni, SF Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

TABLE 3-22: MISSION BAY CAMPUS SITE – EXISTING TO 2040 NEW PEAK HOUR WALK AND BICYCLE TRIPS[1]

Mode	AM Peak Hour	PM Peak Hour
Walk	498	427
Bicycle	374	320
Total	***872***	***747***

Notes:

2. Peak hour trips account for external trips only. Accounts for pedestrians or bicyclists walking/biking as their main mode of travel to the campus site.

Source: Adavant Consulting, 2014

As shown in **Table 3-20**, approximately 2,560 vehicles are estimated to arrive and 320 vehicles are estimated to depart the campus site during the AM peak hour, totaling 2,880 new vehicle trips. There would be an estimated 330 vehicles arriving and 2,080 vehicles departing the campus site during the PM peak hour, totaling 2,410 new vehicles. By 2040, transit usage is expected to increase by about 3,180 and 2,920 riders during the AM and PM peak hour, respectively. Most transit riders would be expected to use SF Muni, BART, and the UCSF shuttle bus service. **Table 3-22** shows approximately 870 new pedestrians and bicyclists during the AM and approximately 750 new pedestrians and bicyclists during the PM peak hour.

3.6.2.1 LRDP Variant

Under the LRDP Variant, the Mission Bay campus site would generate slightly more vehicle trips than the LRDP. As shown in **Table 3-23**, approximately 2,620 new vehicles are estimated to arrive and 330 vehicles are estimated to depart, totaling about 2,950 new vehicle trips during the AM peak hour. There are an

estimated 340 vehicles estimated to arrive and 2,110 vehicles estimated to depart during the PM peak hour, totaling approximately 2,450 additional vehicles at the campus site. These represent increases of approximately two percent in the total number of vehicles generated by the LRDP Variant when compared to the LRDP during both the AM and PM peak hours. As shown in **Table 3-24,** the LRDP Variant is estimated to generate approximately 3,000 new transit trips during the AM peak hour and 3,000 new transit trips during the PM peak hour, a two to three percent increase when compared to the 2014 LRDP.

TABLE 3-23: MISSION BAY CAMPUS SITE – EXISTING TO 2040 LRDP VARIANT NEW PEAK HOUR VEHICLE TRIPS[1]

Population Group	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Staff	1,906	70	1,976	105	1,620	1,725
Patients and Visitors	448	124	572	100	320	420
Other Visitors	175	37	212	16	78	94
Child care	61	57	118	57	61	118
Residential	27	46	73	65	33	98
Total	**2,617**	**334**	**2,951**	**343**	**2,112**	**2,455**

Notes:

1. Peak hour trips account for external trips only. Includes UCSF shuttle vehicles.

Source: Adavant Consulting, 2014

TABLE 3-24: MISSION BAY CAMPUS SITE – EXISTING TO 2040 LRDP VARIANT NEW PEAK HOUR TRANSIT TRIPS [1]

Transit Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
SF Muni	908	64	972	75	787	862
BART	706	43	749	52	620	672
AC Transit	104	6	110	8	89	97
Caltrain	151	6	157	11	136	147
SamTrans	27	1	28	2	23	25
Golden Gate Transit	27	3	30	3	23	26
Other	78	5	83	7	66	73
UCSF Shuttle	1,068	81	1,149	114	985	1,099
Total	**3,069**	**209**	**3,278**	**272**	**2,729**	**3,001**

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+SF Muni, AC Transit+SF Muni, SF Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

The travel demand for other modes including walking and bicycling would be commensurate with the percentage increase, approximately two to three percent, in new peak hour vehicle and transit trips generated by the 2014 LRDP plan for the Mission Bay campus site.

3.6.3 Mount Zion

The Mount Zion campus site would generate 3,223 net new external person trips through the LRDP horizon year (2035) of which 1,292 would be vehicle trips and 975 would be transit trips. Approximately 22-percent of daily trips would occur during the AM peak hour and 11-percent during the PM peak hour. **Table 3-25** shows the new AM and PM peak hour vehicle trips at the Mount Zion campus site by population group, **Table 3-26** shows the new AM and PM peak hour transit trips by transit service provider, and **Table 3-27** shows the peak hour pedestrian and bicycle trips.

TABLE 3-25: MOUNT ZION CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR VEHICLE TRIPS[1]

Population Group	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Staff	146	2	148	8	112	120
Patients and Visitors	84	56	140	12	12	24
Other Visitors	3	2	5	2	4	6
Child care	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Total	***233***	***60***	***293***	***22***	***128***	***150***

Notes:

1. Peak hour trips account for external trips only. Includes UCSF shuttle vehicles.

Source: Adavant Consulting, Fehr & Peers, 2014

TABLE 3-26: MOUNT ZION CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR TRANSIT TRIPS[1]

Transit Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
SF Muni	127	39	166	13	71	84
BART	39	5	44	2	28	30
Caltrain	4	0	4	0	3	3
SamTrans	4	0	4	0	3	3
Golden Gate Transit	13	2	15	0	8	8
UCSF Shuttle	29	0	29	3	24	27
Total	***216***	***46***	***262***	***18***	***137***	***155***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. SF BART+SF Muni, AC Transit+SF Muni, SF Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

TABLE 3-27: MOUNT ZION CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR WALK AND BICYCLE TRIPS[1]		
Mode	**AM Peak Hour**	**PM Peak Hour**
Walk	42	41
Bicycle	21	11
Total	***63***	***52***

Notes:

1. Peak hour trips account for external trips only. Accounts for pedestrians or bicyclists walking/biking as their main mode of travel to the campus site.

Source: Adavant Consulting, 2014

As shown in **Table 3-25**, approximately 230 vehicles are estimated to arrive and 60 vehicles are estimated to depart the campus site, totaling approximately 290 new vehicle trips during the AM peak hour. Approximately 20 new vehicles would arrive and about 130 vehicles would depart the campus site, totaling 150 new vehicles during the PM peak hour. As summarized in **Table 3-26**, it is estimated that approximately 260 and 160 new transit riders would arrive or depart the campus site during the AM and PM peak hours, respectively. A majority of transit users are expected to arrive/depart by SF Muni. **Table 3-27** shows approximately 60 new AM peak hour walk and bicycle trips and 50 new PM peak hour walk and bicycle trips.

3.6.4 Mission Center

The Mission Center campus site would generate 1,064 net new external trips through the LRDP horizon year (2035) of which 539 would be vehicle trips and 410 would be transit trips. Approximately 22-percent of daily trips would occur during the AM peak hour and about 21-percent during the PM peak hour. **Table 3-28** shows the new AM and PM peak hour vehicle trips by population group at the Mission Center campus site, **Table 3-29** shows the AM and PM peak hour new transit trips by transit service provider, and **Table 3-30** shows the AM and PM peak hour walk and bicycle trips.

TABLE 3-28: MISSION CENTER CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR VEHICLE TRIPS[1]						
Population Group	**AM Peak Hour**			**PM Peak Hour**		
	In	**Out**	**Total**	**In**	**Out**	**Total**
Staff	109	2	111	5	100	105
Patients and Visitors	0	0	0	0	0	0
Other Visitors	9	2	11	0	4	4
Child care	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Total	***118***	***4***	***122***	***5***	***104***	***109***

Notes:

1. Peak hour trips account for external trips only. Includes UCSF shuttle vehicles.

Source: Adavant Consulting, Fehr & Peers, 2014

TABLE 3-29: MISSION CENTER CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR TRANSIT TRIPS[1]

Transit Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
SF Muni	38	0	38	0	36	36
BART	24	0	24	1	23	24
Caltrain	6	0	6	0	6	6
SamTrans	2	0	2	0	2	2
Golden Gate Transit	4	0	4	0	4	4
UCSF Shuttle	31	0	31	1	28	29
Total	***105***	***0***	***105***	***2***	***99***	***101***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+SF Muni, AC Transit+SF Muni, SF Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

TABLE 3-30: MISSION CENTER CAMPUS SITE – EXISTING TO 2035 NEW PEAK HOUR WALK AND BICYCLE TRIPS[1]

Mode	AM Peak Hour	PM Peak Hour
Walk	8	7
Bicycle	15	14
Total	***23***	***21***

Notes:

1. Peak hour trips account for external trips only. Accounts for pedestrians or bicyclists walking/biking as their main mode of travel to the campus site.

Source: Adavant Consulting, 2014

As shown in **Table 3-28**, 118 vehicles are estimated to arrive and 4 vehicles are estimated to depart the Mission Center campus site, totaling 122 new vehicle trips during the AM peak hour. There would be an estimated five vehicles arriving and 104 vehicles departing the campus site, totaling 109 new vehicles during the PM peak hour. **Table 3-29** shows that 105 and 101 new transit riders would arrive or depart the campus site during the AM and PM peak hour, respectively. A majority of transit users at the Mission Center campus site would be expected to use SF Muni, BART, or the UCSF bus shuttle service. **Table 3-30** shows approximately 20 new AM and PM peak hour walk and bicycle trips.

3.7 LOADING DEMAND

The *SF Guidelines* methodology for estimating commercial vehicle and freight loading demand is typically used to calculate the demand associated with new development projects in San Francisco. Daily truck trips

are calculated based on gross square-footage, a nine-hour day, and a 25-minute average stay. Average hourly demand can then be converted to a peak hour demand by applying peaking factors specified in the *SF Guidelines*. **Table 3-31** shows the calculated demand based on the gross square feet (GSF) estimates by 2035/2040.

TABLE 3-31: EXISTING AND FUTURE ESTIMATED OFF-STREET LOADING DEMAND (BASED ON SF GUIDELINES)[1]

Campus	Existing Demand		Future Demand [2]		Growth	
	Daily	Peak Hour	Daily	Peak Hour	Daily	Peak Hour
Parnassus Heights	1,722	100	1,753	101	31	2
Mission Bay	671	39	2,185	126	1,514	88
Mount Zion	566	33	673	39	106	6
Mission Center	133	8	175	10	42	2
Total	3,092	180	4,786	276	1,693	98

Notes:

1. Estimated loading demand based on existing and LRDP proposed GSF. Calculations based on *SF Guidelines*, Appendix D, Freight Delivery and Service Demand Methodology.
2. The data shown in this table reflects the future off-street loading demand through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Table 3-31 shows that all campus sites should anticipate an increase in daily and peak hour loading demand. However, since the campus sites are unique trip generators, wherein multiple complimentary land uses exist at each campus site, rather than a single land use (e.g. office, research, etc.), loading demand was estimated based on existing loading surveys conducted at the Parnassus Heights campus site and then applied to the other campus sites. Daily (7:00 AM to 7:00 PM) loading data was observed for three average weekdays in October 2013 at approximately half of the 54 loading spaces at the Parnassus Heights campus site. The survey recorded the arrival and departure time of each delivery/pick-up, thereby denoting the number of loading trips and duration of each trip. **Table 3-32** shows the results of the data collection efforts at the Parnassus Heights campus site.

TABLE 3-32: PARNASSUS HEIGHTS – EXISTING LOADING DEMAND[1]

Daily	AM Peak Hour	Average Loading Duration	Existing 1,000 GSF	Average Loading Trip per 1,000 GSF
337	56	30 minutes	3,956	0.09

Notes:

1. Daily and AM peak hour loading demand estimated using a factor calculated from data collected at 21 of the 54 loading spaces than factored up to account for all loading spaces.

Source: Fehr &Peers, 2013

Table 3-32 shows that the Parnassus Heights campus site receives on average 0.09 loading trips per 1,000 GSF, yielding 337 daily trips and 56 AM peak hour trips. Data collected noted that each loading space was occupied for an average of 30 minutes.

Using the empirical data shown in **Table 3-32**, a factor was applied to the *SF Guidelines* rates to calibrate the loading demand rates such that they match the existing data collected at the Parnassus Heights campus site. The factor derived from observations at the Parnassus Heights campus site was selected to apply to the other campus sites because the Parnassus Heights campus site represents the most established campus site with the largest diversity of uses. This factor tends to result in more specialized deliveries for specific uses, making this an inherently conservative analysis. **Table 3-33** summarizes the revised existing and future year off-street loading demand when the same factor is applied to the other campus sites. The estimates shown in **Table 3-33** more accurately reflect the existing loading demand at each campus site, and thus more accurately forecast both the future loading demand at each campus site, but also the loading demand associated with the 2014 LRDP projects in place at each campus site.

TABLE 3-33: EXISTING AND FUTURE ESTIMATED OFF-STREET LOADING DEMAND[1]

Campus	Existing Demand (2012/2013)		Future Demand (2035/2040) [2]		Growth	
	Daily	Peak Hour	Daily	Peak Hour	Daily	Peak Hour
Parnassus Heights	336	52	351	55	15	2
Mission Bay	220	34	497	77	277	43
Mount Zion	80	13	102	16	21	3
Mission Center	25	4	41	6	17	3
Total	662	103	992	154	330	51

Notes:

1. Estimated loading demand based on existing, LRDP proposed GSF, and loading data collected at Parnassus Heights.
2. The data shown in this table reflects the future off-street loading demand through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Source: Fehr & Peers, 2014

Table 3-33 results for the Parnassus Heights campus site are similar to the data collected and summarized in **Table 3-32**. **Table 3-33** shows that through 2035/2040, approximately two or three additional peak hour loading trips will be added to each campus site except at Mission Bay, which will generate approximately 40 new loading trips. The estimated increase in loading trips at Mission Bay is reasonable since it includes the new Phase One Medical Center and Mission Hall projects that will become operational in 2015, the 991,800 gross square feet of development being proposed by the 2014 LRDP, and the Phase Two Medical Center project planned to open sometime after 2035, which together would nearly triple the existing square footage at the campus site. The estimated increase in loading trips at the Mission Bay campus site under the LRDP Variant would likely increase by a similar amount to the vehicle and transit trips (approximately two to three percent increase) due to the introduction of clinical space, to that generated by the LRDP.

UCSF shuttles stop at loading zones located on city streets at the Parnassus Heights, Mission Bay, and Mount Zion campus sites. The shuttle loading zone is internal to the campus at the Mission Center campus site. The loading zones are white curb spaces that accommodate UCSF shuttles at the curbside. As part of existing observations documented in Chapter 2, loading demand of existing shuttle vehicles was observed to be accommodated within the existing loading zones. Per Section 1.2.6, UCSF Transportation Services audits shuttle vehicle loading and operations on a regular basis. In the event that UCSF identifies a need for an expanded or additional loading zone, they would apply to SFMTA for an expanded white

curb loading area for shuttle buses at a location that would not interfere with Muni vehicle passenger loading.

3.7.1 Passenger Loading Demand

In order to estimate passenger loading demand at each campus site, the drop-off/taxi service mode split and a portion of the carpool mode split percentages presented in **Table 3-6** was applied to the peak AM and PM peak hour person trips. **Table 3-34** summarizes the estimated passenger loading trips for the existing and 2035/2040 as well as both the delta and percent growth generated by the LRDP.

TABLE 3-34: EXISTING AND FUTURE ESTIMATED PASSENGER LOADING DEMAND[1]

Campus Site	Mode Split [2]	Existing Demand (2012/2013)		Future Demand (2035/2040) [3]		Growth		Percent Growth	
		AM	PM	AM	PM	AM	PM	AM	PM
Parnassus Heights	6.2%	368	333	388	351	20	18	*5%*	*5%*
Mission Bay	3.8%	88	75	324	278	236	203	*268%*	*271%*
Mount Zion	7.6%	154	74	207	100	53	26	*34%*	*35%*
Mission Center	1.5%	6	5	9	9	3	4	*50%*	*80%*
Total		*616*	*487*	*928*	*738*	312	251	*51%*	*52%*

Notes:

1. Peak hour trips account for external trips only.
2. Analysis assumes additional 10% of estimated carpool/vanpool use drop-off/passenger loading area before parking.
3. The data shown in this table reflects the future passenger loading demand through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Source: Adavant Consulting, 2014

Table 3-34 shows that the expected peak hour passenger loading demand will increase by approximately 5 percent at the Parnassus Heights campus site. The Mount Zion campus site is anticipated to increase its peak hour passenger loading demand by approximately 35 percent and the Mission Center campus site is anticipated to increase by approximately 50- to 80-percent. Passenger loading growth is anticipated to increase at the Mission Bay campus site by roughly threefold. The major contributor of the increase in anticipated passenger loading demand is the opening of Phases One and Two of the Medical Center at Mission Bay. The estimated increase in passenger loading trips at the Mission Bay campus site under the LRDP Variant would likely increase by a similar amount to the vehicle and transit trips (approximately two to three percent increase) due to the introduction of clinical space, to that generated by the LRDP.

3.8 PARKING DEMAND

Parking demand estimates for the four campus sites were calculated based on the current and projected population (physicians, staff and visitors, child care, residents, etc.) information at each campus site, as well as the expected mode of travel to/from each campus site, as described in Section 3.4.

Thus, forecasting the net new parking demand of the LRDP involves estimating the number of daily parked vehicles generated by the LRDP at each campus site, less the current demand at each campus site. The number of daily parked vehicles includes all vehicles arriving at each campus site, but excluding taxis, UCSF shuttle buses, and those who drop-off or pick up staff, patients, or visitors.

The resulting increases in daily vehicle parking for a typical weekday at each campus site are summarized in **Table 3-35** by population group.

Table 3-35 shows that in total, the four campus sites are expected to generate approximately 7,600 new daily parked vehicles on a typical weekday, which represents an increase of approximately 76 percent over current values. Over 85 percent of the additional daily parked vehicles would occur at the Mission Bay campus site. The increase in parked vehicles from existing conditions includes Phase One Medical Center and Mission Hall at the Mission Bay campus site (approximately 1,780 vehicles), which are not part of the 2014 LRDP growth.

The number of daily parked vehicles is then adjusted in order to estimate the peak parking space demand, as different vehicles would occupy the same parking space during the day in many instances, for example, in the case of staff, patients or visitors arriving for different work shifts or medical appointments throughout the day. Thus, the peak parking space demand ratios are equal (one vehicle parks in a space all day) or less (multiple vehicles park in the same space throughout the day) than one, depending on the population group.

TABLE 3-35: EXISTING AND FUTURE DAILY VEHICLE PARKING ESTIMATES ON A TYPICAL WEEKDAY BY CAMPUS SITE AND POPULATION GROUP

Population Group	Existing Daily Vehicle Parking (2012/13)	Future Daily Vehicle Parking (2035/2040) [1]	Growth
Parnassus Heights			
Staff	3,602	3,623	21
Patients and Visitors	1,502	1,502	0
Other Visitors	510	510	0
Child care	6	8	2
Residential	218	435	217
Sub-Total	***5,838***	***6,078***	***240***
Mission Bay			
Staff	1,138	4,861	3,723
Patients and Visitors	73	1,948	1,875
Other Visitors	422	1,007	585
Child care	7	15	8
Residential	396	797	401
Sub-Total	***2,036***	***8,628***	***6,592***
Mount Zion			
Staff	814	1,098	284
Patients and Visitors	757	962	205
Other Visitors	92	119	27
Sub-Total	***1,663***	***2,179***	***516***
Mission Center			
Staff	361	587	226
Other Visitors	60	90	30
Sub-Total	***421***	***677***	***256***
Four Campus Sites			
Staff	5,915	10,169	4,254
Patients and Visitors	2,332	4,412	2,080
Other Visitors	1,084	1,726	642
Child care	13	23	10
Residential	614	1,232	618
Grand Total	***9,958***	***17,562***	***7,604***

Note:

1. The data shown in this table reflects the future number of daily parked vehicles through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Source: Adavant Consulting, 2014

The peak parking space demand ratios used in the analysis are summarized in **Table 3-36** by population group. They have been derived from previous parking studies conducted at the UCSF campus sites, including the 2008 Medical Center at Mission Bay EIR and the 1996 LRDP EIR.

TABLE 3-36: PEAK PARKING SPACE DEMAND RATES BY POPULATION GROUP

Population Group	Peak Parking Space Demand Rate
Staff	0.85
Patients	0.30
Visitors	0.40
Vendors and Services	0.60
Residents	1.00

Source: UCSF, Adavant Consulting, 2014

Table 3-37 provides an estimate of the additional number of parking spaces that would be occupied at each campus site during the peak parking demand period, typically from mid-morning until early afternoon, as a result of the LRDP. In total, the four campus sites are expected to generate a peak demand of approximately 5,200 new parking spaces on a typical weekday. Over 85 percent of the additional demand for parking spaces (about 4,470) would occur at the Mission Bay campus site. The estimated increase in parking demand at the Mission Bay campus site under the LRDP Variant would likely increase by a similar amount to the vehicle and transit trips (approximately two to three percent increase) due to the introduction of clinical space, to that generated by the LRDP.

TABLE 3-37: PEAK PARKING DEMAND ON A TYPICAL WEEKDAY BY CAMPUS SITE AND POPULATION GROUP

Population Group	Increase in Parking Space Demand by 2035/2040 [1]				
	Parnassus Heights	Mission Bay	Mount Zion	Mission Center	Four Campus Sites
Staff	19	3,165	241	192	3,617
Patients and Visitors	-4	643	55	0	694
Other Visitors	0	278	13	14	305
Child care	2	7	0	0	9
Residential	208	378	0	0	586
Total	***225***	***4,471***	***309***	***206***	***5,211***

Note:

1. The data shown in this table reflects the future peak parking demand through the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites, and year 2040 for the Mission Bay campus site.

Source: Adavant Consulting, 2014

An interim parking demand assessment was also conducted at the Mission Bay campus site only for the year 2015, when Phase One Medical Center project and Mission Hall are expected to open. The increase in

daily vehicle parking and peak parking demand at the Mission Bay campus site by 2015 are summarized in **Table 3-37** for each population group.

TABLE 3-38: INTERIM YEAR 2015 DAILY VEHICLE PARKING AND PEAK PARKING DEMAND GROWTH ON A TYPICAL WEEKDAY AT THE MISSION BAY SITE BY POPULATION GROUP

Population Group	Daily Vehicle Parking Growth (Number of Vehicles)	Increase in Peak Parking Demand (Number of Parking Spaces)
Mission Bay		
Staff	861	732
Patients and Visitors	788	265
Other Visitors	128	62
Child care	0	0
Residential	0	0
Total Mission Bay	***1,777***	***1,059***

Source: UCSF, Adavant Consulting, 2014

As shown in the table, with the opening of Phase One Medical Center and the completion of Mission Hall by 2015 would be an increase of approximately 1,780 daily parked vehicles on a typical weekday, which represents an increase in peak parking demand of about 1,060 spaces.

3.9 CONSTRUCTION DEMAND

Implementation of the LRDP would occur using a coordinated, phased construction schedule that would preserve UCSF's operations during the construction period. The construction will occur in phases beginning with Phase One Medical Center at Mission Bay, scheduled to open in 2015, and through the LRDP horizon year in 2035. The sections below describe the estimated construction schedule and construction truck demand per workday. The type of truck will vary per the construction project but could include a combination of hauler, excavation, materials delivery, cement, and/or smaller, more specialized trucks for specific functions.

A discussion regarding the coordination of construction of LRDP projects with the construction of non-UCSF development projects within the vicinity of the campus sites follows in Section 4.8.5.

3.9.1 Parnassus Heights

The Parnassus Heights campus site construction schedule is described in **Table 3-39**. Construction is anticipated to begin in 2015 with implementation of the cushioning actions and conclude by 2036 with the demolition of the Koret Vision Research Building. Generally, each project anticipates no more than 10 truck trips per workday; however some projects, such as the renovation of UC Hall and construction of the New Hospital Addition, may require up to 20 to 30 truck trips on average through the duration of the project.

TABLE 3-39: PARNASSUS HEIGHTS PROPOSED CONSTRUCTION ESTIMATES			
Construction Project	**Project Completed By**	**GSF**	**Average Range of Truck Trips per Workday[1]**
Demolish Laboratory of Radiobiology	2020	18,200	1-5
Demolish Medical Research 4 Building	2020	12,100	1-5
Demolish the Surge Building	2020	11,400	1-5
Demolish the Woods Building	2020	3,900	1-5
Build Housing on Fifth and Parnassus Site	2020	48,400	1-5
Renovate/Reuse UC Hall - Phase One	2020	74,700	1-20
Parnassus Avenue Streetscape – Phase One	2020	--	1-5
Parnassus Avenue Streetscape – Phase Two	2025	--	1-5
Demolish the LPPI Building and Two Support Buildings	2031	107,200	1-20
Construct the New Hospital Addition	2031	308,000	1-30
Renovate and Convert Millberry Union Towers to Housing	2036	46,600	1-10
Demolish the Environmental Health and Safety Building	2036	6,200	1-5
Demolish the Proctor Building	2036	9,000	1-5
Build Housing on Proctor Site	2036	30,400	1-5
Renovate Moffitt Hospital	2036	--	1-10
Renovate/Reuse UC Hall - Phase Two	2036	68,300	1-10
Demolish the Koret Vision Research Building	2036	43, 00	1-10

Notes:

1. Average number of truck trips will range through each phase of the project.

Source: UCSF, 2014

3.9.2 Mission Bay

The Mission Bay campus site construction schedule is described in **Table 3-40**. Construction is anticipated to begin in 2016 with construction of Block 15 and the Surcharging Project on Block 14. Construction is estimated to go beyond the LRDP horizon year with construction of Phase Two Medical Center. With the exception of Phase Two Medical Center and development of Block 15, most construction projects will generate no more than approximately 40 truck trips per workday through the duration of construction. Construction of Block 15 and Phase Two Medical Center is anticipated to generate up to 50 and 90 truck

trips per workday, respectively. Phase One Medical Center is not included in the table, as it is nearing completion at the time of publication.

The estimated range of average truck trips per day and the duration of the construction period would be the same at the Mission Bay campus site under the LRDP Variant as that generated by the LRDP, as the same square footage of space is proposed to be developed under both scenarios.

TABLE 3-40: MISSION BAY PROPOSED CONSTRUCTION DATA[1]			
Construction Project	**Project Completed By**	**GSF**	**Average Range of Truck Trips per Workday[1]**
Block 15 housing	2020	418,200	10-50
Block 33	2020	275,000	10-30
Block 33/34 Parking Garage	2020	167,500	10-30
Phase 1B Cancer Outpatient Building	2020	124,500	5-15
Surcharging- Blocks 15 & 18	2020	42,700	10-30
Block 23A	2025	232,200	10-30
Block 34	2025	225,000	10-30
Block 18 – Garage Phase 1	2025	271,000	10-30
Block 16	2031	289,000	10-40
Block 25B	2031	323,000	10-40
Block 18 – Research/Office Building	2036	193,000	10-30
Block 18 – Garage Phase 2	2036	271,000	10-30
Phase Two Medical Center	2036	793,500	20-90

Notes:

1. Average number of truck trips will range through each phase of the project.

Source: UCSF, 2014

3.9.3 Mount Zion

The Mount Zion campus site construction schedule is described in **Table 3-41**. Construction is anticipated to begin in 2015 with the renovation and reuse of the existing hospital and conclude by 2020 with the demolition or retrofit of Building "N" (2255 Post Street). Generally, each project anticipates no more than 15 truck trips per workday, however the construction of a new medical office and/or research building will require up to 30 truck trips through the duration of construction, which is approximately two years.

TABLE 3-41: MOUNT ZION PROPOSED CONSTRUCTION DATA			
Construction Project	**Project Completed By**	**GSF**	**Average Number of Truck Trips per Workday**
Renovate and reuse existing hospital	2020	50,000	1-10
Demolish the Hellman, Harold Brunn Institute and the Dialysis Center Buildings	2020	85,000	1-15
Construct additional parking	2020	78,000	1-10
Construct a new medical office and/or research building(s)	2020	257,000	10-30
Demolish or retrofit the "N" building (2255 Post Street)	2020	7, 500	1-5
Source: UCSF, 2014			

3.9.4 Mission Center

The Mission Center campus site construction schedule is described in **Table 3-42**. Construction is anticipated to begin in 2022 with the new parking structure and end in 2025 with the completion of the new building fronting Harrison Street and 15th Street. Both projects anticipate no more than 15 truck trips per workday through the duration of construction. As noted earlier, development of this new building is to occur only if additional program space is determined to be needed in the future, and if and when funding becomes available.

TABLE 3-42: MISSION CENTER PROPOSED CONSTRUCTION DATA			
Construction Project	**Project Completed By**	**GSF**	**Average Number of Truck Trips per Workday**
New Parking	2025	96,000	1-15
New Building	2025	100,000	1-15
Source: UCSF, 2014			

4 TRANSPORTATION IMPACT ANALYSIS

This chapter presents the assessment of transportation impacts resulting from the 2014 LRDP. The impacts are grouped into eight areas: traffic, transit, pedestrians, bicyclists, loading, emergency vehicle access, parking, and transportation-related construction impacts. Transportation conditions were assessed for Existing plus LRDP. Future year analysis under Year 2015 conditions for the Mission Bay campus site and Year 2040 conditions for all campus sites are presented in Chapter 5.

4.1 SIGNIFICANCE CRITERIA

Below is a list of significance criteria used by UCSF to assess whether the 2014 LRDP would result in significant impacts to the transportation network. These criteria are organized by transportation mode to facilitate the transportation impact analysis.

4.1.1 Traffic

Signalized Intersections – a significant impact would occur if:

- LRDP traffic causes intersection LOS D or better to deteriorate to LOS E or F.
- LRDP traffic causes intersection LOS E to deteriorate to LOS F.
- LRDP increases traffic by five percent on critical movements[9] operating at LOS E or F of an intersection operating at LOS E or F under Existing conditions.

Unsignalized Intersections – a significant impact would occur if:

- LRDP traffic causes the LOS at the worst approach to deteriorate from LOS D or better to LOS E or F and Caltrans signal warrants would be met.
- LRDP traffic causes Caltrans signal warrants to be met when the worst approach is already operating at LOS E or F.
- LRDP adds traffic to an intersection that operates at LOS E or F under Existing conditions and makes a considerable contribution (five percent on critical approaches[10] operating at LOS E or F) to the worsening of the average delay per vehicle and Caltrans signal warrants would be met.

Cumulative – a significant impact would occur if:

- LRDP would make a considerable contribution to the deterioration of intersection conditions (LOS E or F) if LRDP-generated traffic contributes five percent or more to the critical movements operating at LOS E or F under Cumulative conditions.

[9] The critical movement is the one whose signal phase requires more green time to serve its demand volume than the concurrent movement's signal phase.
[10] The critical approach is when a critical movement is a single shared movements lane.

4.1.2 Transit

The LRDP would have a significant effect on the environment if project demand for public transit causes the need for development or expansion of mass transit facilities, the development of which would cause significant environmental impacts.

4.1.3 Pedestrians and Bicycles

The LRDP would have a significant effect on the environment if it would cause a substantial conflict among autos, bicyclists, pedestrians, and transit vehicles.

4.1.4 Loading

The LRDP would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, or if it created potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians.

4.1.5 Parking

LRDP-generated parking demand that is not met by the project is not considered significant.

4.1.6 Construction

Construction-related impacts generally would not be considered significant due to their temporary and limited duration.

4.2 TRAFFIC IMPACTS

The net new vehicle trip estimates for the 2014 LRDP developed in Chapter 3 were added to Existing peak hour intersection volumes to represent Existing Plus LRDP conditions. Vehicle trips are assigned to routes using trip distribution percentages and routes to and from the trip end. The sections below describe the estimated peak hour vehicle trips going to and from each campus site and the 2014 LRDP's impacts on study intersections.

Consistent with the significance criteria presented in Section 4.1, the LRDP was determined to have a significant impact at an intersection if LRDP-generated trips would cause an intersection operating at LOS D or better under Existing conditions to operate at LOS E or LOS F, or intersection operating at LOS E under Existing conditions to deteriorate to LOS F conditions. At intersections that operate at LOS E or LOS F under Existing conditions, and would continue to operate at LOS E or LOS f under Existing Plus LRDP conditions, the increase in project vehicle trips were reviewed to determine whether the increase would contribute considerably to critical movements operating at LOS E or LOS F.

4.2.1 Parnassus Heights

Existing Plus LRDP conditions peak hour turning movement volumes for the Parnassus Heights campus site are shown on **Figure 4-1A**, **4-1B, 4-1C,** and **4-1D**. **Table 4-1** presents intersection levels of service and delay for the AM and PM peak hours for the Existing and Existing Plus LRDP scenarios.

It should be noted that at some of the study intersections, the average delay per vehicle would remain the same (e.g., Judah Street/Ninth Avenue). Using the HCM methodology, the level of service is calculated based on an average of the total vehicular delay per approach, weighted by the number of vehicles at each approach. Increases in traffic volumes at an intersection usually result in increases in the overall intersection delay. However, if there are increases in the number of vehicles at movements with low delays, the average weighted delay per vehicle may remain the same or decrease. At side-street stop controlled intersections (SSSC), the average delay of the worst-operating stop controlled movement is shown, rather than the average delay of the intersection as a whole. At all all-way stop controlled intersections (AWSC), both the average delay of the worst-operating stop controlled movement and the average delay of the intersection as a whole are shown.

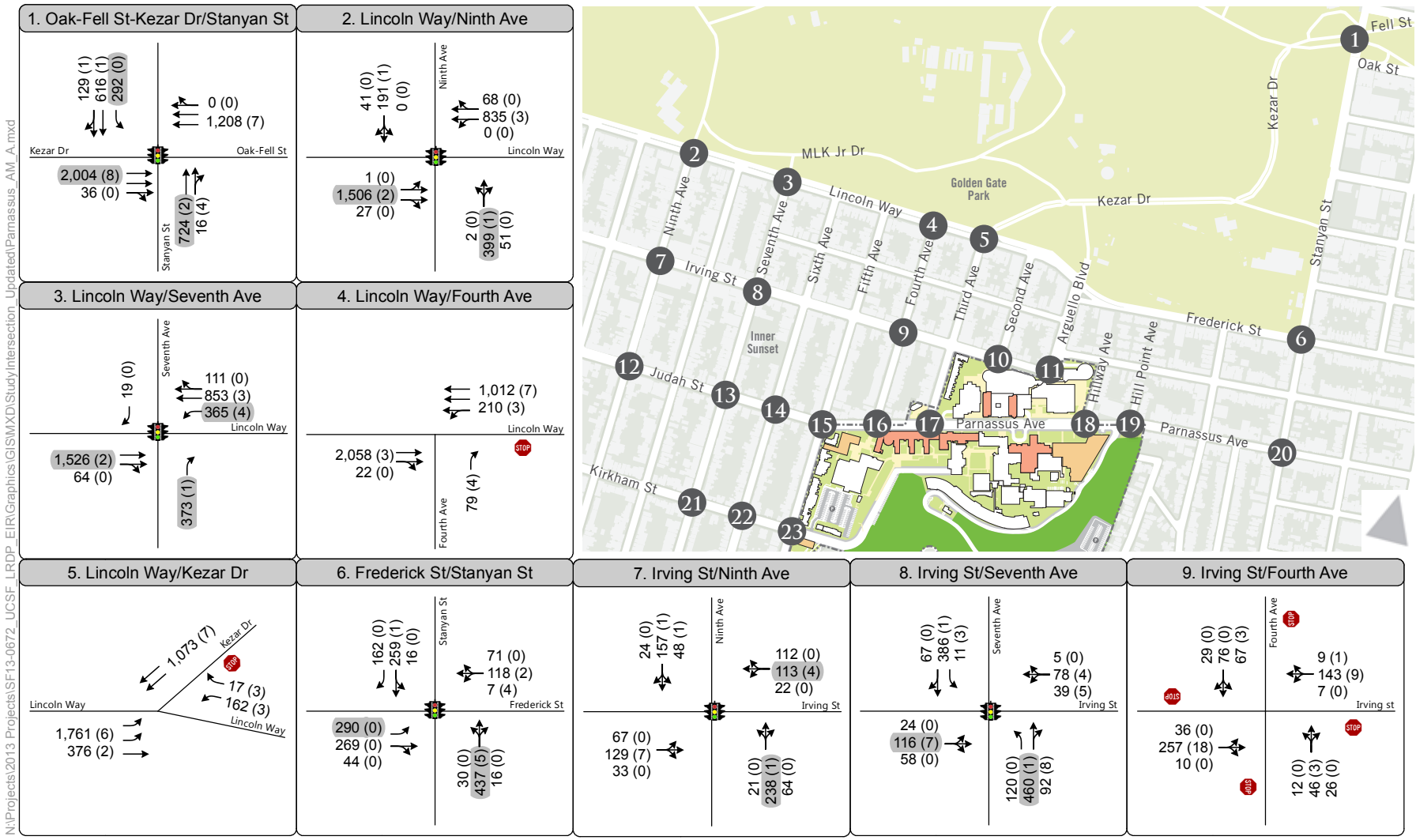


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Figure 4-1A

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Parnassus Heights

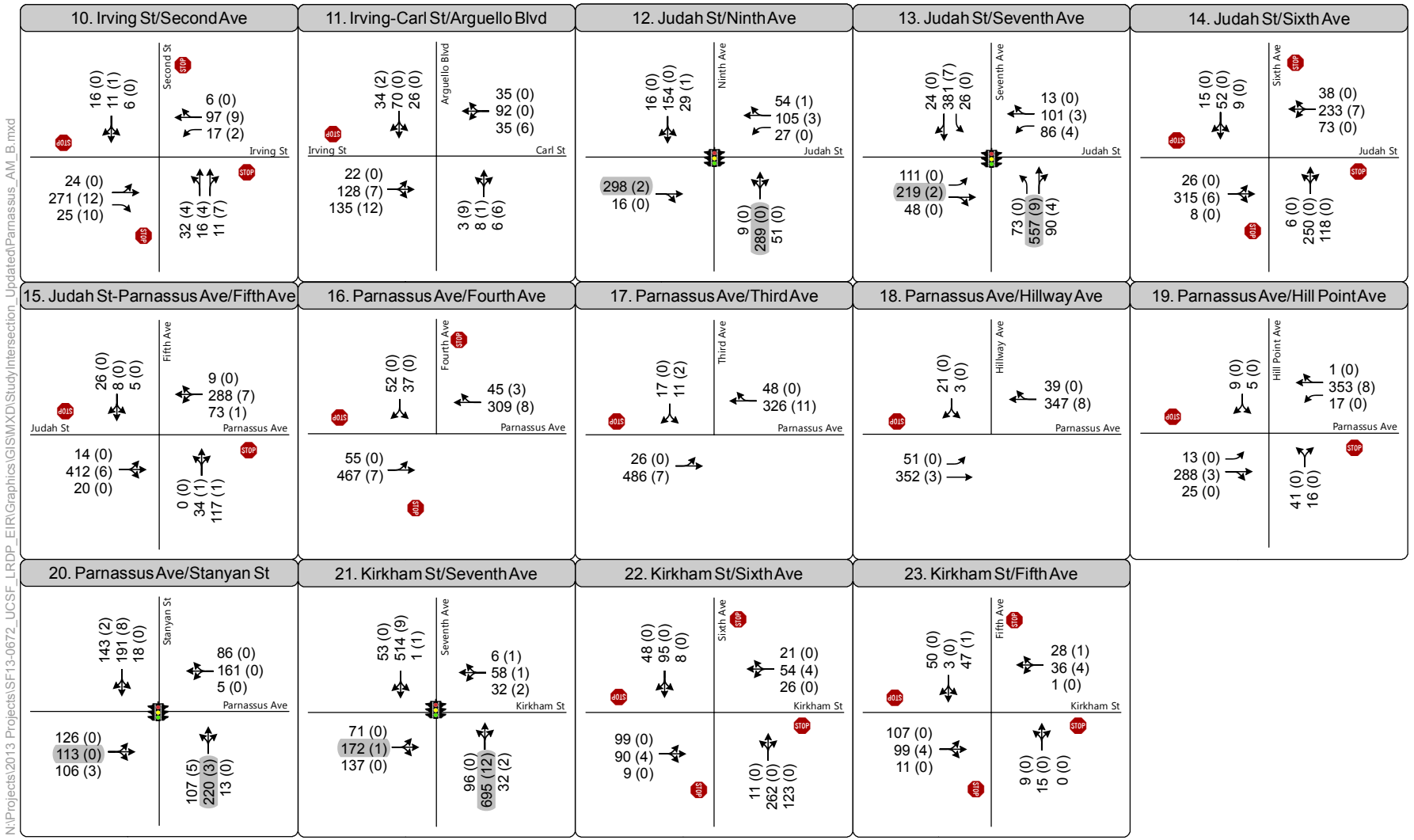

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Figure 4-1B

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Parnassus Heights

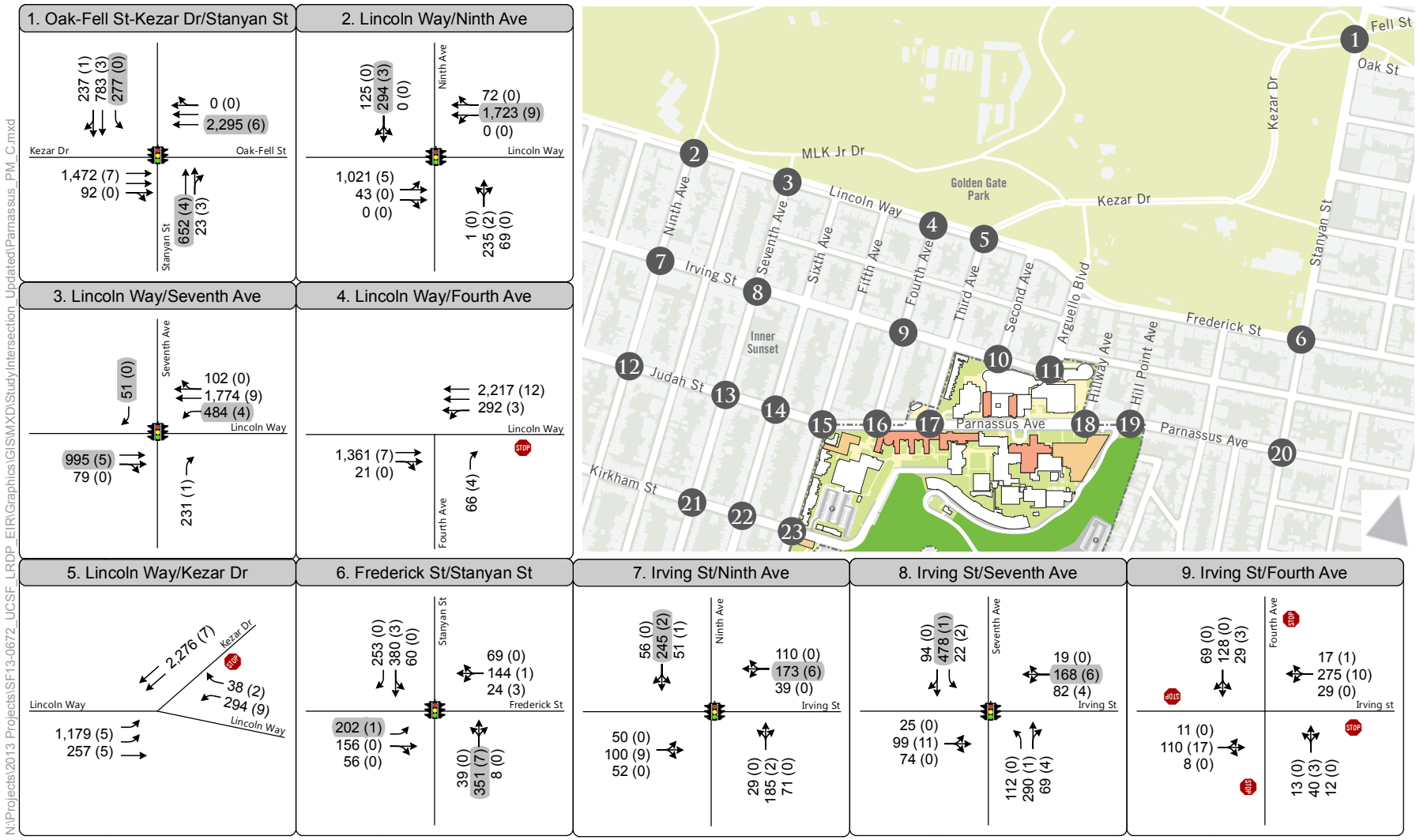

Figure 4-1C

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes- Parnassus Heights

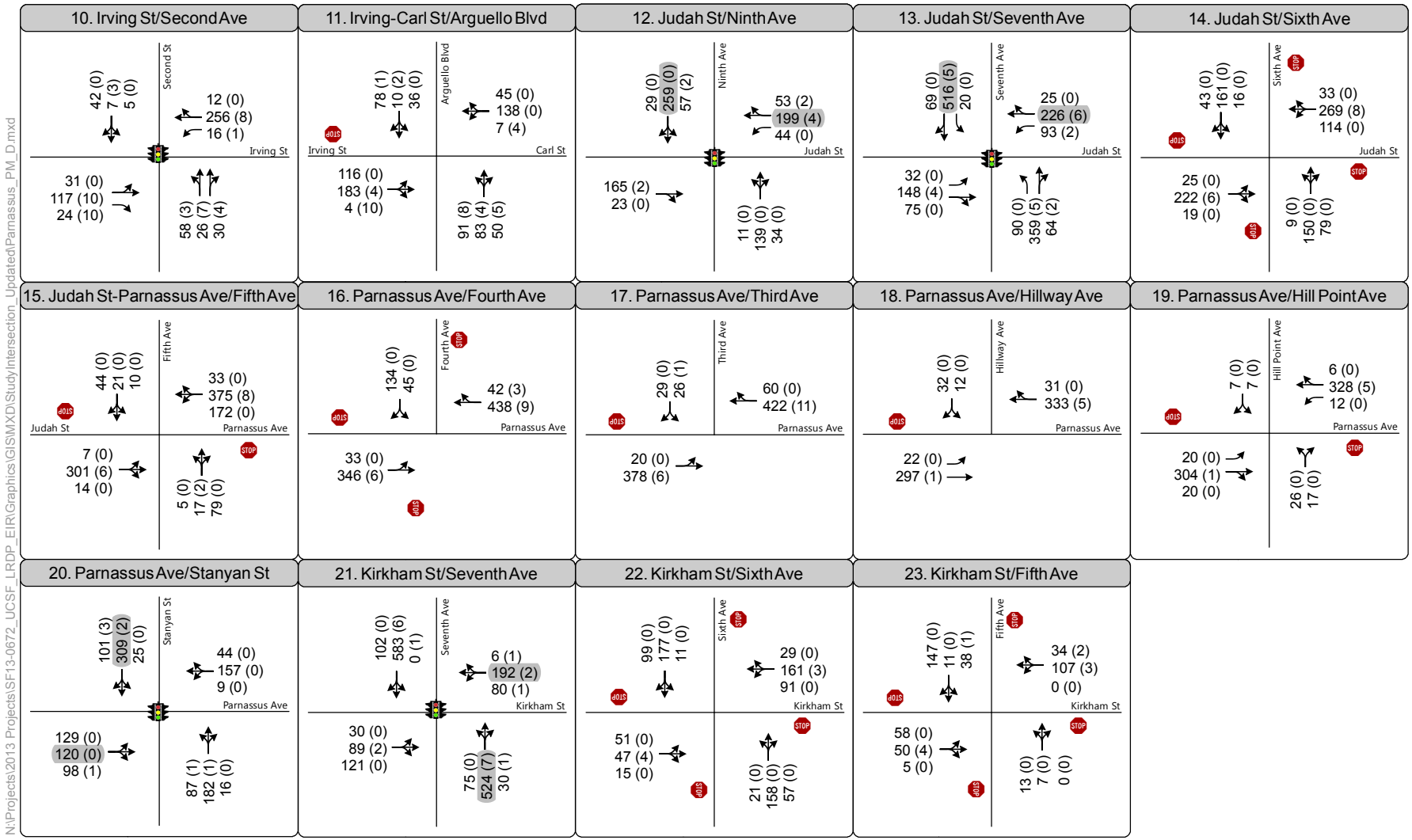

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Figure 4-1D

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes- Parnassus Heights

TABLE 4-1: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - PARNASSUS HEIGHTS

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
1. Oak Street-Fell Street-Kezar Drive / Stanyan Street	Signal	AM	45	D	45	D
		PM	**58**	**E**	**59**	**E**
2. Lincoln Way / Ninth Avenue	Signal	AM	39	D	39	D
		PM	**65**	**E**	**67**	**E**
3. Lincoln Way / Seventh Avenue	Signal	AM	32	C	32	C
		PM	39	D	40	D
4. Lincoln Way / Fourth Avenue	SSS	AM	**>50**	**F**	**>50**	**F**
		PM	23	C	24	C
5. Lincoln Way-Kezar Drive / Third Avenue	SSS	AM	24	C	24	C
		PM	29	D	29	D
6. Fredrick Street / Stanyan Street	Signal	AM	26	C	27	C
		PM	24	C	24	C
7. Irving Street / Ninth Avenue	Signal	AM	17	B	17	B
		PM	20	B	20	B
8. Irving Street / Seventh Avenue	Signal	AM	24	C	24	C
		PM	25	C	26	C
9. Irving Street / Fourth Avenue	AWS	AM	11 / 12	B / B	11 / 12	B / B
		PM	11 / 12	B / B	11 / 12	B / B
10. Irving Street / Second Avenue	AWS	AM	10 / 11	B / B	10 / 11	B / B
		PM	11 / 12	B / B	11 / 12	B / B
11. Irving Street / Arguello Boulevard	SSS	AM	15	B	15	B
		PM	27	D	31	D
12. Judah Street / Ninth Avenue	Signal	AM	15	B	15	B
		PM	16	B	16	B
13. Judah Street / Seventh Avenue	Signal	AM	32	C	34	C
		PM	25	C	25	C
14. Judah Street / Sixth Avenue	AWS	AM	17 / 18	C / C	17 / 18	C / C
		PM	17 / 22	C / C	17 / 23	C / C
15. Judah Street-Parnassus Avenue / Fifth Avenue	SSS	AM	22	C	23	C
		PM	**42**	**E**	**44**	**E**
16. Parnassus Avenue / Fourth Avenue	AWS	AM	15 / 18	B / C	15 / 18	B / C
		PM	19 / 23	C / C	20 / 25	C / D
17. Parnassus Avenue / Third Avenue	SSS	AM	17	C	18	C
		PM	20	C	21	C
18. Parnassus Avenue / Hillway Avenue	SSS	AM	13	B	13	B
		PM	15	C	15	B
19. Parnassus Avenue / Hill Point Avenue	SSS	AM	17	C	17	C
		PM	16	C	16	C
20. Parnassus Avenue / Stanyan Street	Signal	AM	41	D	42	D
		PM	29	C	29	C
21. Kirkham Street / Seventh Avenue	Signal	AM	**70**	**E**	**74**	**E**
		PM	30	C	31	C
22. Kirkham Street / Sixth Avenue	AWS	AM	13 / 16	B / C	13 / 16	B / C
		PM	13 / 14	B / B	13 / 15	B / B

TABLE 4-1: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - PARNASSUS HEIGHTS

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
23. Kirkham Street / Fifth Avenue	AWS	AM PM	<10 / <10 <10 / <10	A / A A / A	<10 / <10 <10 / <10	A / A A / A

Notes:
1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards

Source: Fehr & Peers, 2014.

In general, the addition of LRDP-generated traffic would result in small changes in the average delay per vehicle at the study intersections, and all study intersections would continue to operate at the same service levels as under Existing conditions. As presented in Chapter 2, 18 of the 23 study intersections operate at acceptable levels of service (LOS D or better) under both AM and PM peak hour conditions under Existing conditions. These 18 intersections would continue to operate acceptably under Existing Plus LRDP conditions; therefore, the Proposed LRDP Project would have a ***less-than-significant impact*** at these 18 intersections.

The following five intersections operate at unacceptable levels of service (LOS E or F) under Existing conditions, and would continue to operate at the same LOS under Existing Plus LRDP conditions:

- Intersection #1: Oak Street – Fell Street – Kezar Drive / Stanyan Street (PM)
- Intersection #2: Lincoln Way / Ninth Avenue (PM)
- Intersection #4: Lincoln Way / Fourth Avenue (AM)
- Intersection #15: Judah Street – Parnassus Avenue / Fifth Avenue (PM)
- Intersection #21: Kirkham Street / Seventh Avenue (AM)

Each of these intersections operated unacceptably under Existing conditions; therefore, the LRDP's contribution to each intersection's critical movements was identified to determine if the LRDP had a significant impact at each intersection.

The Oak Street – Fell Street – Kezar Drive/Stanyan Street (Intersection #1) signalized intersection operates at LOS E in the PM peak hour under Existing and Existing Plus LRDP conditions. The critical northbound through movement operates at LOS F during the PM peak. The LRDP would add four vehicle trips to the critical northbound through movement, which represents a one percent increase from Existing conditions. While this movement is expected to operate at LOS F under Existing Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movements at the intersection – southbound left and westbound through – are expected to operate at acceptable levels of service and not

receive an increase in vehicular traffic of five percent or more. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Lincoln Way/Ninth Avenue (Intersection #2) signalized intersection operates at LOS E in the PM peak hour under Existing and Existing Plus LRDP conditions. The critical southbound through movement operates at LOS E during the PM peak. The LRDP would add three vehicle trips to this critical movement, which represents a one percent increase from Existing conditions. The other critical movement at the intersection – the westbound through – is expected to operate at LOS F and the LRDP would add five vehicle trips, which represents less than one percent increase from Existing conditions. While these movements are expected to operate unacceptably under Existing Plus LRDP conditions, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Lincoln Way/Fourth Avenue (Intersection #4) unsignalized intersection operates at LOS F in the AM peak hour under Existing and Existing Plus LRDP conditions. The westbound left turn movement operates at LOS F during the AM peak. The LRDP would add three vehicle trips to this critical movement, which represents a one percent increase from Existing conditions. While the westbound left turn is expected to operate at LOS F under Existing Plus LRDP conditions, the LRDP's contribution would not be considered significant. In addition, the increase in traffic does not warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3). Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Judah Street – Parnassus Avenue/Fifth Avenue (Intersection #15) unsignalized intersection operates at LOS E in the PM peak hour under Existing and Existing Plus LRDP conditions. The southbound approach (one shared left, right, and through lane) operates at LOS E during the PM peak. The LRDP would add no vehicle trips to the southbound approach; therefore, the LRDP's contribution would not be considered significant. In addition, the increase in traffic does not warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3). Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Kirkham Street/Seventh Avenue (Intersection #21) signalized intersection operates at LOS E in the AM peak hour under Existing and Existing Plus LRDP conditions. The critical northbound through movement operates at LOS F during the AM peak. The LRDP would add 12 vehicle trips to the critical northbound through movement, which represents a two percent increase from Existing conditions. While the northbound through movement is expected to operate at LOS F under Existing Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – the eastbound through – is also expected to operate at LOS F and the LRDP would add one vehicle trip, which represents less than one percent increase from Existing conditions. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

4.2.2 Mission Bay

Existing Plus LRDP conditions peak hour turning movement volumes for the Mission Bay campus site are shown on **Figures 4-2A** , **4-2B**, **4-2C**, and **4-2D**. **Table 4-2** presents intersection levels of service and delay for the AM and PM peak hours for the Existing and Existing Plus LRDP scenarios. The Existing Plus LRDP conditions reflects modifications to the lane geometries and signal timing plans proposed by both the LRDP and foreseeable (funded) infrastructure improvements for several study intersections

surrounding and within the Mission Bay campus site. These modifications are assumed to be in place in early 2015 and are also assumed in the Existing Plus LRDP conditions traffic analysis:

- 16th Street / Third Street – Addition of one through lane on the westbound approach of Third Street.
- 16th Street / Fourth Street – Addition of a northbound leg to provide access to UCSF Medical Center and conversion of the existing three-leg intersection into a four lane intersection. The new northbound approach will include one left turn pocket and one shared through/right turn lane. The eastbound approach will be reconfigured to have one left turn pocket, one through lane, and one shared through/right turn lane. The westbound approach will be reconfigured to have one left turn pocket, one through lane, and one shared through/right turn lane.
- 16th Street / Owens Street – Extension of Owens Street south of 16th Street to connect with Mariposa Street, converting the existing three-leg intersection into a four-leg intersection. The new northbound approach will include one left turn pocket, one through lane, and one shared through/right turn lane. The eastbound approach will be reconfigured to include one left turn pocket, one through lane, and one shared through/right turn lane. The westbound approach will be reconfigured to include one left turn pocket, one through lane, and one shared through/right turn lane.
- Mariposa Street / Third Street – Addition of one through lane in the eastbound direction on Mariposa Street. Addition of one westbound left turn pocket and the conversion of the shared through/left turn lane to a through lane only.
- Mariposa Street / Fourth Street – Signalization and addition of a southbound leg to provide access to the UCSF Medical Center, widening of Mariposa Street, and conversion of the existing three-leg intersection into a four-leg intersection. The new southbound approach will include one left turn pocket and one shared through/right turn lane. The westbound approach will be reconfigured to include one left turn pocket, one through lane, and one shared through/right turn lane. The eastbound approach will be reconfigured to include one left turn pocket, one through lane, and one shared through/right turn lane.
- Mariposa Street / I-280 Northbound Off-Ramp – Extension of Owens Street south of 16th Street to the intersection of Mariposa Street / I-280 Off-Ramp to convert the existing three-leg intersection into a four leg intersection. The new southbound approach will include two right turn lanes. The westbound approach will be reconfigured to include two through lanes and one shared through/right turn lane. The northbound approach will be reconifigured to include one left turn pocket, one through lane, and one shared through/right turn lane. The eastbound approach will be reconfigured to include one shared through/left turn lane and one through lane.
- Mariposa Street / I-280 Southbound On-Ramp – Signalization of this intersection to operate in conjunction with the Northbound Off-Ramp. The eastbound approach will be reconfigured to include a shared through/right turn lane and one right turn lane. The westbound approach will be reconfigured to include an additional westbound left turn lane.

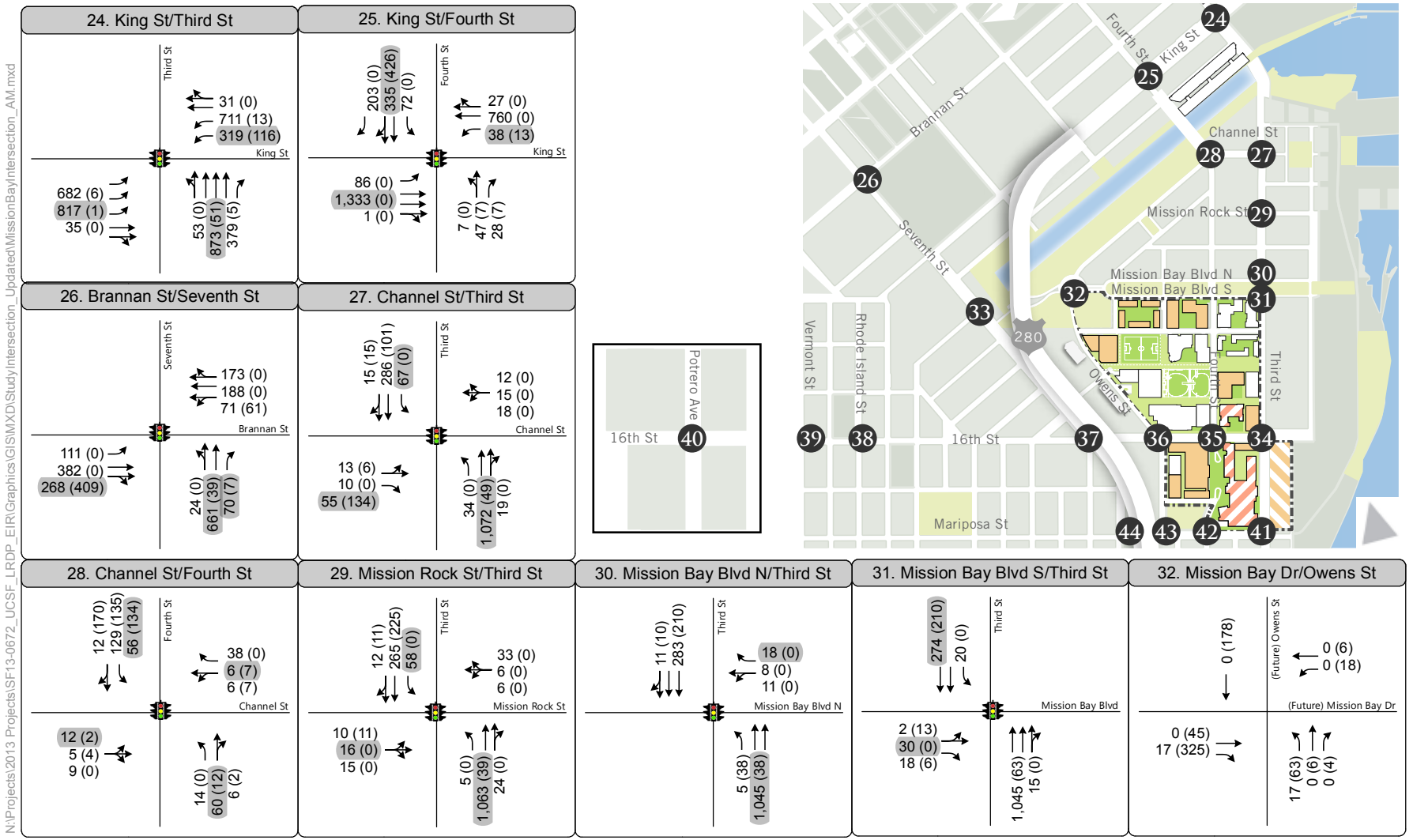


Figure 4-2A

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Mission Bay

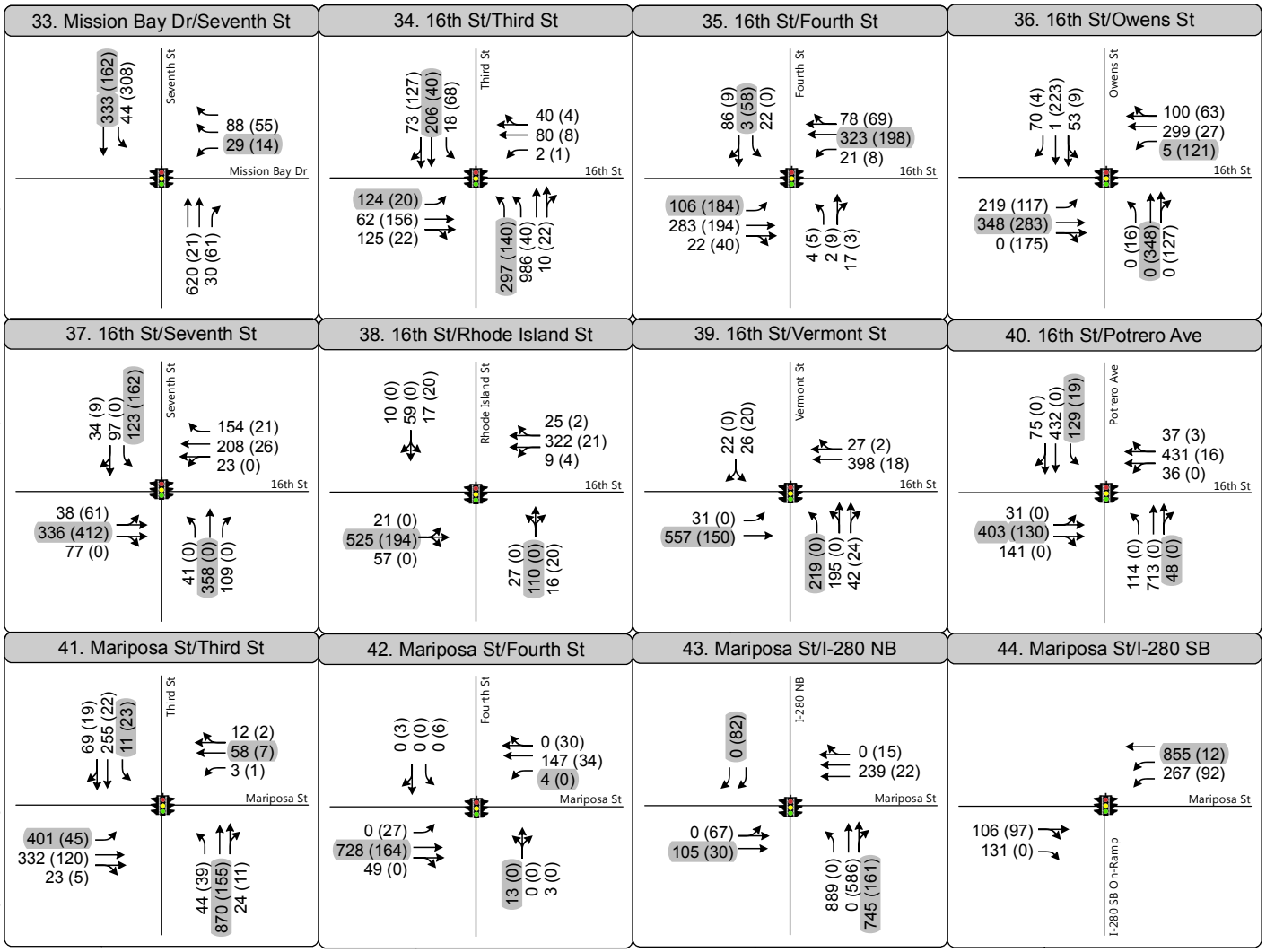


Figure 4-2B

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Mission Bay

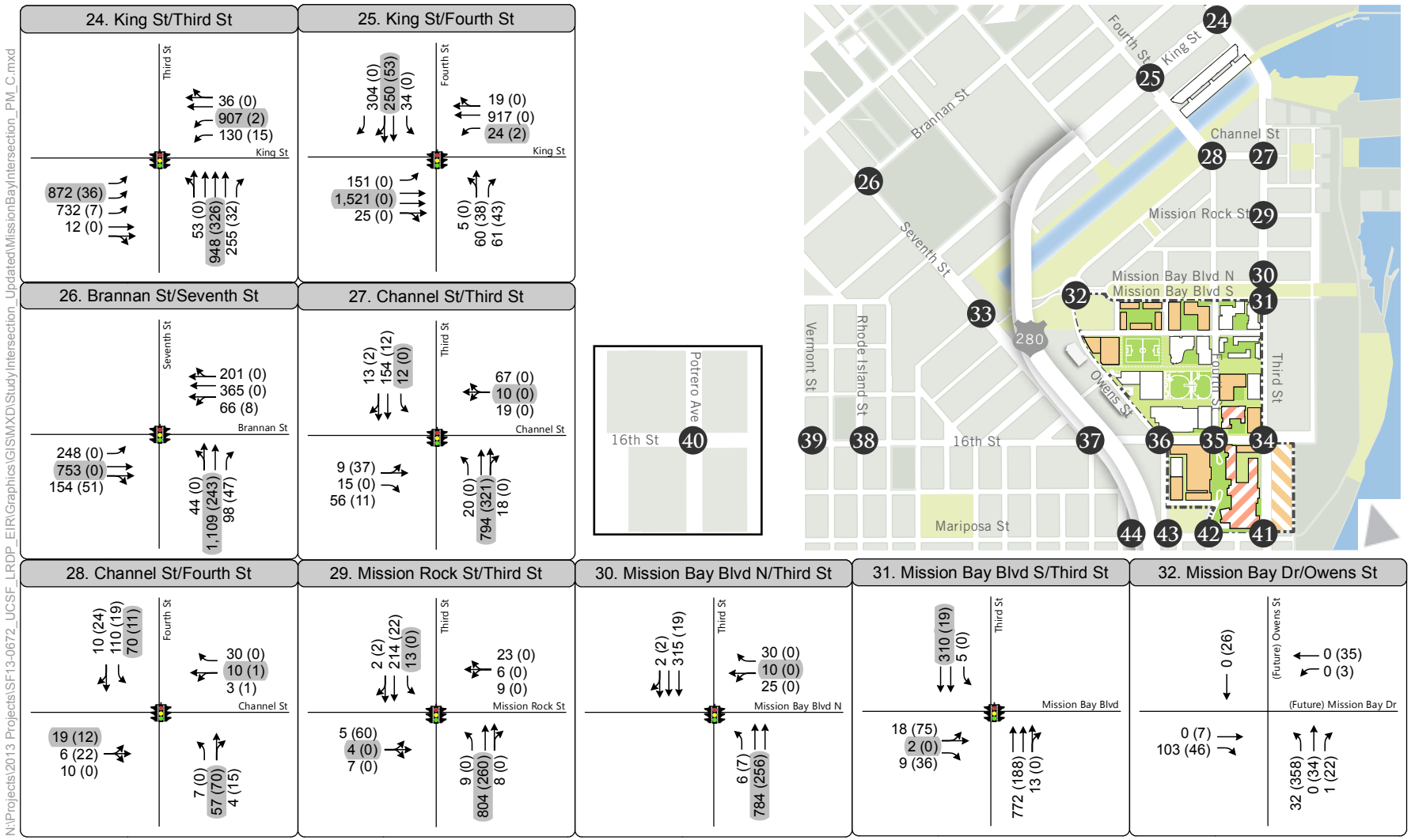
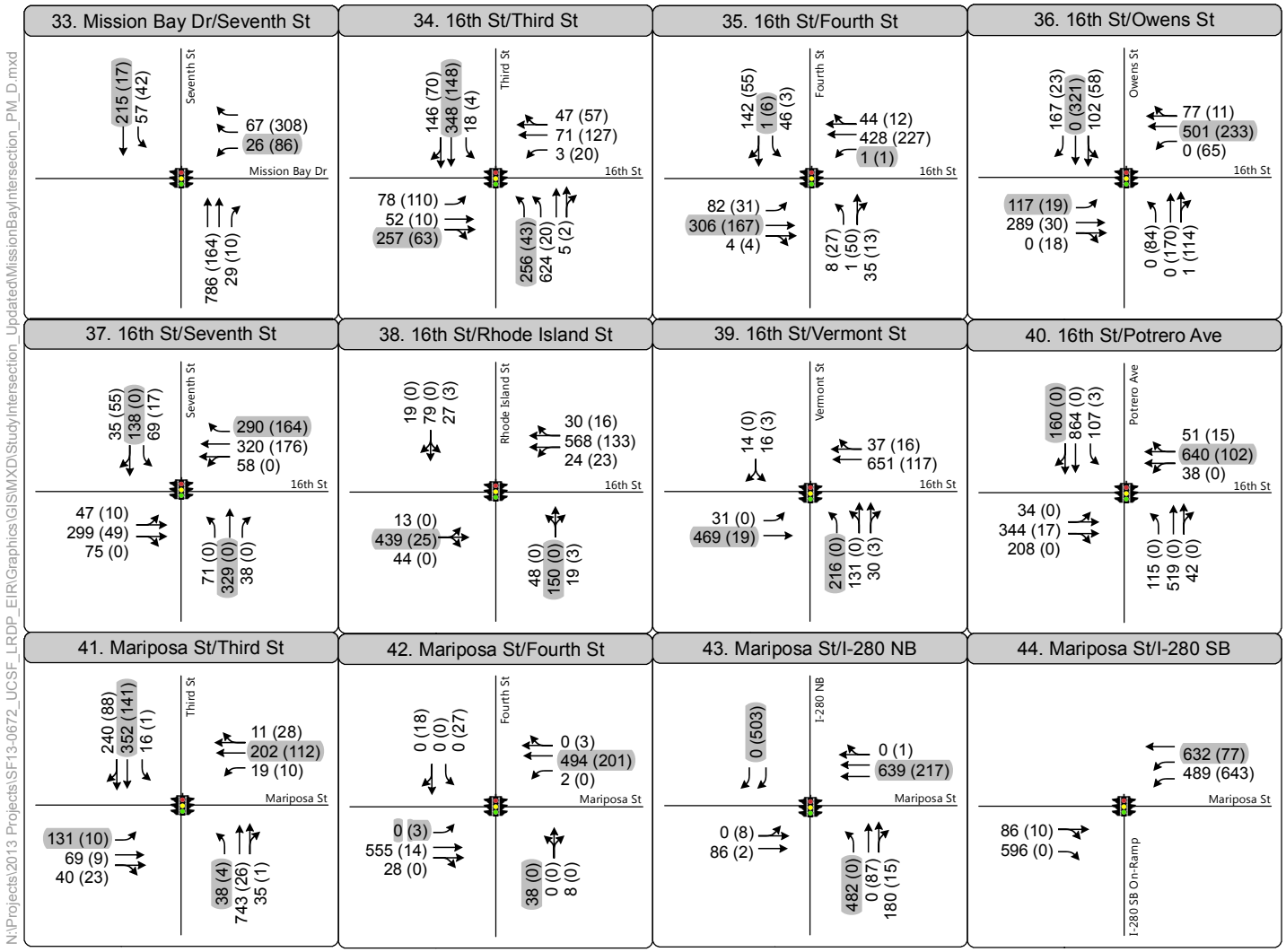


Figure 4-2C

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes- Mission Bay



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Traffic Signal | Turn Lane | Existing (LRDP Added) | Peak Hour Traffic Volume

Stop Sign | 1 Study Intersection | Existing (LRDP Added) | Critical Movement

Figure 4-2D

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes-Mission Bay

TABLE 4-2: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
24. King Street / Third Street	Signal	AM	46	D	53	D
		PM	**70**	**E**	**73**	**E**
25. King Street / Fourth Street	Signal	AM	43	D	44	D
		PM	53	D	53	D
26. Brannan Street / Seventh Street	Signal	AM	14	B	26	C
		PM	25	C	53	D
27. Channel Street / Third Street	Signal	AM	40	D	44	D
		PM	30	C	48	D
28. Channel Street / Fourth Street	Signal	AM	23	C	26	C
		PM	16	B	17	B
29. Mission Rock Street / Third Street	Signal	AM	37	D	39	D
		PM	29	C	41	D
30. Mission Bay Boulevard North / Third Street	Signal	AM	17	B	19	B
		PM	16	B	17	B
31. Mission Bay Boulevard South / Third Street	Signal	AM	23	C	23	C
		PM	20	B	22	C
32. Mission Bay Boulevard / Owens Street	Roundabout	AM	<10	A	<10	A
		PM	<10	A	<10	A
33. Mission Bay Boulevard / Seventh Street	Signal	AM	20	B	34	C
		PM	22	C	37	D
34. 16th Street / Third Street	Signal	AM	36	D	49	D
		PM	31	C	35	D
35. 16th Street / Fourth Street	Signal	AM	26	C	42	D
		PM	27	C	30	C
36. 16th Street / Owens Street	Signal	AM	32	C	23	C
		PM	30	C	32	C
37. 16th Street / Seventh Street	Signal	AM	43	D	53	D
		PM	44	D	46	D
38. 16th Street / Rhode Island Avenue	Signal	AM	15	B	33	C
		PM	13	B	13	B
39. 16th Street / Vermont Avenue	Signal	AM	19	B	42	D
		PM	15	B	16	B
40. 16th Street / Potrero Avenue	Signal	AM	27	C	43	D
		PM	35	C	53	D
41. Mariposa Street / Third Street	Signal	AM	52	D	51	D
		PM	28	C	40	D
42. Mariposa Street / Fourth Street	Signal	AM	<10	A	20	B
		PM	11	B	19	B
43. Mariposa Street / I-280 Northbound Ramp	Signal	AM	**73**	**E**	34	C
		PM	31	C	33	C
44. Mariposa Street / I-280 Southbound Ramp	SSS[5]	AM	**>50**	**F**	<10	A
		PM	**>50**	**F**	14	B

TABLE 4-2: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards
5. Intersection is signalized under Existing Plus LRDP condition

Source: Fehr & Peers, 2014.

In general, the addition of LRDP-generated traffic would result in small changes in the average delay per vehicle at most study intersections, with the exception of those that serve as major access points on 16th Street. Most study intersections would continue to operate at the same service levels as under Existing conditions. As presented in Chapter 2, 18 of the 21 study intersections operate at acceptable levels of service (LOS D or better) under both AM and PM peak hour conditions under Existing conditions. These 18 intersections would continue to operate acceptably under Existing Plus LRDP conditions. Therefore, the LRDP would have a ***less-than-significant impact*** at these 18 intersections.

The reconfiguration of Mariposa Street/I-280 Northbound Ramp (Intersection #43) and signalization and reconfiguration of Mariposa Street/I-280 Southbound Ramp (Intersection #44) would result in an improvement at these intersections from unacceptable levels of service (LOS E or F) to acceptable levels of service (LOS D or better) between Existing conditions and Existing Plus LRDP conditions. Therefore, the LRDP would have a ***less-than-significant impact*** at these two intersections.

King Street / Third Street (Intersection #24) would operate at unacceptable levels of service (LOS E or F) during the PM peak hour under Existing conditions, and would continue to operate at the same LOS under Existing Plus LRDP conditions; therefore, the LRDP's contribution to the critical movements was identified to determine if the LRDP caused a significant impact at the intersection.

The King Street / Third Street (Intersection #24) signalized intersection operates at LOS E in the PM peak hour under Existing and Existing Plus LRDP conditions. The critical eastbound left turn movement operates at LOS F during the PM peak. The LRDP would add 36 vehicle trips to the critical eastbound left turn movement, which represents a four percent increase from Existing conditions. The other critical movements at this intersection – northbound through and westbound through – operate at LOS C and E, respectively, during the PM peak. Since the northbound through movement is expected to operate at LOS C, the LRDP's contribution would not be considered significant. The LRDP would add two vehicle trips to the westbound through, which is an increase of less than one percent. While this critical movement is expected to operate at LOS E under Existing Plus LRDP conditions, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

4.2.2.1 LRDP Variant

Traffic conditions associated with the LRDP Variant would be similar to those described above for the LRDP. **Table 4-3** presents intersection levels of service and delay for the AM and PM peak hours for the Existing and Existing Plus LRDP Variant. Similar to the Existing Plus LRDP scenario, the Existing Plus LRDP Variant conditions reflects modifications to the lane geometries and signal timing plans proposed by both the LRDP and foreseeable (funded) infrastructure improvements for several study intersections surrounding and within the Mission Bay campus site, as discussed above.

TABLE 4-3: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP		Existing Plus LRDP Variant	
			Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]
24. King Street / Third Street	Signal	AM	46	D	53	D	53	D
		PM	**70**	**E**	**73**	**E**	**73**	**E**
25. King Street / Fourth Street	Signal	AM	43	D	44	D	44	D
		PM	53	D	53	D	53	D
26. Brannan Street / Seventh Street	Signal	AM	14	B	26	C	28	C
		PM	25	C	53	D	54	D
27. Channel Street / Third Street	Signal	AM	40	D	44	D	44	D
		PM	30	C	48	D	49	D
28. Channel Street / Fourth Street	Signal	AM	23	C	26	C	28	C
		PM	16	B	17	B	17	B
29. Mission Rock Street / Third Street	Signal	AM	37	D	39	D	39	D
		PM	29	C	41	D	41	D
30. Mission Bay Boulevard North / Third Street	Signal	AM	17	B	19	B	19	B
		PM	16	B	17	B	17	B
31. Mission Bay Boulevard South / Third Street	Signal	AM	23	C	23	C	23	C
		PM	20	B	22	C	22	C
32. Mission Bay Boulevard / Owens Street	Roundabout	AM	<10	A	<10	A	<10	A
		PM	<10	A	<10	A	<10	A
33. Mission Bay Boulevard / Seventh Street	Signal	AM	20	B	34	C	34	C
		PM	22	C	37	D	37	D
34. 16th Street / Third Street	Signal	AM	36	D	49	D	49	D
		PM	31	C	35	D	35	D
35. 16th Street / Fourth Street	Signal	AM	26	C	42	D	42	D
		PM	27	C	30	C	30	C
36. 16th Street / Owens Street	Signal	AM	32	C	23	C	23	C
		PM	30	C	32	C	32	C
37. 16th Street / Seventh Street	Signal	AM	43	D	53	D	54	D
		PM	44	D	46	D	46	D
38. 16th Street / Rhode Island Avenue	Signal	AM	15	B	33	C	33	C
		PM	13	B	13	B	13	B
39. 16th Street / Vermont Avenue	Signal	AM	19	B	42	D	43	D
		PM	15	B	16	B	16	B
40. 16th Street / Potrero Avenue	Signal	AM	27	C	43	D	44	D
		PM	35	C	53	D	53	D
41. Mariposa Street / Third Street	Signal	AM	52	D	51	D	51	D
		PM	28	C	40	D	40	D
42. Mariposa Street / Fourth Street	Signal	AM	<10	A	20	B	20	B
		PM	11	B	19	B	19	B
43. Mariposa Street / I-280 Northbound Ramp	Signal	AM	**73**	**E**	34	C	36	D
		PM	31	C	33	C	34	C
44. Mariposa Street / I-280 Southbound Ramp	SSS[5]	AM	**>50**	**F**	<10	A	<10	A
		PM	**>50**	**F**	14	B	14	B

TABLE 4-3: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP		Existing Plus LRDP Variant	
			Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]

Notes:
1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards
5. Intersection is signalized under Existing Plus LRDP condition

Source: Fehr & Peers, 2014.

In general, the addition of LRDP Variant-generated traffic would result in small changes in the average delay per vehicle at most study intersections, with the exception of those that serve as major access points on 16th Street. All the study intersections would continue to operate at the same service levels as under Existing Plus LRDP conditions. As presented in Chapter 2, 18 of the 21 study intersections operate at acceptable levels of service (LOS D or better) under both AM and PM peak hour conditions under Existing conditions. These 18 intersections would continue to operate acceptably under Existing Plus LRDP Variant conditions. Therefore, the LRDP Variant would have a ***less-than-significant impact*** at these 18 intersections.

4.2.3 Mount Zion

Existing Plus LRDP conditions peak hour turning movement volumes for the Mount Zion campus site are shown on **Figure 4-3A**, **4-3B**, **4-3C**, and **4-3D**. **Table 4-4** presents intersection levels of service and delay for the AM and PM peak hours for the Existing and Existing Plus LRDP scenarios.

The addition of LRDP-generated traffic would result in small changes in the average delay per vehicle at the study intersections, and all study intersections would continue to operate at the same service levels as under Existing conditions. During the AM and PM peak hours, all 16 of the study intersections would continue to operate at acceptable levels of service (LOS D or better) under Existing Plus LRDP conditions, therefore the LRDP would have a ***less-than-significant impact*** at these intersections.

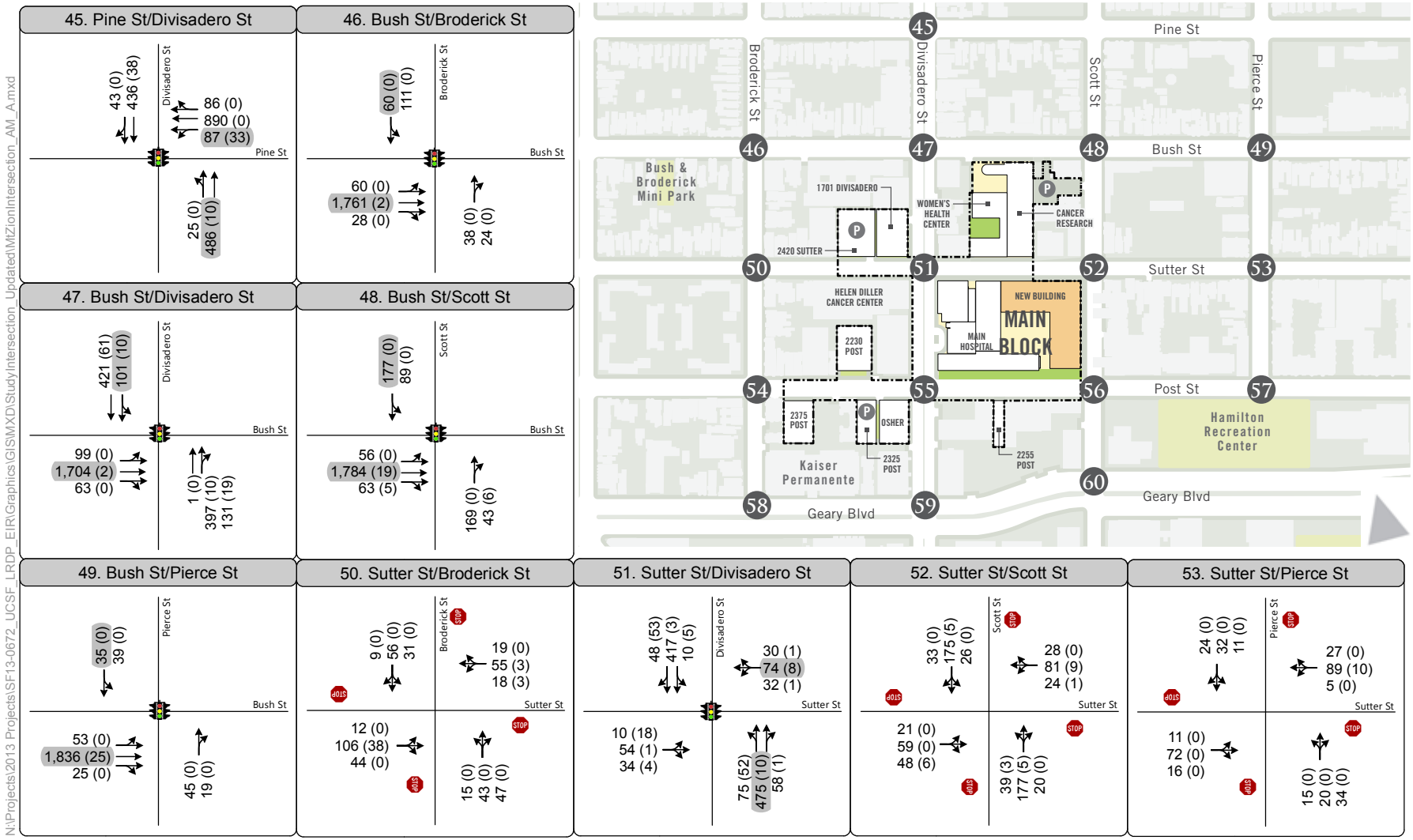

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Figure 4-3A

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Mount Zion

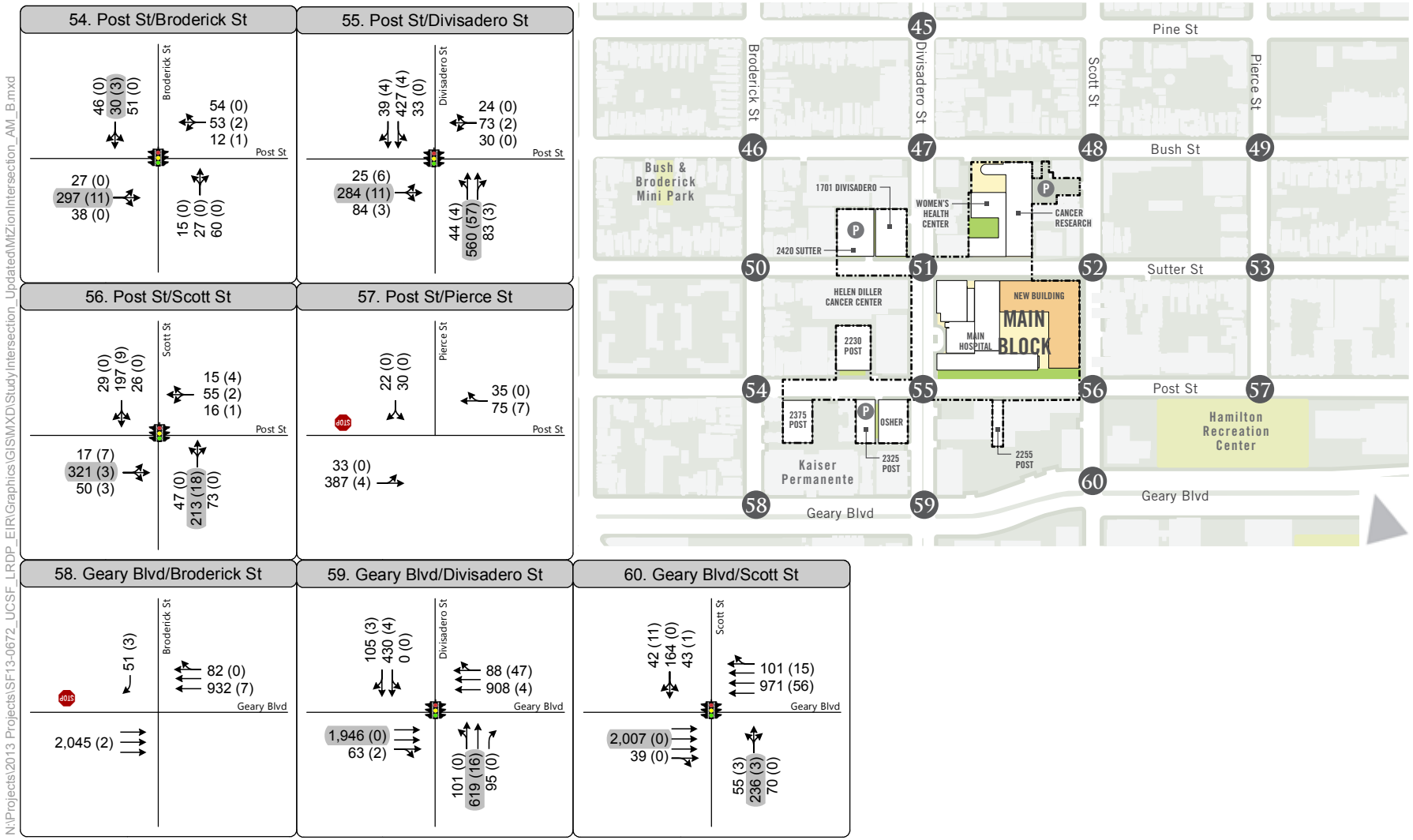

Figure 4-3B

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Mount Zion

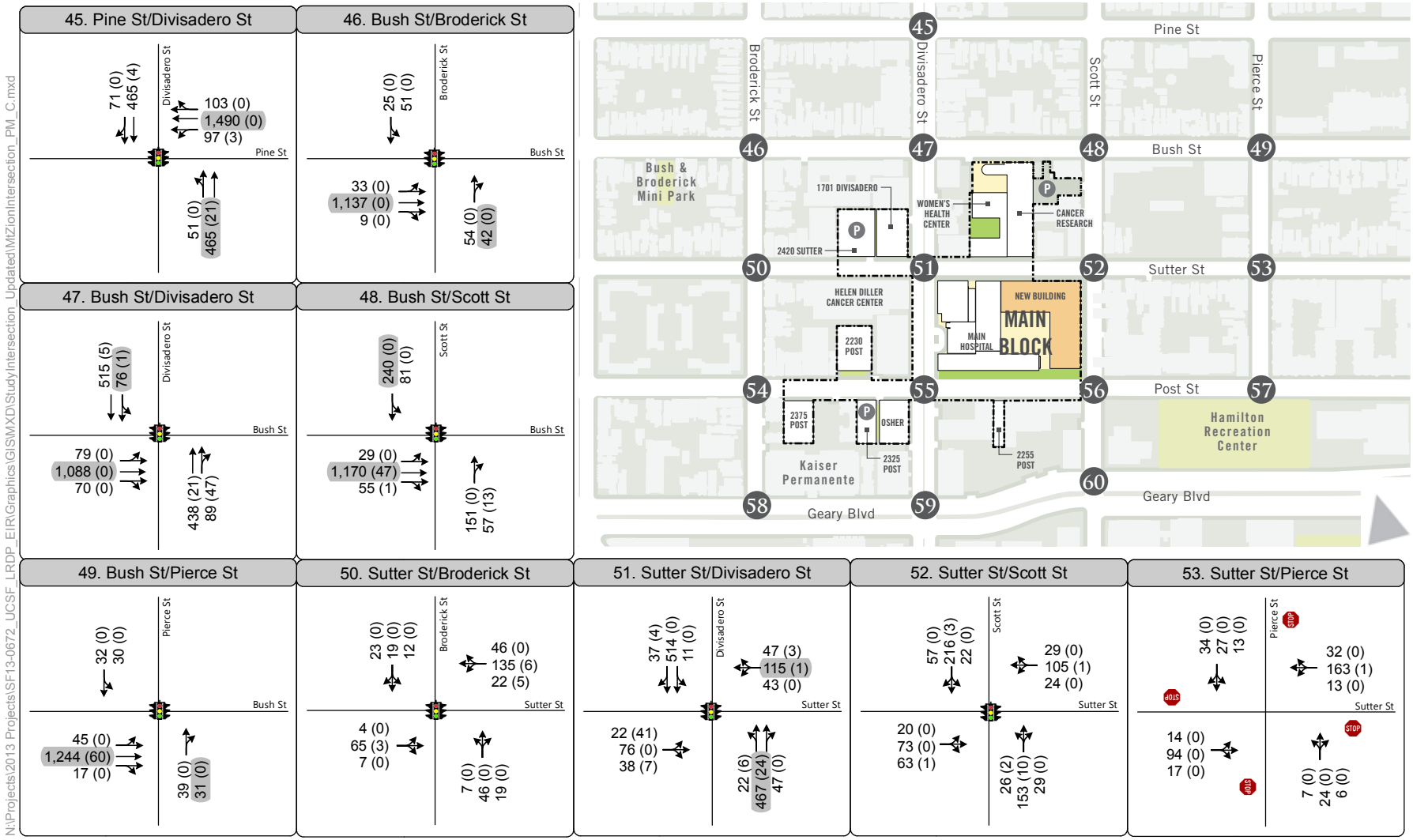

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Figure 4-3C

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes- Mount Zion

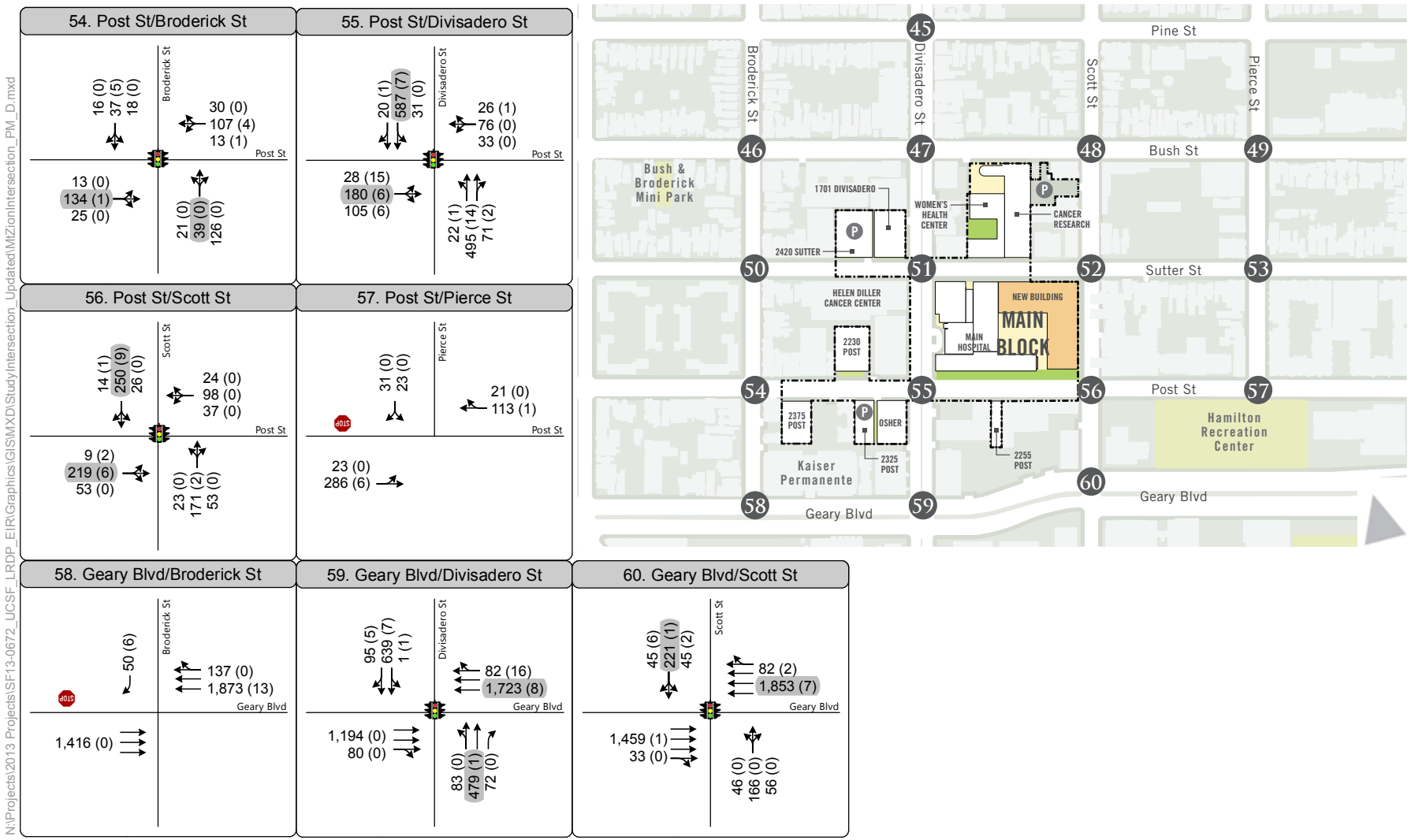

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Figure 4-3D

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes-Mount Zion

TABLE 4-4: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MOUNT ZION

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
45. Pine Street / Divisadero Street	Signal	AM PM	14 32	B C	14 32	B C
46. Bush Street / Broderick Street	Signal	AM PM	17 11	B B	17 11	B B
47. Bush Street / Divisadero Street	Signal	AM PM	48 18	D B	48 20	D B
48. Bush Street / Scott Street	Signal	AM PM	30 17	C B	32 17	C B
49. Bush Street / Pierce Street	Signal	AM PM	30 15	C B	32 15	C B
50. Sutter Street / Broderick Street	AWS	AM PM	<10 / <10 <10 / <10	A / A A / A	<10 / <10 <10 / <10	A / A A / A
51. Sutter Street / Divisadero Street	Signal	AM PM	12 12	B B	13 13	B B
52. Sutter Street / Scott Street	AWS	AM PM	10 / 11 11 / 12	B / B B / B	10 / 11 11 / 12	B / B B / B
53. Sutter Street / Pierce Street	AWS	AM PM	<10 / <10 <10 / <10	A / A A / A	<10 / < 10 <10 / <10	A / A A / A
54. Post Street / Broderick Street	Signal	AM PM	14 12	B B	14 12	B B
55. Post Street / Divisadero Street	Signal	AM PM	17 14	B B	19 16	B B
56. Post Street / Scott Street	Signal	AM PM	17 15	B B	18 15	B B
57. Post Street / Pierce Street	SSS	AM PM	12 11	B B	12 11	B B
58. Geary Boulevard / Broderick Street	SSS	AM PM	15 17	B C	15 18	B C
59. Geary Boulevard / Divisadero Street	Signal	AM PM	34 30	C C	36 31	D C
60. Geary Boulevard / Scott Street	Signal	AM PM	21 20	C B	21 20	C B

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards

Source: Fehr & Peers, 2014.

4.2.4 Mission Center

Existing Plus LRDP conditions peak hour turning movement volumes for the Mission Center campus site are shown on **Figure 4-4A**, **4-4B**, **4-4C**, and **4-4D**. **Table 4-5** presents intersection levels of service and delay for the AM and PM peak hours for the Existing and Existing Plus LRDP scenarios.

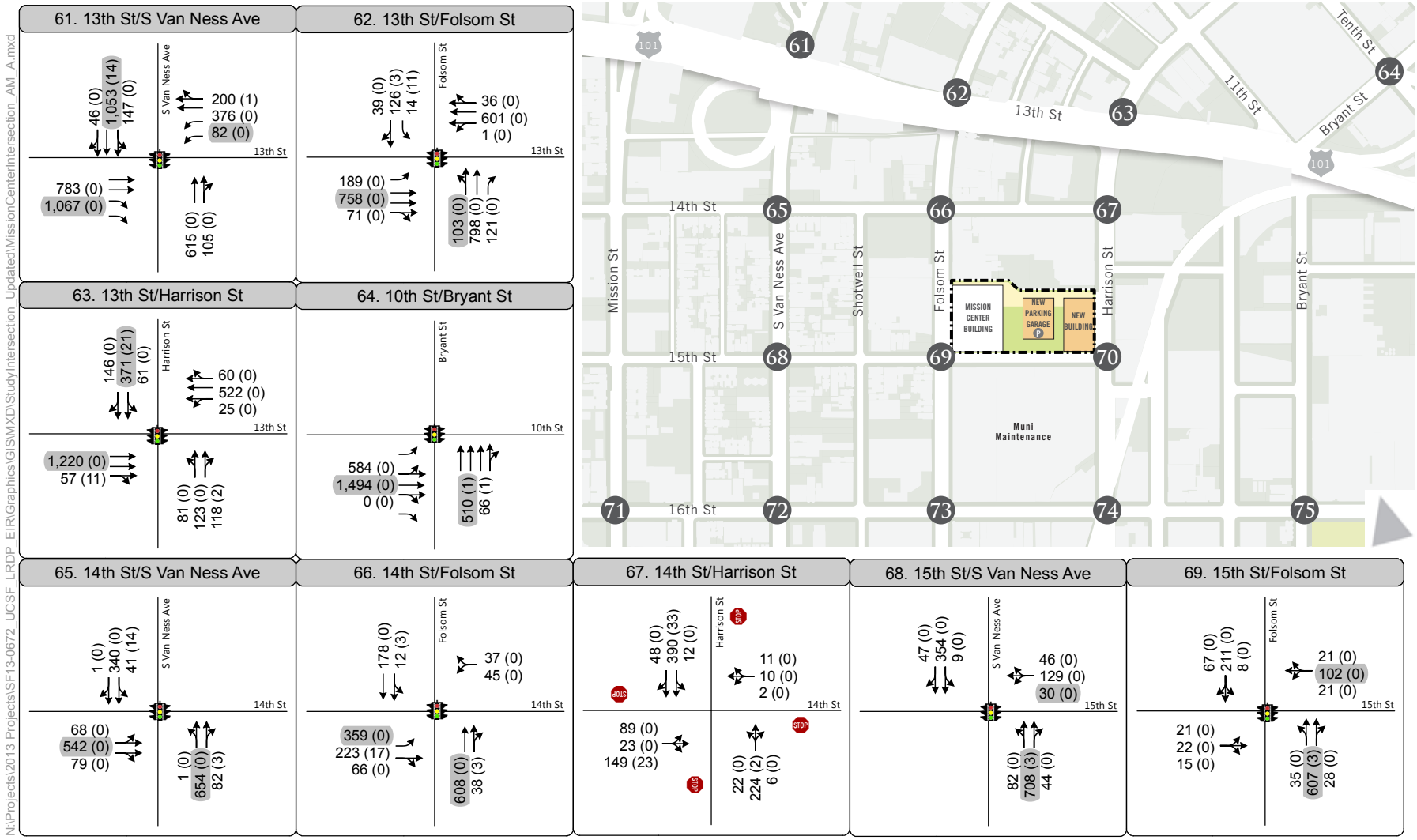
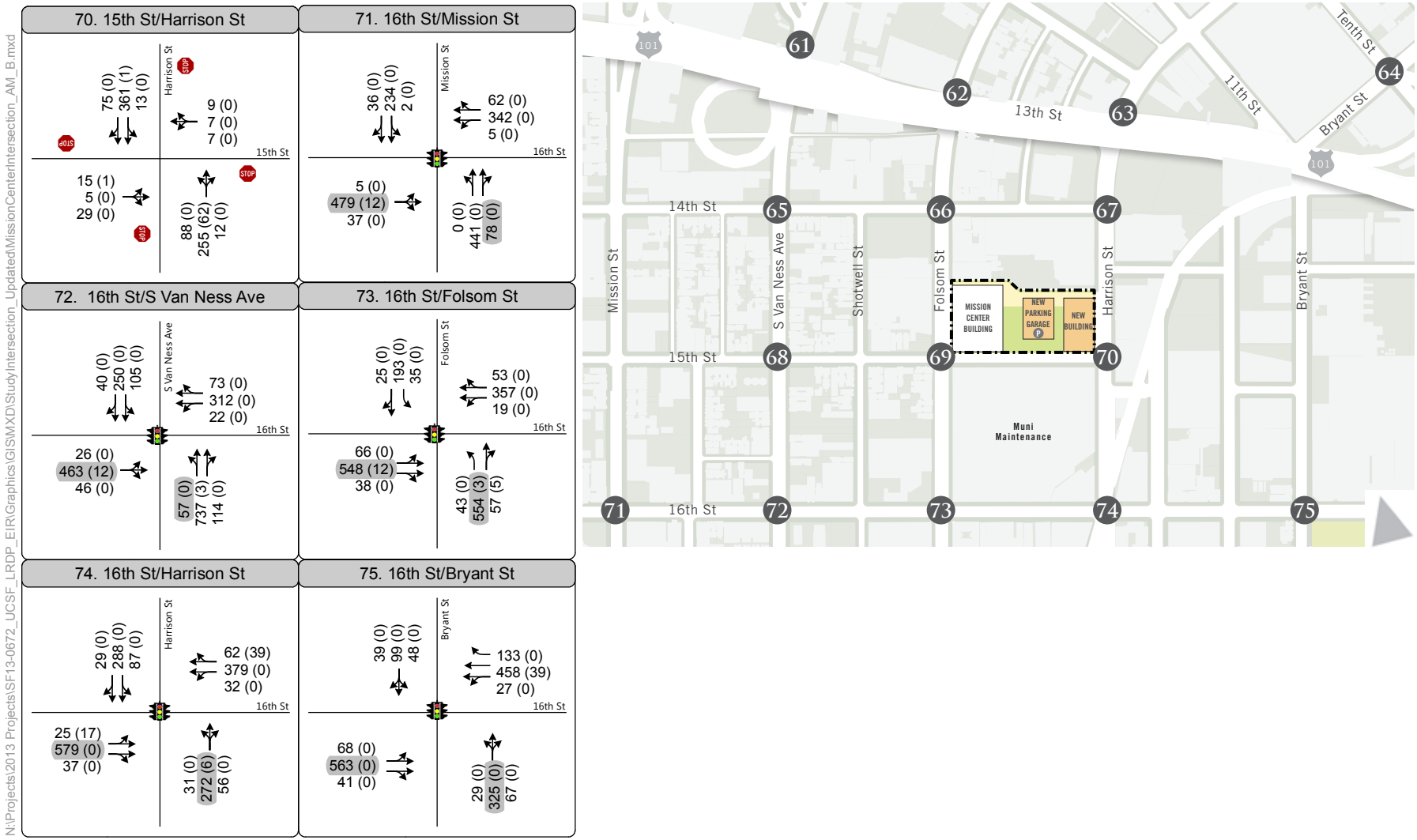


Figure 4-4A

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Mission Center



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Traffic Signal | Turn Lane | Existing (LRDP Added) | Peak Hour Traffic Volume

Stop Sign | 1 Study Intersection | Existing (LRDP Added) | Critical Movement

Figure 4-4B

Existing and LRDP AM Intersection Lane Configurations, Traffic Control, and Volumes- Mission Center

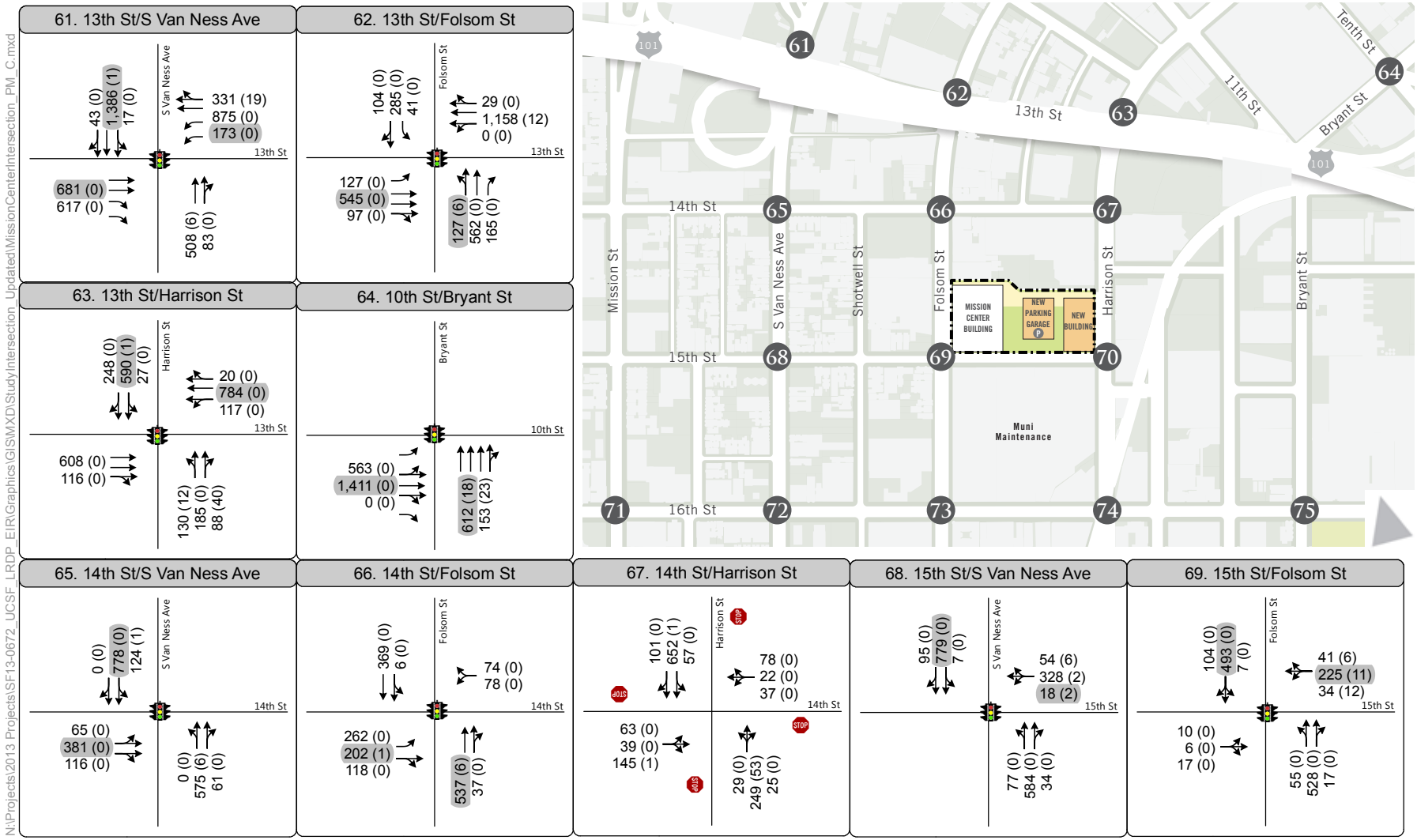

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Figure 4-4C

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes-Mission Center

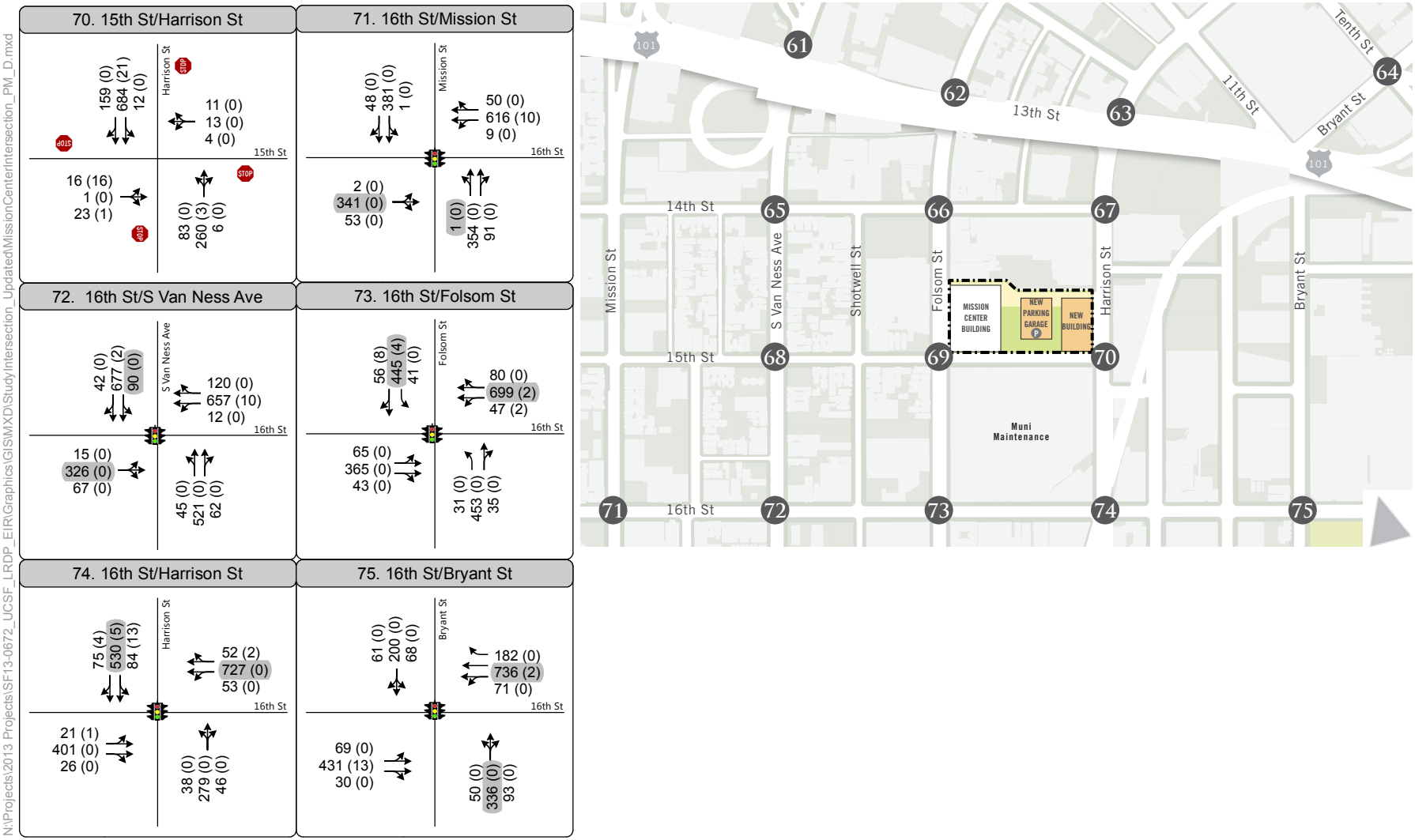

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Figure 4-4D

Existing and LRDP PM Intersection Lane Configurations, Traffic Control, and Volumes-Mission Center

TABLE 4-5: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION CENTER

Intersection	Traffic Control[1]	Peak Hour	Existing		Existing Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
61. 13th Street / South Van Ness Avenue	Signal	AM	**71**	**E**	**73**	**E**
		PM	30	C	31	C
62. 13th Street / Folsom Street	Signal	AM	26	C	26	C
		PM	29	C	29	C
63. 13th Street / Harrison Street	Signal	AM	16	B	17	B
		PM	19	B	19	B
64. Tenth Street / Bryant Street	Signal	AM	14	B	14	B
		PM	16	B	17	B
65. 14th Street / South Van Ness Avenue	Signal	AM	15	B	15	B
		PM	16	B	17	B
66. 14th Street / Folsom Street	Signal	AM	16	B	16	B
		PM	15	B	15	B
67. 14th Street / Harrison Street	AWS	AM	11 / 12	B / B	12 / 12	B / B
		PM	20 / 24	C / C	22 / 25	C / D
68. 15th Street / South Van Ness Avenue	Signal	AM	15	B	16	B
		PM	18	B	19	B
69. 15th Street / Folsom Street	Signal	AM	12	B	12	B
		PM	29	C	29	C
70. 15th Street / Harrison Street	AWS	AM	10 / 12	B / B	11 / 13	B / B
		PM	14 / 15	B / C	15 / 16	C / C
71. 16th Street / Mission Street	Signal	AM	26	C	28	C
		PM	16	B	16	B
72. 16th Street / South Van Ness Avenue	Signal	AM	37	D	39	D
		PM	20	B	20	B
73. 16th Street / Folsom Street	Signal	AM	38	D	40	D
		PM	28	C	29	C
74. 16th Street / Harrison Street	Signal	AM	21	C	21	C
		PM	30	C	37	D
75. 16th Street / Bryant Street	Signal	AM	20	C	20	C
		PM	35	D	35	D

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards

Source: Fehr & Peers, 2014.

In general, the addition of LRDP-generated traffic would result in minor changes in the average delay per vehicle at the study intersections, and most study intersections would continue to operate at the same service levels as under Existing conditions.

As presented in Chapter 2, 14 of the 15 study intersections operate at acceptable levels of service (LOS D or better) under both AM and PM peak hour conditions under Existing conditions. These 14 intersections would continue to operate acceptably under Existing Plus LRDP conditions; therefore, the LRDP would have a ***less-than-significant impact*** at these 14 intersections.

The following intersection operates at unacceptable levels of service (LOS E or F) under Existing conditions, and would continue to operate at the same LOS under Existing Plus LRDP conditions:

- Intersection #61: 13th Street / South Van Ness Avenue (AM)

This intersection operated unacceptably under Existing conditions; therefore, the LRDP's contribution to the intersection's critical movements was identified to determine if the LRDP caused a significant impact at the intersection.

The 13th Street/South Van Ness Avenue (Intersection #61) signalized intersection operates at LOS E in the AM peak hour under Existing and Existing Plus LRDP conditions. The critical southbound through movement operates at LOS F during the AM peak. The LRDP would add 14 vehicle trips to the critical southbound through movement, which represents a one percent increase from Existing conditions. While the southbound through movement is expected to operate at LOS F under Existing Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movements at the intersection – eastbound right turn and westbound left turn – are not expected to receive an increase in vehicular traffic due to the LRDP. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

4.2.5 Summary of Traffic Impacts

No significant impacts are identified under Existing Plus LRDP conditions. The LRDP would not cause intersections operating acceptably (LOS D or better) under Existing conditions to degrade to unacceptable operations (LOS E or F) with the addition of LRDP-generated traffic. The LRDP would add traffic to intersections operating unacceptably under Existing conditions; however, LRDP-generated traffic would not increase traffic by five percent or more on critical movements operating at LOS E or F at these intersections. Therefore, the LRDP would have a ***less-than-significant impact*** to traffic operations.

4.3 TRANSIT IMPACTS

LRDP horizon project transit trips were estimated based on existing travel surveys of UCSF staff and visitors and available transit data as described in Chapter 3. Transit trips by transit mode are assigned to specific transit routes using the trip distribution percentages as shown in Chapter 3. The sections below describe the estimated AM and PM peak hour trips traveling to and from each campus site by transit route and provider.

As discussed in Section 4.1.2, the LRDP would have a significant effect on the environment if project demand for public transit causes the need for development or expansion of mass transit facilities, the development of which would cause significant environmental impacts. LRDP impacts on public transit are analyzed relative to this standard of significance. In addition, for informational purposes, the analysis of public transit impacts on Muni relative to the City of San Francisco's crowding standard of 85 percent is discussed below.

4.3.1 Parnassus Heights

The increase in Parnassus Heights campus site peak hour transit trips generated by the LRDP are described in **Table 4-6**. These net new peak hour transit trips are expected to use a combination of local and regional transit services and UCSF shuttle service.

TABLE 4-6: NET NEW PEAK HOUR TRANSIT TRIPS – PARNASSUS HEIGHTS

Transit Route	AM Peak Hour			PM Peak Hour		
	In	Out	Total[1]	In	Out	Total[1]
SF Muni						
6 Parnassus	3	1	4	1	3	4
36 Teresita	2	1	3	1	2	3
43 Masonic	5	2	7	3	3	6
44 O'Shaughnessy	4	2	6	2	4	6
66 Quintara	1	0	1	0	1	1
71/L Haight Noriega/Limited	3	2	5	4	3	7
N Judah	27	4	31	7	23	30
Sub-Total	**45**	**12**	**57**	**18**	**39**	**57**
BART						
Eastbound	4	0	4	1	4	5
Southbound	8	1	9	1	6	7
Sub-Total	**12**	**1**	**13**	**2**	**10**	**12**
AC Transit						
Eastbound	1	0	1	0	1	1
Sub-Total	**1**	**0**	**1**	**0**	**1**	**1**
Caltrain						
Southbound	1	0	1	0	1	1
Sub-Total	**1**	**0**	**1**	**0**	**1**	**1**
SamTrans						
Routes 292	1	0	1	0	1	1
Sub-Total	**1**	**0**	**1**	**0**	**1**	**1**
Golden Gate Transit						
Northbound	2	0	2	0	2	2
Sub-Total	**2**	**0**	**2**	**0**	**2**	**2**
UCSF Shuttle						
All Parnassus Heights Shuttles	60	57	117	48	46	94
Sub-total	**60**	**57**	**117**	**48**	**46**	**94**
Total	***122***	***70***	***192***	***68***	***100***	***168***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+Muni, AC Transit+Muni, Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

As shown in **Table 4-6**, approximately 200 and 170 new transit trips are expected during the AM and PM peak hour, respectively. About 50 percent of transit users will use a UCSF shuttle and about 30-percent will use Muni to commute to and from the campus site, while the remaining transit riders will use BART, AC Transit, Caltrain, SamTrans, or Golden Gate Transit.

4.3.1.1 SF Muni

Existing Muni transit stops are located within a half-mile of the center of the campus site, with multiple stops located through the campus on Parnassus Avenue and adjacent to the campus site on Ninth Avenue, Irving Street and Lincoln Way. Major stop relocations adjacent to the campus site are not anticipated at this time. As part of the Parnassus Avenue Streetscape Plan, UCSF proposes that Muni consolidate the three transit stops on Parnassus Avenue into two transit stops in order to improve Muni's operating efficiency and provide more flexibility with respect to curb space allocation. As summarized in Chapter 2, the Transit Effectiveness Project (TEP) proposes to reduce headways for the following routes: 43 Masonic, 44 O'Shaughnessy, and 71/71L Haight-Noriega.

The Muni trips as assigned in **Table 4-6** were added to the load of the lines that serve the campus site at their maximum load point. **Table 4-7** shows the maximum load point and capacity utilization for the transit routes with the LRDP-generated transit trips added to them to reflect the Existing Plus LRDP scenario.

TABLE 4-7: TRANSIT CAPACITY UTILIZATION – PARNASSUS HEIGHTS

	Direction	Existing			Existing Plus LRDP		
		Pass. Load	Peak Hour Capacity	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
AM Peak Hour							
6 – Parnassus	Inbound	270	378	71%	4	274	72%
	Outbound	109	344	32%	2	111	32%
16X – Noriega Express	Inbound	340	572	59%	0	340	59%
	Outbound	--	--	--	--	--	--
36 – Teresita	Inbound	42	90	47%	2	44	49%
	Outbound	50	90	56%	1	51	57%
43 – Masonic	Inbound	348	378	**92%**	7	355	**94%**
	Outbound	246	378	65%	3	249	66%
44 – O'Shaughnessy	Inbound	398	473	84%	3	401	84%
	Outbound	222	378	59%	1	223	59%
66 – Quintara	Inbound	45	135	33%	1	46	34%
	Outbound	48	135	36%	0	48	36%
71/ 71L – Haight-Noriega/Limited	Inbound	300	378	79%	6	306	81%
	Outbound	131	344	38%	3	134	39%
N – Judah	Inbound	1,792	1904	**94%**	22	1,814	**95%**
	Outbound	544	1904	29%	4	548	29%
PM Peak Hour							
6 – Parnassus	Inbound	156	378	41%	1	157	42%
	Outbound	252	378	67%	4	256	68%
16X – Noriega Express	Inbound	--	--	--	--	--	--
	Outbound	253	517	49%	0	253	49%
36 – Teresita	Inbound	62	90	69%	1	63	70%
	Outbound	30	90	33%	2	32	36%
43 – Masonic	Inbound	160	315	51%	4	164	52%
	Outbound	240	315	76%	6	246	78%
44 – O'Shaughnessy	Inbound	180	420	43%	2	182	43%
	Outbound	353	420	84%	3	356	84%
66 – Quintara	Inbound	18	135	13%	0	18	13%
	Outbound	48	135	36%	1	49	36%
71/ 71L – Haight-Noriega/Limited	Inbound	258	378	68%	4	262	69%
	Outbound	324	378	**86%**	4	328	**87%**
N – Judah	Inbound	880	1904	46%	5	885	46%
	Outbound	1,773	2131	83%	20	1,793	84%

Note: Pass. = Passenger ; Util. = Utilization

Bold: > % 85 Capacity Utilization

Source: Adavant Consulting, Fehr & Peers, 2014

The estimated number of LRDP-generated Muni trips is about a two-percent increase in ridership traveling to and from the Parnassus Heights campus site, which would not require the expansion of transit service or facilities. As shown in **Table 4-7**, the 43 Masonic Inbound and N Judah Inbound during the AM peak hour and the 71/71L – Haight-Noriega/Limited Outbound during the PM peak hour operate above 85 percent capacity utilization, which represents Muni's crowding standard. The LRDP adds 7, 22, and 4

new peak hour trips to these currently crowded lines, respectively, which are approximately two percent increases in demand or less, which are all within daily fluctuations in demand.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP, would continue to do so in particular at the four UCSF campus sites where development is proposed. As the Parnassus Heights campus site develops, UCSF would monitor vehicle traffic conditions, transit operations, and shuttle ridership within and surrounding the campus site. This monitoring program would be informed by the annual UCSF Employee Transportation Survey, the existing UCSF shuttle program monitoring[11], UCSF staff, students, and patients and visitors, and campus site observations by Transportation Services staff, and ongoing coordination with SFMTA staff.

The results of the various monitoring efforts would be used to inform when and whether UCSF would:

- Implement additional TDM strategies that seek to minimize the number of single occupancy vehicle trips (SOV) generated by the LRDP;
- Revise UCSF Shuttle system operations; and/or
- Introduce or enhance campus-wide or specific measures to reduce conflicts with Muni service.

Should the need for additional shuttle service be triggered by increased ridership due to shifts in travel mode or demand generated by the LRDP, UCSF Transportation Services would first review that the additional service would not negatively affect Muni operations. Once implemented, the additional service would be monitored to the same standard as that identified above. Further, should conflicts between shuttle service and Muni service arise, UCSF Transportation Services would coordinate with SFMTA staff to resolve these conflicts and ensure UCSF shuttles do not negatively affect Muni operations. Additionally, none of the specific proposals of the LRDP would reduce access to or reconfigure transit stops in a way that would degrade transit service to the campus site; therefore the new transit trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.1.2 Regional Transit Service

UCSF staff, patrons and students are anticipated to continue to use BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit for regional transit service through the LRDP horizon year. Regional service stations are likely to remain at existing locations, over half a mile away, and can be accessed by other transit modes such as SF Muni and the UCSF shuttle.

Less than 20 additional regional transit trips are expected during each AM and PM peak hours. This increase would not require the expansion of regional transit service or facilities; therefore the new regional transit trips generated by the LRDP would result in a ***less-than-significant impact***.

[11] UCSF monitors its shuttle ridership demand by conducting monthly audits to capture boarding data, and the data is used to continually adjust shuttle operations to meet peak ridership demand. The monthly audits are conducted for one entire week (five business days) on all routes, throughout the entire day. In addition, UCSF conducts an annual UCSF Transportation Survey that is distributed to all members of our community. The data is used to measure and benchmark the efficacy of the existing TDM programs, and assist in designing new programs.

4.3.1.3 UCSF Shuttle

As part of the Parnassus Avenue Streetscape Plan, UCSF will reorganize UCSF shuttle operations by centralizing pick-up and drop-off locations. Existing shuttle stations located at the campus site gateways will be relocated to the center of the campus site on Parnassus Avenue, fronting the campus library in the westbound direction and the Clinical Sciences building in the eastbound direction. The LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as LRDP projects are constructed and occupied at each respective campus site.

An additional approximately 120 AM peak hour shuttle person trips and 100 PM peak hour shuttle person trips, an approximately 15 percent increase during both peak hours are anticipated through the LRDP horizon year. This increased ridership would require an additional 5-7 shuttles during the AM and PM peak hours, an approximately 10-15 percent increase compared to the existing shuttles service at the Parnassus Heights campus site. As described in Section 4.3.1.1, UCSF Transportation Services would monitor shuttle conditions to ensure the shuttle loading zone would be adequate to accommodate the additional service and that the shuttle service would not conflict with Muni operations.

The increased shuttle trips would not require the expansion of UCSF shuttle service or facilities beyond what would be expected through the regular monitoring by UCSF Transportation Services, nor would the increased shuttle demand cause a substantial conflict among autos, bicyclists, pedestrians, and transit vehicles. Therefore, the new UCSF shuttle trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.2 Mission Bay

The increase in Mission Bay campus site peak hour transit trips generated by the LRDP are described in **Table 4-8**. These net new peak hour transit trips are expected to use a combination of local and regional transit services and UCSF shuttle service.

TABLE 4-8: NEW PEAK HOUR TRANSIT TRIPS – MISSION BAY

Transit Route	AM Peak Hour			PM Peak Hour		
	In	Out	Total[1]	In	Out	Total[1]
SF Muni						
T Third Street	569	44	614	55	483	538
10 Townsend	36	3	39	3	26	29
22 Fillmore	275	10	285	12	257	269
Sub-Total	**880**	**57**	**937**	**70**	**766**	**836**
BART						
Eastbound	224	16	240	19	202	221
Southbound	468	22	490	29	408	437
Sub-Total	**692**	**38**	**730**	**48**	**610**	**658**
AC Transit						
Eastbound	103	5	108	7	88	95
Sub-Total	**103**	**5**	**108**	**7**	**88**	**95**
Caltrain						
Southbound	147	9	156	11	132	143
Sub-Total	**147**	**9**	**156**	**11**	**132**	**143**
SamTrans						
Routes 292	25	1	26	2	23	25
Sub-Total	**25**	**1**	**26**	**2**	**23**	**25**
Golden Gate Transit						
Northbound	26	2	28	2	23	25
Sub-Total	**26**	**2**	**28**	**2**	**23**	**25**
Other						
Sub-Total	**74**	**6**	**80**	**6**	**65**	**72**
UCSF and MBTMA Shuttles						
All Mission Bay Shuttles	1,039	75	1,114	105	964	1,069
Total	**2,986**	**193**	**3,178**	**251**	**2,671**	**2,923**

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+Muni, AC Transit+Muni, Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, Fehr & Peers, 2014

As shown in **Table 4-8**, approximately 3,000 new transit trips are expected during the AM and PM peak hours. Approximately 30-percent of all transit trips, about 900 AM peak hour trips and 800 PM peak hour trips, will commute to and from the campus site by SF Muni and approximately 35-percent will use the UCSF and MBTMA shuttles. The remaining 35-percent of new transit trips will be on BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit.

4.3.2.1 SF Muni

As presented in **Table 2-12**, existing Muni stops are located within a half-mile to the campus site and are accessible by walking. As described in Chapter 2, the TEP proposes several changes on routes traversing through and within the vicinity of the Mission Bay campus site.

T Third Street: The TEP proposes to reduce the peak period headways of the T Third Street route from 9.5 minutes to 8.5 minutes.

10 Townsend: The TEP proposes to rename the 10 Townsend to the 10 Sansome, re-route service from Townsend Street through Mission Bay, and reduce headways during peak periods to every 6 minutes and midday headways to every 12 minutes.

22/55 Fillmore: The TEP proposes to re-route the 22 Fillmore by continuing its route on 16th Street between Kansas and Rhode Island Streets to the Mission Bay campus site and reduce headways to every 5.5 to 6 minutes during peak headways and every 7.5 minutes during the midday. As described in Section 2.4.3, prior to the extension of the 22 Fillmore into Mission Bay via either the Moderate or Expanded Alternative, the SFMTA proposes to implement a temporary motor coach service to coincide with the opening of Phase One Medical Center at Mission Bay between the campus site and the 16th Street BART Station for an initial service phase. The preliminary name for this interim service is the Muni line '55.' The route would follow 16th Street between Mission Street to Third Street and Third Street from 16th Street to Mission Bay Boulevard North.

The Muni trips as assigned in **Table 4-8** were added to the load of Muni lines that serve the campus site. Specifically, the Muni trips were added to capacity utilization of the lines at the maximum load point between the campus site and the point at which the line where riders transfer to/from regional transit (i.e. 16th Street BART – 22 Fillmore, Temporary Transbay Terminal – 10 Townsend, T Third Street – Embarcadero BART). **Table 4-9** and **Table 4-10** show the maximum load point and capacity utilization for the transit routes with the LRDP-generated transit trips added to them to reflect the Existing Plus LRDP scenario with and without the Muni line 55 route, which is anticipated to begin service to coincide with the opening of Phase One Medical Center at Mission Bay, and is thus considered in the analysis of the LRDP projects in place at the Mission Bay Campus Site. The analysis of ridership for the scenario including the Muni line 55 route was performed using existing ridership information and can be found in **Appendix F**.

TABLE 4-9: TRANSIT CAPACITY UTILIZATION (NO ROUTE 55) – MISSION BAY							
	Direction	Existing			Existing Plus LRDP		
		Pass. Load	Peak Hour Capacity	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
AM Peak Hour							
T Third Street (to Downtown)	Inbound	428	714	60%	35	463	65%
	Outbound	346	833	42%	357	703	84%
T Third Street (South of Mission Bay)	Inbound	389	714	54%	213	602	84%
	Outbound	236	833	28%	9	245	29%
10 Townsend	Inbound	141	189	75%	3	144	76%
	Outbound	117	189	62%	36	153	81%
22 Fillmore[1]	Inbound	193	420	46%	5	198	47%
	Outbound	273	420	65%	208	481	**115%**
PM Peak Hour							
T Third Street (to Downtown)	Inbound	365	830	44%	297	662	80%
	Outbound	550	714	77%	40	590	83%
T Third Street (South of Mission Bay)	Inbound	263	830	32%	15	278	33%
	Outbound	316	714	44%	186	502	70%
10 Townsend	Inbound	123	189	65%	26	149	79%
	Outbound	171	189	**90%**	3	174	**92%**
22 Fillmore	Inbound	323	473	68%	215	538	**114%**
	Outbound	210	473	44%	7	217	46%

Note: Pass. = Passenger ; Util. = Utilization

Bold: > % 85 Capacity Utilization

1. The section of the 22 Fillmore south of the Mission Bay campus site is not included in this analysis because it does not connect to a regional transit hub.

Source: Adavant Consulting, Fehr & Peers, 2014

TABLE 4-10: TRANSIT CAPACITY UTILIZATION (WITH ROUTE 55) – MISSION BAY							
	Direction	Existing			Existing Plus LRDP		
		Pass. Load	Peak Hour Capacity[1]	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
AM Peak Hour							
22/55 Fillmore	Inbound	193	704	27%	5	198	28%
	Outbound	273	704	39%	208	481	68%
PM Peak Hour							
22/55 Fillmore	Inbound	323	757	43%	215	538	71%
	Outbound	210	757	28%	7	217	29%

Note: Pass. = Passenger ; Util. = Utilization.

1. Peak Hour Capacity reflects the addition of 55 Route Service with AM and PM peak hour service frequencies of approximately four buses per hour.

Source: Adavant Consulting, Fehr & Peers, 2014

As shown in **Table 4-9**, once the estimated number of LRDP-generated Muni trips are added to the T Third Street and 10 Townsend, those Muni routes would still continue to operate satisfactorily according to Muni crowding standards (Note the 10 Inbound Townsend during the PM peak hour operated at greater than 85% capacity utilization, both with and without the LRDP-generated trips, but the LRDP does not contribute to crowding on the line in a significant way).

The 22 Fillmore would operate at greater than 85% capacity utilization with the addition of LRDP-generated trips, but as shown in **Table 4-10**, with the addition of the interim 55 Route, the combination of the 22 Fillmore and the 55 Route would operate at less than 85% capacity utilization during both the AM and PM peak hours.

The estimated number of LRDP-generated Muni trips traveling to and from the Mission Bay campus site would not require the expansion of transit service or facilities. Long-term funding for the 55 Route is uncertain. If Muni were to discontinue the service, UCSF would replace the transit capacity with shuttle service adequate to fill the gap in transit service. Thus, this analysis includes the 55 Route as a de facto permanent service.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP, would continue to do so in particular at the four UCSF campus sites where development is proposed. Similar to the Parnassus Heights campus site, UCSF would monitor vehicle traffic conditions, transit operations, and shuttle ridership within and surrounding the Mission Bay campus site.

Should the need for additional shuttle service be triggered by increased ridership due to shifts in travel mode or demand generated by the LRDP, UCSF Transportation Services would first review that the additional service would not negatively affect Muni operations. Once implemented, the additional service would be monitored to the same standard as that identified above. Further, should conflicts between shuttle service and Muni service arise, UCSF Transportation Services would coordinate with SFMTA staff to resolve these conflicts and ensure UCSF shuttles do not negatively affect Muni operations. Additionally, none of the specific proposals of the LRDP would reduce access to or reconfigure transit stops in a way that would degrade transit service to the campus site; therefore the new transit trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.2.2 Regional Transit Service

In addition to Muni operations for travel within San Francisco, regional transit services such as BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit were considered for the analysis. Existing stations are located over a mile away and can access the Mission Bay campus site by Muni or UCSF and MBTMA shuttles. Major service changes are not anticipated in the near-term.

The number of new LRDP-generated regional transit trips would not require the expansion of regional transit service or facilities; therefore the new regional transit trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.2.3 UCSF and Mission Bay Transportation Management Association Shuttle Trips

The LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as LRDP projects are constructed and occupied at each respective campus site and MBTMA may do the same as development occurs in the

Mission Bay area. With the opening of the Phase One Medical Center at Mission Bay, additional shuttle stops will be provided fronting the new hospital; however headways and service route changes are unanticipated at this time.

An additional approximately 1,110 AM peak hour shuttle person trips and 1,070 PM peak hour shuttle person trips, an approximately 90% and 185% increase in shuttle person trips during the AM and PM peak hours, respectively, are anticipated through the LRDP horizon year. This increased ridership would require approximately 70 new shuttles during the AM and PM peak hours to the Mission Bay Campus Site, which would represent a 160% increase in shuttle service to this campus site. As described in Section 4.3.2.1, UCSF Transportation Services would monitor shuttle conditions to ensure the shuttle loading zones would be adequate to accommodate the additional service and that the shuttle service would not conflict with Muni operations. If new shuttle loading zones within the Mission Bay Campus Site are required to accommodate this increased shuttle service, UCSF Transportation Services would work with the SFMTA to determine the appropriate locations for these stops and seek approval of these new stops.

The increased shuttle trips would not require the expansion of UCSF shuttle service or facilities beyond what would be expected through the regular monitoring by UCSF Transportation Services, nor would the increased shuttle demand cause a substantial conflict among autos, bicyclists, pedestrians, and transit vehicles. Therefore, the new UCSF shuttle trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.2.4 LRDP Variant

The increase in Mission Bay campus site peak hour transit trips generated by the LRDP Variant are described in **Table 4-11**. These net new peak hour transit trips are expected to use a combination of local and regional transit services and UCSF shuttle service.

TABLE 4-11: NEW PEAK HOUR TRANSIT TRIPS – MISSION BAY (LRDP VARIANT)

Transit Route	AM Peak Hour			PM Peak Hour		
	In	Out	Total[1]	In	Out	Total[1]
SF Muni						
T Third Street	597	51	648	60	499	559
10 Townsend	38	3	41	3	28	31
22 Fillmore	273	10	283	12	260	272
Sub-Total	**908**	**64**	**972**	**75**	**787**	**862**
BART						
Eastbound	232	20	252	21	207	228
Southbound	474	23	497	31	413	444
Sub-Total	**706**	**43**	**749**	**52**	**620**	**672**
AC Transit						
Eastbound	104	6	110	8	89	97
Sub-Total	**104**	**6**	**110**	**8**	**89**	**97**
Caltrain						
Southbound	151	6	157	11	136	147
Sub-Total	**151**	**6**	**157**	**11**	**136**	**147**
SamTrans						
Routes 292	27	1	28	2	23	25

Sub-Total	**27**	**1**	**28**	**2**	**23**	**25**
Golden Gate Transit						
Northbound	27	3	30	3	23	26
Sub-Total	**27**	**3**	**30**	**3**	**23**	**26**
Other						
Sub-Total	**78**	**5**	**83**	**7**	**66**	**73**
UCSF and MBTMA Shuttles						
All Mission Bay Shuttles	1,068	81	1,149	114	985	1,099
Total	**3,069**	**209**	**3,278**	**272**	**2,729**	**3,001**

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+Muni, AC Transit+Muni, Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, Fehr & Peers, 2014

As shown in **Table 4-11**, approximately 3,000 new transit trips are expected during the AM and PM peak hours. Approximately 30-percent of all transit trips, about 900 AM peak hour trips and 800 PM peak hour trips, will commute to and from the campus site by SF Muni and approximately 35-percent will use the UCSF and MBTMA shuttles. The remaining 35-percent of new transit trips will be on BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit.

4.3.2.4.1 SF Muni

Muni conditions associated with the LRDP Variant would be similar to those described above for the 2014 LRDP. The Muni trips as assigned in **Table 4-11** were added to the load of Muni lines that serve the campus site. Specifically, the Muni trips were added to capacity utilization of the lines at the maximum load point between the campus site and the point at which the line where riders transfer to/from regional transit (i.e. 16th Street BART – 22 Fillmore, Temporary Transbay Terminal – 10 Townsend, T Third Street – Embarcadero BART). **Table 4-12** and **Table 4-13** show the maximum load point and capacity utilization for the transit routes with the LRDP Variant-generated transit trips added to them to reflect the Existing Plus LRDP Variant scenario with and without the Muni line 55 route, which is anticipated to begin service to coincide with the opening of Phase One Medical Center at Mission Bay, and is thus considered in the analysis of the LRDP projects in place at the Mission Bay campus site. The analysis of ridership for the scenario including the Muni line 55 route was performed using existing ridership information and can be found in **Appendix F**.

TABLE 4-12: TRANSIT CAPACITY UTILIZATION (NO ROUTE 55) – MISSION BAY (LRDP VARIANT)

	Direction	Existing			Existing Plus LRDP Variant		
		Pass. Load	Peak Hour Capacity	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
AM Peak Hour							
T Third Street (to Downtown)	Inbound	428	714	60%	41	469	66%
	Outbound	346	833	42%	380	726	**87%**
T Third Street (South of Mission Bay)	Inbound	389	714	54%	217	606	85%
	Outbound	236	833	28%	10	246	30%

10 Townsend	Inbound	141	189	75%	3	144	76%
	Outbound	117	189	62%	38	155	82%
22 Fillmore[1]	Inbound	193	420	46%	6	199	47%
	Outbound	273	420	65%	199	472	**112%**
PM Peak Hour							
T Third Street (to Downtown)	Inbound	365	830	44%	312	677	82%
	Outbound	550	714	77%	44	594	83%
T Third Street (South of Mission Bay)	Inbound	263	830	32%	16	279	34%
	Outbound	316	714	44%	187	503	70%
10 Townsend	Inbound	123	189	65%	28	151	80%
	Outbound	171	189	**90%**	3	174	**92%**
22 Fillmore	Inbound	323	473	68%	214	537	**114%**
	Outbound	210	473	44%	8	218	46%

Note: Pass. = Passenger ; Util. = Utilization

Bold: > % 85 Capacity Utilization

1. The section of the 22 Fillmore south of the Mission Bay campus site is not included in this analysis because it does not connect to a regional transit hub.

Source: Adavant Consulting, Fehr & Peers, 2014

TABLE 4-13: TRANSIT CAPACITY UTILIZATION (WITH ROUTE 55) – MISSION BAY (LRDP VARIANT)

	Direction	Existing			Existing Plus LRDP Variant		
		Pass. Load	Peak Hour Capacity[1]	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
AM Peak Hour							
22/55 Fillmore	Inbound	193	704	27%	6	199	28%
	Outbound	273	704	39%	199	472	67%
PM Peak Hour							
22/55 Fillmore	Inbound	323	757	43%	214	537	71%
	Outbound	210	757	28%	8	218	29%

Note: Pass. = Passenger ; Util. = Utilization.

1. Peak Hour Capacity reflects the addition of 55 Route Service with AM and PM peak hour service frequencies of approximately four buses per hour.

Source: Adavant Consulting, Fehr & Peers, 2014

As shown in **Table 4-12,** once the estimated number of LRDP Variant-generated Muni trips are added to the 10 Townsend, this Muni route would still continue to operate satisfactorily according to Muni crowding standards (Note the 10 Inbound Townsend during the PM peak hour operated at greater than 85% capacity utilization, both with and without the LRDP Variant-generated trips, but the LRDP Variant does not contribute to crowding on the line in a significant way).

The T Third Street would operate at greater than 85% capacity utilization with the addition of LRDP Variant-generated trips under the AM peak hour in the outbound direction (towards UCSF). While this is not considered a significant impact per UCSF transit standards, this would exceed Muni's crowding standards. Therefore, the following Improvement Measure has been identified:

Improvement Measure IM-TR-1: Study and Implement Uses to Minimize Transit Trips on the Muni T Third Street Line

- Development of clinical uses on Blocks 33/34 is considered a "secondary use" under the Mission Bay South Redevelopment Plan, which requires findings by the Office of Community Investment and Infrastructure that the use is consistent with the Mission Bay South Redevelopment Plan. UCSF would continue to study the amount of clinical space proposed under the LRDP Variant, and would refine the proposal before bringing it forth to the City for approval. In refining the LRDP Variant, UCSF would consider reducing the size of the clinical facilities at Blocks 33/34 to a level that will reduce the transit ridership on the T Third Street to less than the Muni's capacity utilization of 85 percent.

The 22 Fillmore would operate at greater than 85% capacity utilization with the addition of LRDP Variant-generated trips, but as shown in **Table 4-13**, with the addition of the interim 55 Route, the combination of the 22 Fillmore and the 55 Route would operate at less than 85% capacity utilization during both the AM and PM peak hours.

The estimated number of LRDP Variant-generated Muni trips traveling to and from the Mission Bay campus site would not require the expansion of transit service or facilities. Long-term funding for the 55 Route is uncertain. If Muni were to discontinue the service, UCSF would replace the transit capacity with shuttle service adequate to fill the gap in transit service. Thus, this analysis includes the 55 Route as a de facto permanent service.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP, would continue to do so in particular at the four UCSF campus sites where development is proposed. Similar to the Parnassus Heights campus site, UCSF would monitor vehicle traffic conditions, transit operations, and shuttle ridership within and surrounding the Mission Bay campus site.

Should the need for additional shuttle service be triggered by increased ridership due to shifts in travel mode or demand generated by the LRDP Variant, UCSF Transportation Services would first review that the additional service would not negatively affect Muni operations. Once implemented, the additional service would be monitored to the same standard as that identified for the 2014 LRDP above. Further, should conflicts between shuttle service and Muni service arise, UCSF Transportation Services would coordinate with SFMTA staff to resolve these conflicts and ensure UCSF shuttles do not negatively affect Muni operations. Additionally, none of the specific proposals of the LRDP Variant would reduce access to or reconfigure transit stops in a way that would degrade transit service to the campus site; therefore the new transit trips generated by the LRDP Variant would result in a ***less-than-significant impact***.

4.3.2.4.2 Regional Transit Service

Regional transit conditions associated with the LRDP Variant would be similar to those described above for the 2014 LRDP. Under the LRDP Variant, the Mission Bay campus site would generate slightly more regional transit trips than the 2014 LRDP. The increase in regional transit trips would be commensurate with the percentage increase in new peak hour vehicle trips generated by the 2014 LRDP plan for the Mission Bay campus site. The number of new LRDP Variant-generated regional transit trips would not require the expansion of regional transit service or facilities; therefore the new regional transit trips generated by the LRDP Variant would result in a ***less-than-significant impact***.

4.3.2.4.3 UCSF and Mission Bay Transportation Management Association Shuttle Trips

UCSF and MBTMA shuttle transit conditions associated with the LRDP Variant would be similar to those described above for the 2014 LRDP. Under the LRDP Variant, the Mission Bay campus site would generate slightly more shuttle trips than the LRDP. The increase in shuttle trips would be commensurate with the percentage increase in new peak hour vehicle trips generated by the 2014 LRDP plan for the Mission Bay campus site. The increased shuttle trips would not require the expansion of UCSF shuttle service or facilities beyond what would be expected through the regular monitoring by UCSF Transportation Services, nor would the increased shuttle demand cause a substantial conflict among autos, bicyclists, pedestrians, and transit vehicles. Therefore, the new UCSF shuttle trips generated by the LRDP Variant would result in a ***less-than-significant impact***.

4.3.3 Mount Zion

The increase in Mount Zion campus site peak hour transit trips generated by the LRDP are described in **Table 4-14**. These new peak hour transit trips are expected to use a combination of local and regional transit services and UCSF shuttle service.

TABLE 4-14: NET NEW PEAK HOUR TRANSIT TRIPS – MOUNT ZION

Transit Route	AM Peak Hour			PM Peak Hour		
	In	Out	Total[1]	In	Out	Total[1]
SF Muni						
1 California	5	2	7	0	2	2
2 Clement	14	7	21	3	5	8
24 Divisadero	25	10	35	4	13	17
38/L Geary/Limited	79	20	99	6	48	54
N Judah	4	0	4	0	3	3
Sub-Total	**127**	**39**	**166**	**13**	**71**	**84**
BART						
Eastbound	22	4	26	1	16	17
Southbound	17	1	18	1	12	13
Sub-Total	**39**	**5**	**44**	**2**	**28**	**30**
Caltrain						
Southbound	4	0	4	0	3	3
Sub-Total	**4**	**0**	**4**	**0**	**3**	**3**
SamTrans						
Routes 292	4	0	4	0	3	3
Sub-Total	**4**	**0**	**4**	**0**	**3**	**3**
Golden Gate Transit						
Northbound	13	2	15	0	8	8
Sub-Total	**13**	**2**	**15**	**0**	**8**	**8**
UCSF Shuttle						
All Mt. Zion Shuttles	29	0	29	3	24	27
Sub-Total	**29**	**0**	**29**	**3**	**24**	**27**
Total	***216***	***43***	***262***	***18***	***137***	***155***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+Muni, AC Transit+Muni, Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

As shown in **Table 4-14**, approximately 260 and 160 net new transit trips are expected during the AM and PM peak hour, respectively. About 60-percent of transit users will use SF Muni and 20-percent will use BART to commute to and from the campus site, while the remaining 20-percent of transit users will use the UCSF shuttle, Caltrain, SamTrans or Golden Gate Transit.

4.3.3.1 SF Muni

As presented in **Table 4-15** existing Muni stops are located within a half-mile of the campus site and are accessible by walking. As described in Chapter 2, the TEP proposes several changes on routes traversing adjacent to and within the Mount Zion campus site. The 1 California, 2 Clement, and 24 Divisadero will reduce peak period headways and a supplemental trolley coach service will be added to the 2 Clement. The TEP does not propose any change to transit stop locations within the study area. In addition, Muni proposes to convert the 38 Geary/38L Geary Limited to Bus Rapid Transit (BRT), a transit service with high service frequencies that is proposed to begin service by 2020.

The Muni trips as assigned in **Table 4-14** were added to the load of the lines that serve the campus site at their maximum load point. **Table 4-15** shows the maximum load point and capacity utilization for the transit routes with the LRDP-generated transit trips added to them to reflect the Existing Plus LRDP scenario.

TABLE 4-15: TRANSIT CAPACITY UTILIZATION – MOUNT ZION

	Direction	Existing			Existing Plus LRDP		
		Pass. Load	Peak Hour Capacity	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
AM Peak Hour							
1 – California	Inbound	857	1080	79%	5	862	80%
	Outbound	583	1080	54%	2	585	54%
2 – Clement	Inbound	245	315	78%	14	259	82%
	Outbound	120	315	38%	7	127	40%
24 - Divisadero	Inbound	270	378	71%	25	295	78%
	Outbound	144	378	38%	10	154	41%
38 – Geary	Inbound	230	470	49%	40	270	57%
	Outbound	195	470	41%	10	205	44%
38L – Geary Limited	Inbound	818	1025	80%	40	858	84%
	Outbound	644	1025	63%	10	654	64%
PM Peak Hour							
1 – California	Inbound	600	1080	56%	0	600	56%
	Outbound	909	1080	84%	2	911	84%
2 – Clement	Inbound	170	315	54%	3	173	55%
	Outbound	260	315	83%	5	265	84%
24 - Divisadero	Inbound	174	378	46%	4	178	47%

	Outbound	276	378	73%	13	289	76%
38 – Geary	Inbound	352	752	47%	3	355	47%
	Outbound	450	705	64%	24	474	67%
38L – Geary Limited	Inbound	556	1025	54%	3	559	55%
	Outbound	862	1025	84%	24	886	**86%**

Note: Pass. = Passenger ; Util. = Utilization
Bold: > % 85 Capacity Utilization
Source: Adavant Consulting, Fehr & Peers, 2014

The estimated number of LRDP-generated Muni trips is about a 35 percent increase in ridership traveling to and from the Mount Zion campus site, which would not require the expansion of transit service or facilities. As shown in **Table 4-15**, the LRDP-generated transit trips for the 38 Geary corridor were split evenly between the 38 Geary and the 38L Geary Limited Outbound during the PM peak hour, resulting in the 38 Geary Limited outbound operating above the 85 percent capacity utilization, which represents Muni's crowding standard. It should be noted that transit riders could choose to travel on either bus line, thus if one bus line is over 85 percent capacity utilization (38L Geary Limited) and a parallel transit line that serves the same stops and destinations is under capacity and could accommodate additional transit riders without going over 85 percent capacity utilization (38 Geary), this would not be considered significant. If the BRT were implemented, the transit capacity along the 38 Geary corridor would increase, which would in turn decrease the capacity utilization of this corridor.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP, would continue to do so in particular at the four UCSF campus sites where development is proposed. Similar to the Parnassus Heights Campus Site, UCSF would monitor vehicle traffic conditions, transit operations, and shuttle ridership within and surrounding the Mount Zion Campus Site.

Should the need for additional shuttle service be triggered by increased ridership due to shifts in travel mode or demand generated by the LRDP, UCSF Transportation Services would first review that the additional service would not negatively affect Muni operations. Once implemented, the additional service would be monitored to the same standard as that identified above. Further, should conflicts between shuttle service and Muni service arise, UCSF Transportation Services would coordinate with SFMTA staff to resolve these conflicts and ensure UCSF shuttles do not negatively affect Muni operations. Additionally, none of the specific proposals of the LRDP would reduce access to or reconfigure transit stops in a way that would degrade transit service to the campus site; therefore the new transit trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.3.2 Regional Transit Service

In addition to Muni service, Mount Zion campus site staff and patrons are anticipated to continue to travel using regional transit services such as BART, Caltrain, SamTrans, and Golden Gate Transit. Regional service stations are accessible from the Mount Zion campus site via Muni or UCSF shuttles, and Golden Gate Transit riders can walk to the nearest stop, located on Geary Boulevard and Divisadero Street.

Less than 70 additional regional transit trips are expected during each AM and PM peak hours. This increase would not require the expansion of regional transit service or facilities; therefore the new regional transit trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.3.3 UCSF Shuttle

UCSF shuttle service operations summarized in Chapter 2 will continue to serve the Mount Zion campus site. The LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as LRDP projects are constructed and occupied at each respective campus site.

An additional approximately 30 AM and PM peak hour shuttle person trips, an approximately 40 percent increase during both peak hours are anticipated through the LRDP horizon year.

This increased ridership would require an additional two shuttles during the AM and PM peak hours to the Mount Zion Campus Site. As described in Section 4.3.3.1, UCSF Transportation Services would monitor shuttle conditions to ensure the shuttle loading zone would be adequate to accommodate the additional service and that the shuttle service would not conflict with Muni operations.

The increased shuttle trips would not require the expansion of UCSF shuttle service or facilities beyond what would be expected through the regular monitoring by UCSF Transportation Services, nor would the increased shuttle demand cause a substantial conflict among autos, bicyclists, pedestrians, and transit vehicles. Therefore, the new UCSF shuttle trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.4 Mission Center

The increase in Mission Center campus site peak hour transit trips generated by the LRDP are described in **Table 4-16**. These net new peak hour transit trips are expected to use a combination of local and regional transit services and UCSF shuttle service.

TABLE 4-16: NET NEW PEAK HOUR TRANSIT TRIPS – MISSION CENTER

Transit Route	AM Peak Hour			PM Peak Hour		
	In	Out	Total[1]	In	Out	Total[1]
SF Muni						
9/L San Bruno/Limited	2	0	2	0	2	2
12 Folsom/Pacific	10	0	10	0	9	9
14/L Mission/Limited	2	0	2	0	2	2
22 Fillmore	7	0	7	0	6	6
27 Bryant	3	0	3	0	3	3
33 Stanyan	6	0	6	0	6	6
47 Van Ness	7	0	7	0	7	7
49 Mission/Van Ness	1	0	1	0	1	1
Sub-Total	**38**	**0**	**38**	**0**	**36**	**36**
BART						
Eastbound	12	0	12	0	12	12
Southbound	12	0	12	1	11	12
Sub-Total	**24**	**0**	**24**	**1**	**23**	**24**
Caltrain						
Southbound	6	0	6	0	6	6
Sub-Total	**6**	**0**	**6**	**0**	**6**	**6**
SamTrans						
Route 292	2	0	2	0	2	2
Sub-Total	**2**	**0**	**2**	**0**	**2**	**2**
Golden Gate Transit						
Northbound	4	0	4	0	4	4
Sub-Total	**4**	**0**	**4**	**0**	**4**	**4**
UCSF Shuttle						
All Mission Center Shuttles	31	0	31	1	28	29
Sub-Total	**31**	**0**	**31**	**1**	**28**	**29**
Total	***105***	***0***	***105***	***2***	***99***	***101***

Notes:

1. Peak hour trips account for external trips only. Some transit users may use multiple transit modes on a single trip (e.g. BART+Muni, AC Transit+Muni, Muni+UCSF Shuttle, etc.). The table accounts for the total number of trips on each system, therefore transfer trips are counted multiple times.

Source: Adavant Consulting, 2014

As shown in **Table 4-16**, approximately 100 net new transit trips are expected during the AM and PM peak hour. About 35-percent of transit users will use SF Muni, 30 percent will use UCSF shuttles, and 25-percent will use BART to commute to and from the campus site, while the remaining 10-percent of transit users will use AC Transit, Caltrain, SamTrans, or Golden Gate Transit.

4.3.4.1 SF Muni

As presented in **Table 2-28**, existing Muni stops are located within a half-mile of the campus site and are accessible by walking. As described in Chapter 2, the TEP proposes several changes on routes adjacent to the Mission Center campus site. The 9L San Bruno Limited, 14/14L Mission Limited, and 22 Fillmore will reduce peak period headways. The 12 Folsom/Pacific will be discontinued though a majority of the route will be served by rerouting the 27 Bryant and the new 11 Downtown Connector. In addition to increasing peak period headways, the 22 Fillmore will be rerouted to continue along 16th Street, connecting to Mission Bay. The TEP does not propose any change to transit stop locations within the study area.

The Muni trips as assigned in **Table 4-16** were added to the load of the lines that serve the campus site at their maximum load point. **Table 4-17** shows the capacity utilization for the transit routes with the LRDP-generated transit trips added to them to reflect the Existing Plus LRDP scenario.

TABLE 4-17: TRANSIT CAPACITY UTILIZATION – MISSION CENTER

	Direction	Existing			Existing Plus LRDP		
		Pass. Load	Peak Hour Capacity	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
AM Peak Hour							
9 – San Bruno	Inbound	225	315	71%	1	226	72%
	Outbound	175	315	56%	0	175	56%
9L – San Bruno Limited	Inbound	240	315	76%	1	241	77%
	Outbound	115	315	37%	0	115	37%
12 – Folsom/Pacific	Inbound	123	189	65%	10	133	70%
	Outbound	144	189	76%	0	144	76%
14 – Mission	Inbound	370	940	39%	1	371	39%
	Outbound	220	940	23%	0	220	23%
14L – Mission Limited	Inbound	487	627	78%	1	488	78%
	Outbound	180	627	29%	0	180	29%
22 – Fillmore	Inbound	293	420	70%	7	300	71%
	Outbound	287	420	68%	0	287	68%
27 – Bryant	Inbound	132	252	52%	3	135	54%
	Outbound	140	252	56%	0	140	56%
33 – Stanyan	Inbound	140	252	56%	6	146	58%
	Outbound	128	252	51%	0	128	51%
47 – Van Ness	Inbound	294	378	78%	7	301	80%
	Outbound	276	378	73%	0	276	73%
49 – Mission/Van Ness	Inbound	345	705	49%	1	346	49%
	Outbound	285	705	40%	0	285	40%
PM Peak Hour							
9 – San Bruno	Inbound	180	315	57%	0	180	57%
	Outbound	215	315	68%	1	216	69%
9L – San Bruno Limited	Inbound	140	315	44%	0	140	44%
	Outbound	200	315	63%	1	201	64%
12 – Folsom/Pacific	Inbound	135	189	71%	0	135	71%
	Outbound	126	189	67%	9	135	71%
14 – Mission	Inbound	232	752	31%	0	232	31%

TABLE 4-17: TRANSIT CAPACITY UTILIZATION – MISSION CENTER

	Direction	Existing			Existing Plus LRDP		
		Pass. Load	Peak Hour Capacity	Capacity Util.	New Transit Trips	Pass. Load	Capacity Util.
14L – Mission Limited	Outbound	360	752	48%	1	361	48%
	Inbound	293	627	47%	0	293	47%
	Outbound	427	627	68%	1	428	68%
22 – Fillmore	Inbound	323	473	68%	0	323	68%
	Outbound	308	473	65%	6	314	66%
27 – Bryant	Inbound	160	252	63%	0	160	63%
	Outbound	116	252	46%	3	119	47%
33 – Stanyan	Inbound	156	252	62%	0	156	62%
	Outbound	132	252	52%	6	138	55%
47 – Van Ness	Inbound	276	378	73%	0	276	73%
	Outbound	258	378	68%	7	265	70%
49 – Mission/Van Ness	Inbound	353	705	50%	0	353	50%
	Outbound	375	705	53%	1	376	53%

Note: Pass. = Passenger ; Util. = Utilization

Bold: > % 85 Capacity Utilization

Source: Adavant Consulting, Fehr & Peers, 2014

The estimated number of LRDP-generated Muni trips represents less than five percent increase in ridership on any Muni line in the vicinity of the Mission Center campus site, which would not require the expansion of transit service or facilities. As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP, would continue to do so in particular at the four UCSF campus sites where development is proposed. Similar to the Parnassus Heights Campus Site, UCSF would monitor vehicle traffic conditions, transit operations, and shuttle ridership within and surrounding the Mission Center Campus Site.

Should the need for additional shuttle service be triggered by increased ridership due to shifts in travel mode or demand generated by the LRDP, UCSF Transportation Services would first review that the additional service would not negatively affect Muni operations. Once implemented, the additional service would be monitored to the same standard as that identified above. Further, should conflicts between shuttle service and Muni service arise, UCSF Transportation Services would coordinate with SFMTA staff to resolve these conflicts and ensure UCSF shuttles do not negatively affect Muni operations. Additionally, none of the specific proposals of the LRDP would reduce access to or reconfigure transit stops in a way that would degrade transit service to the campus site; therefore the new transit trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.4.2 Regional Transit Service

In addition to Muni service, Mission Center staff, patrons and students are anticipated to continue to use BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit for regional transit service through the LRDP horizon year. Regional service stations are likely to remain at existing locations, over half a mile away, and can be accessed by other transit modes such as SF Muni and the UCSF shuttle and by walking in the case of the 16th Street BART.

Less than 40 additional regional transit trips are expected during each AM and PM peak hours. This increase would not require the expansion of regional transit service or facilities; therefore the new regional transit trips generated by the LRDP would result in a ***less-than-significant impact***.

4.3.4.3 UCSF Shuttle

UCSF shuttle service operations summarized in Chapter 2 will continue to serve the Mission Center campus site. With the LRDP, the shuttle stop and loading area will be shifted to 15th Street, just east of the vehicle access point. The proposed shuttle loading areas should accommodate two shuttles loading at one time. The new shuttle stop would displace three on-street spaces with parking meters. The LRDP does not propose specific changes to shuttle service headways, although UCSF Transportation Services may change headways based on shifting shuttle demand as LRDP projects are constructed and occupied at each respective campus site.

An additional approximately 30 AM and PM peak hour shuttle person trips, an approximately 60 percent increase during both peak hours are anticipated through the LRDP horizon year. This increased ridership would require an additional two shuttles during the AM and PM peak hours to the Mission Bay Campus Site. As described in Section 4.3.4.1, UCSF Transportation Services would monitor shuttle conditions to ensure the shuttle loading zone would be adequate to accommodate the additional service and that the shuttle service would not conflict with Muni operations.

The increased shuttle trips would not require the expansion of UCSF shuttle service or facilities beyond what would be expected through the regular monitoring by UCSF Transportation Services, nor would the increased shuttle demand cause a substantial conflict among autos, bicyclists, pedestrians, and transit vehicles. Therefore, the new UCSF shuttle trips generated by the LRDP would result in a ***less-than-significant impact***.

4.4 PEDESTRIAN IMPACTS

LRDP horizon pedestrian trips were estimated based on existing travel surveys of UCSF staff and visitors as described in Chapter 3. Pedestrian trips generated by the four UCSF campus sites would include walk trips to and from nearby residences, commercial uses, and local and regional transit stops. The sections below describe the proposed modifications to pedestrian facilities surrounding the campus sites, estimated peak hour pedestrian trips, and potential conflicts to pedestrian circulation associated with each campus site.

As part of the LRDP, UCSF would design new buildings to ensure that the ground floor frontage and public realm elements do not impact the pedestrian environment. Buildings would be assessed based on their retail uses, useable open space, and active building entries to ensure they are oriented toward the sidewalk or pedestrian plazas to create a compelling public realm and promote walking as a form of travel.

4.4.1 Parnassus Heights

UCSF proposes a variety of improvements to pedestrian and transit facilities at the campus site. The *Parnassus Avenue Streetscape Plan* proposes to make crossing Parnassus Avenue safer and more convenient for pedestrians, reorganize and improve transit and UCSF shuttle operations, create more

usable outdoor space, and enhance the public realm. Specific improvements may include new paving, street furniture, lighting, and street trees, as well as sidewalk and crosswalk widening and better defined campus site gateways. The *Parnassus Avenue Streetscape Plan* also proposes to modify the existing UCSF shuttle stops from the gateways of the campus site to a central location fronting the campus library in the westbound direction and the Clinical Sciences Building in the eastbound direction. The improvements would occur in phases starting on the south side of Parnassus Avenue, at the west end at Fifth Avenue, and move through the core of the campus site and along the front of the New Hospital Addition, finishing at Medical Center Way. In addition to the *Streetscape Plan*, the LRDP proposes to construct new trails in the Mount Sutro Open Space Reserve.

The LRDP would add approximately 210 pedestrian trips to the surrounding streets (including 40 walk trips and 170 transit-access trips) during the AM peak hour and approximately 190 pedestrian trips (including 30 walk trips and 160 transit-access trips) during the PM peak hour.[12] Pedestrian trips would primarily use Parnassus Avenue and Carl-Irving Streets to travel to the surrounding residential neighborhoods or to the commercial areas in the Inner Sunset and Cole Valley. LRDP-generated transit trips will begin as pedestrian trips traveling to the nearest Muni or UCSF shuttle stops. Most transit riders would use the Muni and UCSF shuttle stops within the campus site on Parnassus Avenue and Carl Street. Other transit riders would walk along Parnassus Avenue or Irving Street to Muni stops on Ninth Avenue and Lincoln Way.

The *Parnassus Avenue Streetscape Plan* proposes to consolidate the existing Muni bus stops along Parnassus Avenue through the Parnassus Heights campus site. The bus stops would be consolidated from three stops in each direction between Fourth and Hillway avenues to two stops. At Fourth Avenue, the eastbound bus stop is proposed as a far-side stop with a 60 foot bus bulb. No modification is proposed for the existing westbound near-side stop. At Hillway Avenue, both the eastbound and westbound bus stops are proposed to be far-side stops with 60 foot bus bulbs. These changes would improve transit travel times through the campus by reducing the number of stops buses would need to make. Although these changes would require some pedestrians to potentially travel a slightly greater distance to reach a transit stop, they would not impact pedestrian access as the stop spacing would still be far below the established standards.[13]

The proposed UCSF shuttle stop changes would shift shuttle riders to the new shuttle stops located at the campus library in the westbound direction and the Clinical Sciences building in the eastbound direction. Proposed changes to buildings along Parnassus Avenue would likely shift some pedestrian traffic to the New Hospital Addition near Hillway Avenue and to the potential future housing at Parnassus and Fifth

[12] Transit access trips for the pedestrian impact discussion are calculated based on the daily trip generation presented in **Table 3-3** and the AM and PM peak hour percentage of daily trips presented in **Table 3-13**. These are different from the total transit trips presented in Section 4.3 as the transit impact analysis double counts the riders who use multiple transit modes on a single trip (e.g. BART+Muni, AC Transit+Muni, Muni+UCSF Shuttle, etc.).

[13] The SFMTA's stop spacing policy is that bus stops should be: between 800 and 1,000 feet on grades less than 10 percent; between 500 and 600 feet on grades between 10 and 15 percent; and between 300 and 400 feet on grades greater than 15 percent. The existing distance between the two stops is relatively small at approximately 500 feet. A pedestrian emerging from a building between these stops would have a maximum walking distance of approximately 250 feet. After the stop consolidation, the maximum walking distance to the Hillway Avenue stops would only increase to approximately 550 feet which is well within the established threshold. The stops to the east of the Hillway Avenue stops are approximately 600 feet away, but this distance would not be affected by the proposal.

avenues. The proposed streetscape plan would accommodate the new pedestrian trips generated by the LRDP in addition to the shifts in pedestrian traffic that would occur in the future. Overall, the LRDP would improve pedestrian accessibility on the campus site frontage through the *Parnassus Avenue Streetscape Plan* and new trails in the Reserve. The immediate area surrounding the Parnassus Heights campus site includes robust pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops. The LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the LRDP's impact to pedestrian circulation and facilities at the Parnassus Heights campus site would be ***less than significant***.

4.4.2 Mission Bay

The LRDP proposes the extension of several streets through the campus site including Nelson Rising Lane east of Fourth, Fifth, and Sixth streets south of Mission Bay Boulevard South, and Owens Street south of 16th Street. These streets would be designed with sidewalks, curb cuts, and crosswalks that minimize conflicts between vehicles and pedestrians and meet San Francisco's *Better Streets Plan* standards. In addition to these street extensions, UCSF is upgrading existing sidewalks along 16th Street and constructing a new public pedestrian plaza on Fourth Street between 16th and Mariposa streets in coordination with on-going construction. Beyond the campus site, no improvements to the pedestrian facilities in the area are proposed.

The LRDP would add approximately 2,840 pedestrian trips to the streets surrounding the Mission Bay campus site (including 500 walk trips and 2,340 transit-access trips) during the AM peak hour and approximately 2,440 pedestrian trips (including 430 walk trips and 2,010 transit-access trips) during the PM peak hour. The new pedestrian trips would be distributed throughout the North, South, and East Campuses, along the many roadways and pedestrian alleyways crossing through the campus site. Pedestrian trips leaving the campus site to residential and commercial destinations would primarily occur along 16th and Mariposa streets to the west, along Third and Minnesota streets to the south, and along Third, Fourth, and Seventh streets to the north. Muni transit riders would travel along Third Street to the T Third Street light rail line stops on Third Street and Gene Friend Way or Mariposa Street, and along 16th and Connecticut streets to the 22 Fillmore stop at 18th and Connecticut streets. Caltrain riders would travel north along Fourth Street to the station at Fourth and King streets. UCSF shuttle riders would stay within the campus site and use shuttle stops located on Fourth or Owens streets, MBTMA shuttle riders would walk to shuttle stops along Owens Street and Mission Bay Boulevard South.

As described in Section 4.3, the TEP proposes several changes on routes traversing through and within the vicinity of the Mission Bay campus site. The proposed Muni route 55 and changes to the 22 Fillmore would extend Muni service along 16th Street to proposed stops on 16th Street within the campus site. The TEP would change the 10 Townsend to the 10 Sansome and modify this route to travel through Mission Bay along Mission Bay Boulevard to Seventh Street. These proposed changes would shorten the walking distance for transit riders and reduce travel time to the transit stops for each of these routes. Although pedestrian volumes are currently relatively low due to the developing nature of the Mission Bay neighborhood, existing pedestrian facilities are designed to accommodate higher pedestrian volumes than the LRDP would generate in the future, including the 12 to 15 foot wide sidewalks and crosswalks.

The immediate area surrounding the Mission Bay campus site includes existing or proposed pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops. The LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles.

Therefore, the LRDPs impact to pedestrian circulation and facilities at the Mission Bay campus site would be ***less than significant*.**

4.4.2.1 LRDP Variant

Pedestrian conditions associated with the LRDP Variant would be similar to those described above for the 2014 LRDP. Under the LRDP Variant, the Mission Bay campus site would generate slightly more pedestrian trips than the 2014 LRDP. The increase in pedestrian trips would be commensurate with the percentage increase in new peak hour vehicle trips generated by the 2014 LRDP plan for the Mission Bay campus site. The LRDP Variant does not propose changes to the pedestrian environment compared to the 2014 LRDP. Similar to the 2014 LRDP, the LRDP Variant would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the LRDP Variant's impact to pedestrian circulation and facilities at the Mission Bay campus site would be *less than significant*. Mount Zion

The LRDP does not propose changes to pedestrian amenities or introduce new conflicts to the pedestrian network surrounding the Mount Zion campus site. Pedestrian access to the Mount Zion campus site would remain similar to the existing configuration. Overall, the LRDP would not change pedestrian accessibility on the campus site frontage. Further, the LRDP would not conflict with proposed changes to Geary Boulevard to accommodate BRT service.

The LRDP would add approximately 250 pedestrian trips to the streets surrounding the Mount Zion campus site (including 40 walk trips and 210 transit-access trips) during the AM peak hour and approximately 140 pedestrian trips (including 40 walk trips and 100 transit-access trips) during the PM peak hour. Pedestrian trips would primarily use Divisadero Street to access nearby commercial uses and distribute across the grid street network to access the surrounding residential neighborhoods in Pacific Heights and the Western Addition. LRDP-generated transit trips will begin as pedestrian trips traveling to the Muni and Golden Gate Transit stops on Divisadero Street, Sutter Street, Geary Boulevard, or California Street. Most pedestrians will travel along Divisadero Street to these transit stops including the proposed Geary BRT stop located at Geary Boulevard and Divisadero Street. The TEP does not propose any changes to transit stop locations within the study area. UCSF shuttle riders will walk to the stop located within the center of the campus site on Sutter Street between Divisadero and Scott streets. Existing pedestrian facilities adequately accommodate existing pedestrian volumes and overcrowding is not expected to occur due to the LRDP.

The immediate area surrounding the Mount Zion campus site includes robust pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops. The LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the LRDP's impact to pedestrian circulation and facilities at the Mount Zion campus site would be **less than significant**.

4.4.3 Mission Center

The LRDP does not propose changes to pedestrian amenities or introduce new conflicts to the pedestrian network surrounding the Mission Center campus site. Pedestrian access to the Mission Center campus site would remain similar to the existing configuration. Overall, the LRDP would not change pedestrian accessibility on the campus site frontage.

The LRDP would add approximately 100 pedestrian trips to the streets surrounding the Mission Center campus site (including 10 walk trips and 90 transit-access trips) during the AM peak hour and approximately 90 pedestrian trips (including 10 walk trips and 80 transit-access trips) during the PM peak hour. Pedestrian trips would primarily use 15th Street to access the surrounding street grid network and connect to residential and commercial neighborhoods in Mission and SoMa. LRDP-generated transit trips will begin as pedestrian trips traveling along 15th, 16th, Folsom, and Harrison streets to the nearest BART Station at 16th and Mission streets, and Muni bus routes on Mission Street, Folsom Street, 16th Street, or 11th Street.

The TEP would discontinue the 12 Folsom/Pacific and replace it with the 27 Bryant adjacent to the campus site. The TEP does not propose any change to transit stop locations within the study area. The LRDP proposes to relocate the current UCSF shuttle stop from the parking lot to the north side of 15th Street midblock. This relocated shuttle stop, and the UCSF shuttle riders, is not expected to hinder pedestrian mobility on 15th Street as the 15 foot wide sidewalks could handle the expected pedestrian traffic. Existing pedestrian facilities surrounding the Mission Center campus site adequately accommodate existing pedestrian volumes and overcrowding is not expected to occur due to the LRDP.

The immediate area surrounding the Mission Center campus site includes robust pedestrian facilities that provide access to nearby neighborhoods, commercial uses, and transit stops. The LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. Therefore, the LRDP's impact to pedestrian circulation and facilities at the Mission Center campus site would be **less than significant**.

4.5 BICYCLE IMPACTS

LRDP horizon bicycle trips were estimated based on existing travel surveys of UCSF staff and visitors as described in Chapter 3. Bicycle trips generated by the four UCSF campus sites would include trips to and from nearby residences and commercial uses. The sections below describes the estimated peak hour bicycle trips, proposed bicycle parking expansion, and potential conflicts to bicycle circulation associated with each campus site.

4.5.1 Parnassus Heights

As discussed in Chapter 2, the area around the Parnassus Heights campus site has a number of streets with bicycle lanes and streets designated as bicycle routes, including Parnassus Avenue, Kirkham Street, Sixth Avenue, and Seventh Avenue. In addition, there are several Class I bicycle paths and Class III routes in nearby Golden Gate Park. The Parnassus Heights campus site is within convenient bicycling distance of residential and commercial areas in the Sunset, Richmond, and Haight neighborhoods and many other neighborhoods to the east via the Golden Gate Park Panhandle and "Wiggle" bicycle route. Within the campus site, The *Parnassus Avenue Streetscape Plan* proposes to convert the current Class III bicycle lane to a Class II bicycle lane on steep portion of Parnassus Avenue, from Fifth Avenue to Third Avenue. The SF Bike Plan does not include any short- or long-term improvements in the study area.

The LRDP is expected to increase bicycle demand in the area by approximately 20 new trips during both the AM and PM peak hours. These trips would primarily occur on designated bicycle facilities in addition to other popular routes such as Irving and Carl streets, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated at the campus site through additional bicycle parking provided as a part of UCSF's TDM program. In the near-term, UCSF plans to add one new bicycle cage and 20 new bicycle racks at the Parnassus Heights Campus Site. This would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The expected increase in bicycle traffic would not represent a level that adversely affects bicycle facilities on the campus site, nor would the LRDP create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Thus, the LRDP's impact to bicycle facilities and circulation at the Parnassus Heights campus site would be considered ***less than significant***.

4.5.2 Mission Bay

As discussed in Chapter 2, the area around the Mission Bay campus site has a number of streets with bicycle lanes and streets designated as bicycle routes, including King Street, 16th Street, Mariposa Street, Fourth Street, and Seventh Street. The Mission Bay campus site is within convenient bicycling distance of residential and commercial areas in the Mission, Potrero Hill, Dogpatch, South of Market, and other downtown San Francisco neighborhoods. The LRDP does not propose changes to the bicycle circulation network surrounding the Mission Bay campus site. The Bike Plan includes a planned bikeway near/along Mission Creek between Fourth Street and Harrison Street, which is listed as a long-term project in the Bike Plan. In addition, an expansion of the Bay Area Bike Share program is currently being evaluated and could include a new station at Fourth Street near Rock Hall on the Mission Bay campus site. The proposed implementation of this expansion is the fall of 2014.

The LRDP is expected to increase bicycle demand in the area by 276 new trips during the AM peak hour and 214 new trips during the PM peak hour. These trips would primarily occur on the designated bicycle facilities connecting to the campus site, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated through the existing on-campus site parking supply in additional to new bicycle parking locations in future buildings and the potential Bay Area Bike Share station. In the near-term, UCSF plans to add one additional bicycle cage and 10 bicycle racks at the Mission Bay Campus Site. This would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The expected increase in bicycle traffic would not represent a level that adversely affects bicycle facilities on the campus site, nor would the LRDP create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Thus, the LRDP's impact to bicycle facilities and circulation at the Mission Bay campus site would be considered ***less than significant***.

4.5.2.1 LRDP Variant

Bicycle conditions associated with the LRDP Variant would be similar to those described above for the 2014 LRDP. Under the LRDP Variant, the Mission Bay campus site would generate slightly more bicycle trips than the 2014 LRDP. The increase in bicycle trips would be commensurate with the percentage increase in new peak hour vehicle trips generated by the 2014 LRDP plan for the Mission Bay campus site. The LRDP Variant does not propose changes to the bicycle environment compared to the LRDP. Similar to the 2014 LRDP, the expected increase in bicycle traffic would not represent a level that adversely affects bicycle facilities on the campus site, nor would the LRDP Variant create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Thus, the LRDP Variant's impact to bicycle facilities and circulation at the Mission Bay campus site would be considered ***less than significant***.

4.5.3 Mount Zion

As discussed in Chapter 2, the area around the Mount Zion campus site has several streets with bicycle lanes and streets designated as bicycle routes, including Post Street and Clay Street. The Mount Zion campus site is within convenient bicycling distance of residential and commercial areas in the Western Addition, Pacific Heights, and other downtown San Francisco neighborhoods. The LRDP does not propose changes to the bicycle circulation network surrounding the Mount Zion campus site. The SF Bike Plan does not include any short- or long-term improvements in the study area.

The LRDP is expected to slightly increase bicycle demand in the area, including approximately 20 new trips during the AM peak hour and 10 new trips during the PM peak hour. These trips would primarily occur on the designated bicycle facilities connecting to the campus site, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated through the existing on-campus site parking supply in addition to new bicycle parking provided as a part of UCSF's TDM program. In the near-term, UCSF plans to add eight additional bicycle racks at the Mount Zion Campus Site. This would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The expected increase in bicycle traffic would not represent a level that adversely affects bicycle facilities on the campus site, nor would the LRDP create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Thus, the LRDP's impact to bicycle facilities and circulation at the Mount Zion campus site would be considered ***less than significant***.

4.5.4 Mission Center

As discussed in Chapter 2, the area around the Mission Center campus site has a number of streets with bicycle lanes and streets designated as bicycle routes, including Folsom Street, Harrison Street, 17th Street, 14th Street, and 11th Street. The Mission Center campus site is within convenient bicycling distance of residential and shopping areas in the Mission, South of Market, and other downtown San Francisco neighborhoods. The LRDP does not propose changes to the bicycle circulation network surrounding the Mission Center campus site. The SF Bike Plan includes planned short-term improvements to add bicycle lanes from Ninth Street to 11th Street for Bicycle Route 25 on Howard Street.

As noted in Section 2.6.6, parcel delivery vehicles occasionally block the northbound bicycle lane on Folsom Street in front of the Mission Center campus site due to the lack of a curbside loading zone. Folsom Street is a popular bicycle route to Downtown San Francisco and bicyclists currently must pass the loading vehicles in the vehicle travel lane. While this is not considered a significant impact, the following Improvement Measure has been identified:

Improvement Measure IM-TR-2: Add Curbside Loading Zone on Folsom Street

UCSF could work with the SFMTA to add a curbside loading zone on Folsom Street, adjacent to the existing Mission Center building. A 50 foot loading zone would require the removal of approximately two parking spaces on Folsom Street. This loading zone will improve conditions for bicyclists whom may have their path currently blocked due to vehicles loading in the northbound bicycle lane.

The LRDP is expected to slightly increase bicycle demand in the area, including approximately 15 new trips during both the AM and PM peak hours. These trips would primarily occur on the designated bicycle facilities connecting to the campus site, which connect to surrounding neighborhoods through the San Francisco Bike Route network. The increased bicycle demand would be accommodated through the existing on-site bike parking supply in addition to any new bicycle parking provided as a part of UCSF's TDM program. In the near-term, UCSF plans to add four new bicycle racks at the Mission Center Campus Site. This would increase bicycle parking capacity and generally improve bicycle conditions on the campus site.

The LRDP proposes to reconfigure vehicle access to the campus site by designating the Harrison Street driveway to inbound only and the 15th Street driveway to outbound only. This reconfigured access, in addition to the increase in vehicle trips described in Section 4.2, would increase the number of conflicts between vehicles and bicycles using the Harrison Street Class II bicycle lanes. As noted Section 2.6.5, Harrison Street adjacent to the campus site is a popular bicycling route to and from Downtown San Francisco. While this is not considered a significant impact, the following Improvement Measure has been identified:

Improvement Measure IM-TR-3: Implement High-Visibility Bicycle Lanes on Harrison Street

UCSF could work with the SFMTA to implement measures to increase the visibility of southbound bicyclists for vehicles entering the Mission Center campus site from Harrison Street. This could include implement high-visibility green skip striping across the conflict zone in front of the Mission Center campus site driveway along Harrison Street.

The expected increase in bicycle traffic would not represent a level that adversely affects bicycle facilities in the area. With the proposed Improvement Measures in place, the LRDP would not create substantial conflicts between bicyclists and pedestrians, autos, or transit vehicles. Thus, the LRDP's impact to bicycle facilities and circulation at the Mission Center campus site would be considered ***less than significant***.

4.6 LOADING IMPACTS

4.6.1 Commercial Loading

The San Francisco Planning Code requires that land uses, such as medical offices and hospitals, provide off-street loading spaces according to the following schedule shown in **Table 4-15**.

TABLE 4-18: SAN FRANCISCO PLANNING CODE LOADING REQUIREMENTS

Use or Activity	Gross Floor Area of Structure or Use (sq. ft.)	Number of Off-Street Freight Loading Spaces Required
Retail stores, wholesaling, manufacturing, live/work units in newly constructed structures, and all other uses primarily engaged in the handling of goods.	0 - 10,000	0
	10,001 - 60,000	1
	60,001 - 100,000	2
	over 100,000	3 plus 1 for each additional 80,000 sq. ft.
Offices, hotels, apartments, live/work units not included above, and all other uses not included above	0 - 100,000	0
	100,001 - 200,000	1
	200,001 - 500,000	2
	over 500,000	3 plus 1 for each additional 400,000 sq. ft.

Source: San Francisco Planning Code Section 152.1, Fehr & Peers, 2014

Loading supply was estimated based on the criteria above. **Table 4-19** shows the existing and future loading requirements from Table 152 of the San Francisco Planning Code Article 1.5, Section 150 for the four UCSF campus sites. As shown, the existing and proposed loading supply exceeds the code at each of the campus sites.

While **Table 4-19** shows that the existing loading supply does not meet the LRDP horizon year required loading supply, it should be noted that the UCSF campus sites are unique, and their loading demands, and thus supply should be monitored over time to ensure that an appropriate amount of supply is provided at each campus site.

The demand for loading spaces through the LRDP horizon year was described in Chapter 3, and was calculated based on surveys from the Parnassus Heights campus site and methods described in the SF Guidelines. It is expected that the estimated LRDP supply should be adequate for the estimated demand, however, as mentioned above, the campus sites are unique and should be monitored over time. Commercial loading conditions for the 2014 LRDP and LRDP Variant is considered a ***less-than-significant impact*** if UCSF continues to monitor loading operations and provide appropriate supply.

TABLE 4-19: EXISTING AND FUTURE LOADING REQUIREMENTS – ALL CAMPUSES

Campus	Loading Spaces (Truck/ Freight)	Building Size (Goods Handling)[1]	Building Size (Other)[1]	Off-Street Loading Requirements			Total Required Minus Existing Supply
				Goods Handling	Other	Total	
Existing							
Parnassus Heights	11	36,700	3,265,100	1	10	11	0
Mission Bay	8	46,825	1,879,875	1	7	8	0
Mount Zion	3	4,325	771,875	0	4	4	-1
Mission Center	2	2,025	288,675	0	2	2	0
Subtotal	24	89,875	6,205,525	2	23	25	-1
Future							
Parnassus Heights	11	35,230	3,440,247	1	11	12	-1
Mission Bay	8	64,228	4,576,152	2	14	16	-8
Mount Zion	3	4,325	944,424	0	5	5	-2
Mission Center	2	5,775	384,925	0	2	2	0
Subtotal	24	***109,558***	***9,345,748***	***3***	***32***	***35***	***-11***

Notes:

1. Assumes 25% of Campus Community is considered "Goods Handling" per San Francisco Planning Code Section 152.1. Remaining GSF uses "Other" criteria.

Source: UCSF, Fehr & Peers, 2014

4.6.2 Passenger Loading/Unloading

This section describes the LRDP passenger loading impacts. As presented in Chapter 3, the LRDP would add approximately 310 and 250 total passenger loading trips during the AM and PM peak hours, respectively at the four campus sites. This represents an approximate growth of 50-percent during the peak hours. **Figure 4-5** through **Figure 4-8** show the LRDP proposed parking and loading locations.

The SF Guidelines methodology in which peak hour loading arrivals is converted into passenger car equivalents, then compared to supply was used in order to determine whether additional loading areas were recommended at each campus site with the LRDP in place. The analysis, as summarized in **Table 4-20** relies on passenger loading demand at each campus site from **Table 3-34** and the existing passenger loading supply at each campus site, as presented in Chapter 2.

Figure 4-5

Proposed Parking & Loading Plan- Parnassus Heights

Figure 4-6

Proposed Parking and Loading Plan-Mission Bay

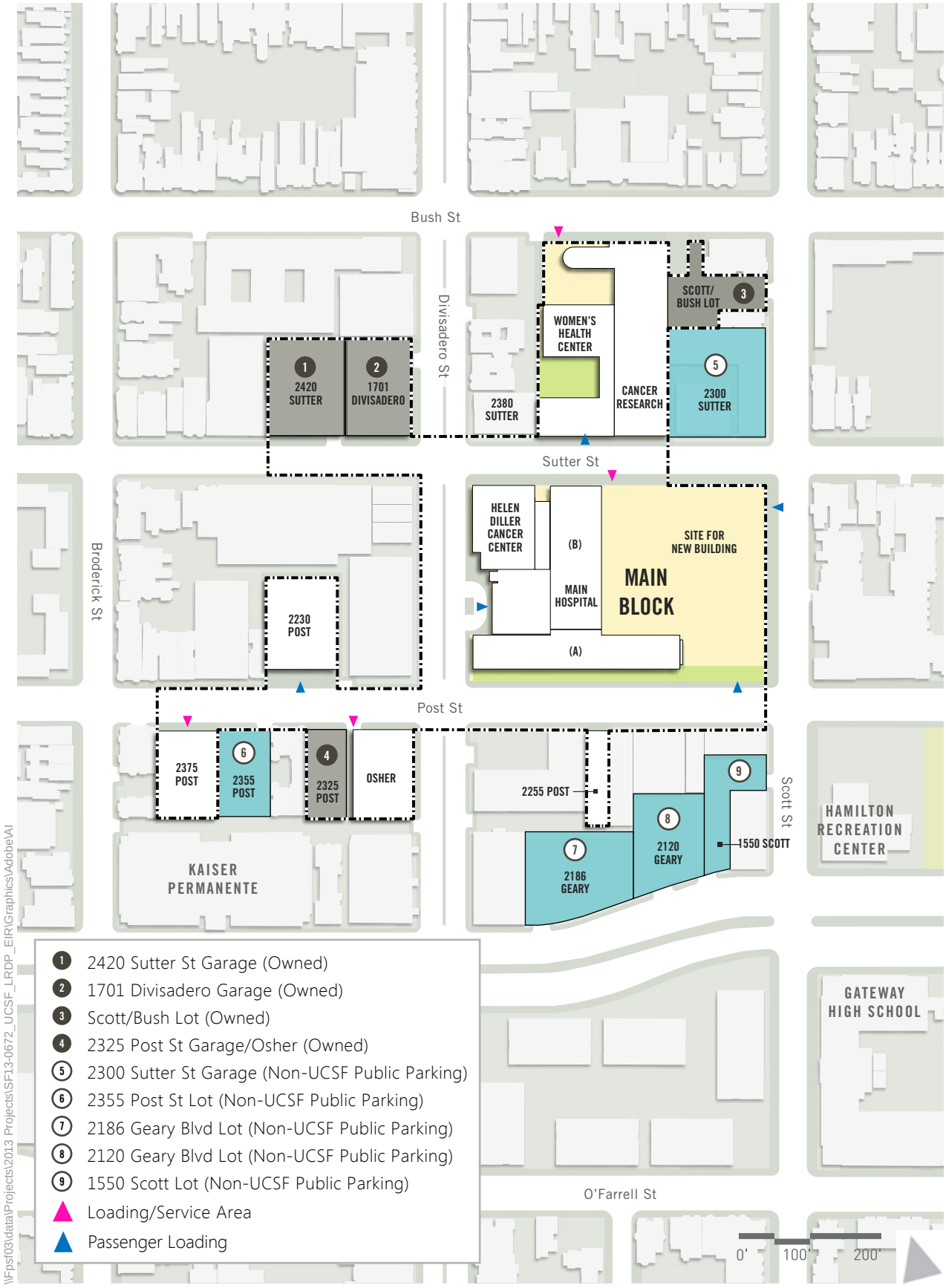


Figure 4-7

Proposed Parking & Loading Plan- Mount Zion

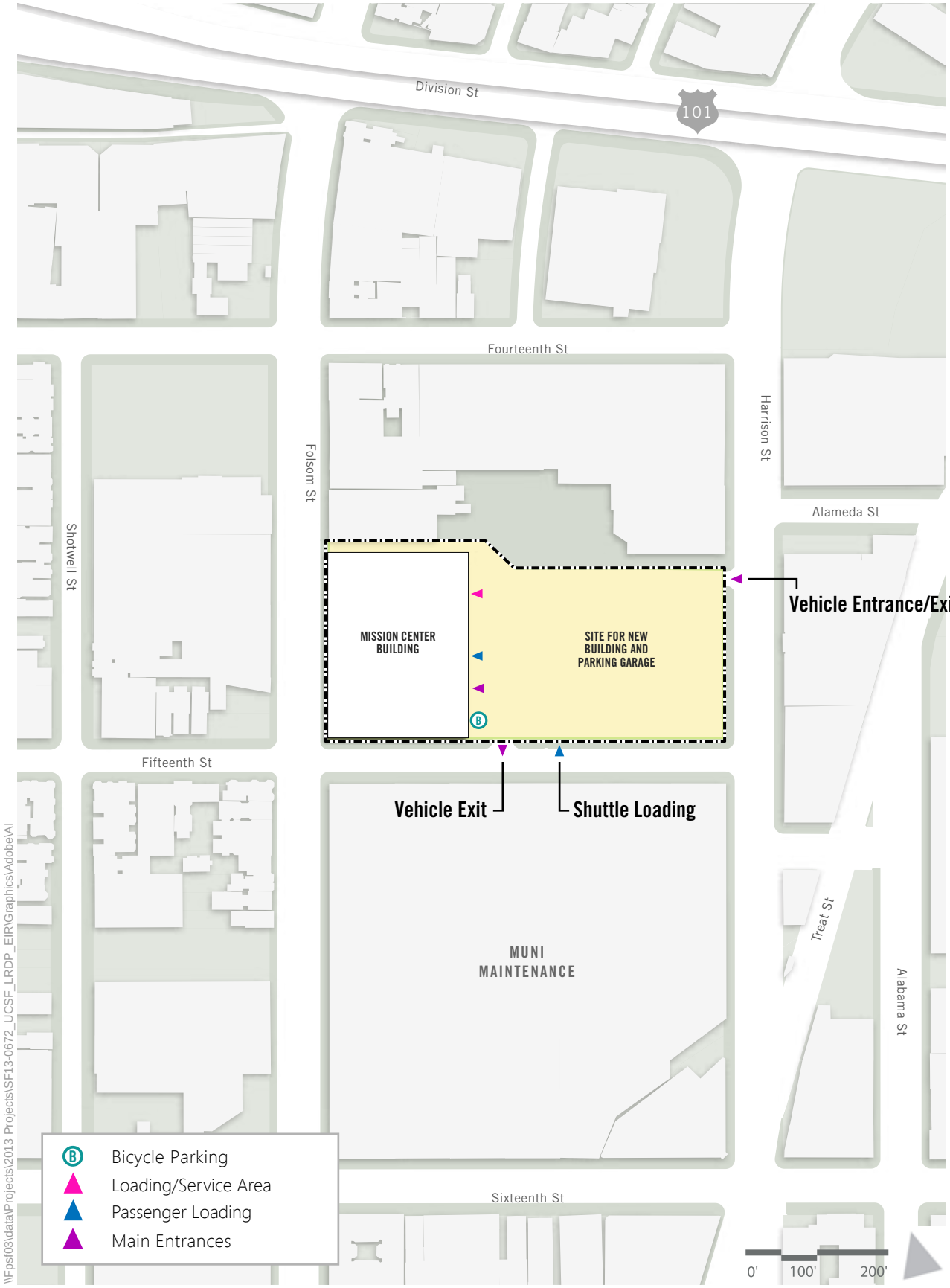


Figure 4-8

Proposed Parking & Loading Plan-
Mission Center

TABLE 4-20: ESTIMATED PASSENGER LOADING ZONE LENGTH

Campus Site	Existing Supply (feet)	Existing Demand[1] (feet)		LRDP Horizon Year Demand$_1$ (feet)		Delta (feet)		Additional Required Horizon Year Loading Supply	
		AM	PM	AM	PM	AM	PM	AM	PM
Parnassus Heights	340	460	416	485	439	**25**	**23**	***145***	***100***
Mission Bay	400	110	94	405	348	**295**	**254**	***5***	***0***[2]
Mount Zion	265	193	93	259	125	**66**	**33**	***0***	***0***
Mission Center	25	8	6	11	11	**4**	**5**	***0***	***0***
Total		*770*	*609*	*1160*	*923*	**390**	**315**	***150***	***100***

Notes:

1. Demand presented in feet based on methodology presented in *SF Guidelines*, Vehicular Space Needs for Hotel Guest Loading/Unloading Activities, Appendix D and observations of existing passenger loading activity at the campus sites.
2. Negative values presented as zero.

Source: Fehr & Peers, 2014

4.6.2.1 Parnassus Heights

As shown in **Table 4-20**, there is an existing deficit of passenger loading supply to accommodate the existing peak hour demand at the Parnassus Heights campus site. This finding is supported by observations made of very active loading areas that on occasion generate queues of vehicles awaiting entry. It should be noted that this deficit appears to be exacerbated during peak times by some vehicles not adhering to all peak hour parking and loading regulations. As part of the LRDP, the Streetscape Plan, which seeks to alleviate parking and loading congestion among other goals will be implemented. In addition to the *Parnassus Avenue Streetscape Plan*, as part of the New Hospital Addition, a new passenger loading loop, larger than the current Moffitt Loop and sized to compensate for the existing deficit of passenger loading supply, will be designed in coordination with UCSF Transportation Services. The loop will be provided off of Parnassus Avenue in front of the New Hospital Addition.

The combination of the *Parnassus Avenue Streetscape Plan* and new passenger loading loop at the New Hospital Addition will be sufficient to accommodate the estimated LRDP demand, therefore the LRDP's impact to passenger loading is considered ***less than significant***.

4.6.2.2 Mission Bay

Table 4-20 shows that the existing passenger loading supply is sufficient for the estimated LRDP loading needs during the PM peak hour and in need of an additional five feet to be sufficient for the AM peak hour. As part of the LRDP, additional passenger loading supply will be implemented in the form of driveway loops in front of the Women's, Cancer, and Children's Hospital on the south side of campus, as shown on **Figure 4-6**. As shown on the figure, visitors and patrons may access the new northern passenger loading loop from Sixteenth Street and the new southern passenger loading loop from Mariposa Street. As described in Chapter 2, existing loading areas provide a sufficient amount of space for passenger and vehicle loading.

The combination of the new passenger loading loops at the Women's, Cancer, and Children's Hospital and adequate existing supply will be sufficient to accommodate the estimated LRDP demand, therefore the LRDP's impact to passenger loading is considered ***less than significant***.

4.6.2.2.1 LRDP Variant

Passenger loading conditions associated with the LRDP Variant would be similar to those described above for the 2014 LRDP. Under the LRDP Variant, the Mission Bay campus site would generate slightly more passenger loading trips than the 2014 LRDP. The increase in passenger loading trips would be commensurate with the percentage increase in new peak hour vehicle trips generated by the 2014 LRDP plan for the Mission Bay campus site. If the LRDP Variant at the Mission Bay campus site moves forward to the design phase, passenger loading will be designed to accommodate the loading demand in a similar manner to other zones on the Mission Bay campus site. This passenger loading zone would be subject to review and coordination between the UCSF Transportation Services and the SFMTA. Therefore the LRDP Variant's impact to passenger loading is considered ***less than significant***.

4.6.2.3 Mount Zion

Table 4-20 shows that the existing passenger loading supply is sufficient for the estimated LRDP loading needs during both the AM and PM peak hours. This is despite an expected increase in peak demand of approximately 60 feet during the AM peak hour and 30 feet during the PM peak hour. As noted in the Section 2.5.6, the loading area fronting the Scott Street facility appears to currently be at capacity, as multiple passenger vehicles were seen occupying metered parking spots. While this is not considered a significant impact, the following Improvement Measure has been identified:

> **Improvement Measure IM-TR-4: Add Passenger Loading to Scott Street**
>
> UCSF could work with the SFMTA to add a curbside passenger loading zone on Scott Street. An additional 50 foot loading zone would require the removal of approximately three metered parking spaces on Scott Street. This loading zone will reduce overflow for passenger loading on Scott Street.

As development of the LRDP proceeds at the campus site, UCSF may work with the SFMTA to further increase the amount of passenger loading supply by converting existing on-street parking meter spaces to passenger loading supply based on need and conditions at the time of development. The existing supply will be sufficient to accommodate the estimated LRDP demand, therefore the LRDP's impact to passenger loading is considered ***less than significant***.

4.6.2.4 Mission Center

Table 4-20 shows that the existing passenger loading supply is sufficient for the estimated LRDP loading needs during both the AM and PM peak hours. This is despite a marginal expected increase in peak demand of approximately five feet during the AM and PM peak hours.

The existing supply will be sufficient to accommodate the estimated LRDP demand, therefore the LRDP's impact to passenger loading is considered ***less than significant***.

4.7 PARKING ANALYSIS

The 2014 LRDP parking demand was estimated based on information about existing parking utilization and travel surveys of UCSF staff and visitors as described in Chapter 3. The sections below describe the changes in parking supply and parking utilization for each campus site under the 2014 LRDP buildout.

4.7.1 Changes in Parking Supply

The 2014 LRDP calls for additional parking to be provided on campus sites at Parnassus Heights, Mission Bay, Mount Zion, and Mission Center, as warranted by the proposed development. The precise quantity of any new parking would be determined as projects are proposed. The following list describes the currently proposed changes in parking supply; a quantitative summary is presented in **Table 4-21**. As shown in the table, the number of parking spaces owned by UCSF at the four campus sites would increase by approximately 4,150 spaces (about 83 percent) by year 2040. The majority of the new parking spaces (3,800) would be provided at the Mission Bay campus site.

Parnassus Heights

- Upon demolition of the Laboratory of Radiobiology building, the remaining surface pad may be improved, then used for approximately 30 contractor-only spaces sometime between 2014 and 2019.
- Upon demolition of the MR 4 building, the remaining lot may be graded and improved and used for approximately 30 contractor-only spaces sometime between 2014 and 2019.
- About 20 parking spaces at the Surge surface lot would be converted from permit holder to contractor-only parking sometime between 2014 and 2019.
- Upon demolition of the Koret Vision building, the remaining surface pad may be improved, then used for approximately 30 contractor-only spaces sometime between 2031 and 2035.

Mission Bay

- The 621-space 10-level garage structure at Owens Street, south of 16th Street, would open for service to the public in February 2015, as Phase One Medical Center becomes operational.
- A new 429-space surface parking lot adjacent to the new Owens Street garage would also be built, which would also open in conjunction with the Phase One Medical Center.
- Approximately 160 existing surface parking spaces located in the North Campus would be eliminated as the existing parking lots are replaced by new buildings.
- A new parking garage would be built on Block 18B in the North Campus containing approximately 1,540 parking spaces. The ground floor of the garage would be sized to accommodate about 60 UCSF shuttle buses.
- About 500 new spaces would be provided within Blocks 33 and 34, east of Third Street.

- An expansion of the Owens Street garage would be constructed as part of the Phase Two Medical Center, sometime after 2035, to replace the 429-space Phase One surface lot that would be replaced by new hospital buildings, and to accommodate the additional expected demand. The new structure would be built to the south of the Phase One garage and is planned to be the same size and have the same capacity of the Phase One garage of 621 independently accessible spaces. However, for purposes of a conservative analysis, it is assumed that up to 1,300 spaces could be developed in Phase Two, to account for the potential for valet parking in both the existing and proposed structures.

Mount Zion

- A 185-space garage would be constructed as part of a new clinical and/or research building to be located on Scott Street, on the east side of the main block. The parking could be provided in the building, underground, or off-site.

Mission Center

- A new UCSF building would be constructed at the existing surface parking lot to the east of the existing Mission Center building. A five-story, approximately 96,000-gsf parking structure would also be built between the existing and new buildings, with up to 294 parking spaces.

TABLE 4-21: EXISTING AND FUTURE UCSF-OWNED PARKING SUPPLY BY CAMPUS SITE

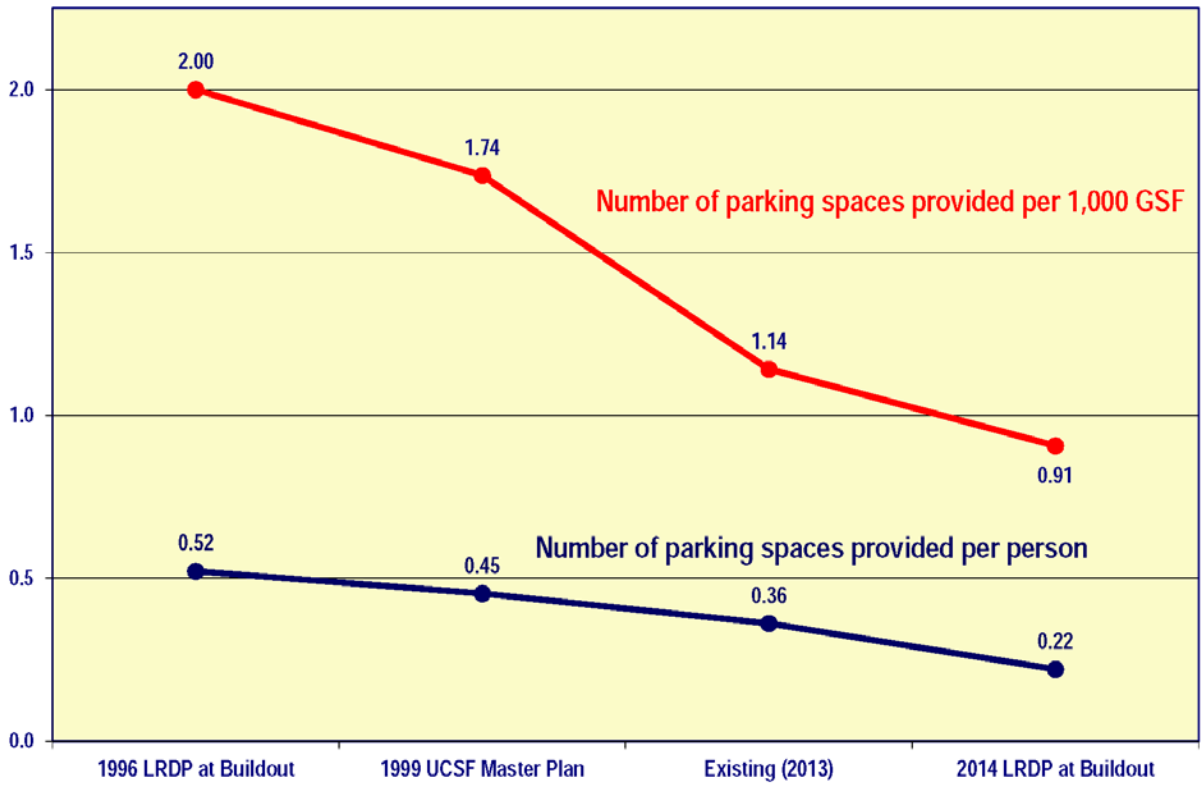
UCSF Parking Facilities	Existing Spaces (2012/2013)	New Spaces Proposed by 2015	Total Spaces by 2015	New Spaces Proposed between 2015 & 2040	Total Spaces by 2040
Parnassus Heights					
Millberry Union Garage	1,075	--	1,075	--	1,075
Med. Building 1 (ACC) Garage	1,007	--	1,007	--	1,007
Surface Spaces	646	--	646	90	736
Total Parnassus Heights	**2,728**	**--**	**2,728**	**90**	**2,818**
Mission Bay					
Community Center (1675 Owens St) Garage	593	--	593	--	593
1630 Third Street Garage	732	--	732	--	732
Surface Spaces North Campus	254	--	254	-161	93
Surface Spaces South Campus	--	429	429	-429	--
Owens Street Garage - Phase One	--	621	621	--	621
Owens Street Garage - Phase Two	--	--	--	1,300	1,300
Block 18 Garage	--	--	--	1,540	1,540
Blocks 33 and 34 Garage	--	--	--	500	500
Total Mission Bay	**1,579**	**1,050**	**2,629**	**2,750**	**5,379**
Mount Zion					
2420 Sutter Street Garage	228	--	228	--	228
1701 Divisadero Garage	156	--	156	--	156
2325 Post Street Garage	49	--	49	--	49
Surface Spaces	20	--	20	--	20
Scott Street Building Garage	--	--	--	185	185
Total Mount Zion	**453**	**--**	**453**	**185**	**638**
Mission Center					
Surface Spaces	224	--	224	-224	--
Mission Center Garage	--	--	--	294	294
Total Mission Center	**224**	**--**	**224**	**70**	**294**
Total Four Campus Sites	**4,984**	**1,050**	**6,084**	**3,095**	**9,129**

Source: UCSF, Adavant Consulting, 2014

As shown in **Table 4-21**, over 90 percent of the new parking spaces (3,800) to be provided as part of the 2014 LRDP by 2040 would be built at the Mission Bay campus site. This increase is directly related to the expected growth in staff, patients and visitors that would occur at that site. As previously described in **Table 3-1**, the weekday daily population through the LRDP horizon year/2040 at the Mission Bay campus

site would grow to approximately 22,840 people, over four times the current value. As indicated in **Table 4-21**, parking supply at the Mission Bay campus site is expected to grow at a lower rate than population, with overall future parking supply representing about 3.4 times the existing number of spaces currently provided on campus.

As shown in **Inset 4**, UCSF currently provides an average of 0.36 parking spaces per person or 1.14 parking spaces per 1,000 gross square feet of development. These values represent a reduction from previous plans such as the 1996 LRDP and the 1999 Mission Bay Campus Master Plan which called for higher parking supply ratios, based on the information about travel demand patterns that were available at the time. As shown in the figure, under the 2014 LRDP. UCSF would provide an average of 0.22 parking spaces per person or 0.91 parking spaces per 1,000 gross square feet of development, a 20 to 38 percent reduction over current values. These ratios are consistent with those presented in the Mission Bay South Design for Development plan, which calls for an average maximum parking supply ratio of approximately 1.3 spaces per 1,000 gross square feet of Commercial Industrial (including life sciences and biotechnology research) development.



Inset 4: UCSF Mission Bay Campus Site Average Parking Supply Ratios by Scenario

4.7.2 Year 2015 Parking Utilization at Mission Bay

Table 4-22 summarizes the existing and year 2015 off-street parking supply and occupancy at the UCSF parking facilities at the Mission Bay campus site.

TABLE 4-22: EXISTING AND 2015 OFF-STREET PARKING SUPPLY AND OCCUPANCY AT MISSION BAY

	Existing		LRDP Peak Parking Demand Growth (spaces) [3]	2015	
	Supply (spaces) [1]	Peak Parking Utilization [2]		Supply (spaces) [1]	Peak Parking Utilization [2]
Mission Bay	1,579	85%	1,059	2,629	91%

Notes:

1. Off-street parking spaces provided at UCSF garages and surface lots in Mission Bay.
2. Mid-morning to early afternoon, see **Table 2-18**.
3. Staff, patients and visitor demand.

Source: Adavant Consulting, 2014

As shown in **Table 4-22**, with the opening of Phase One Medical Center and the completion of the Mission Hall Building by 2015, the future parking utilization at the UCSF parking facilities would be below but close to of its maximum capacity, with a potential campus-wide surplus of about 230 spaces.

4.7.3 Year 2040 Parking Utilization

As described in the previous sections, the available on-street parking is well occupied at the four campus sites, and has therefore not been considered as a resource for the future parking utilization analysis, which has focused instead on the availability of off-street parking.

Table 4-23 summarizes the existing and future off-street parking supply and occupancy at the four major campus sites by 2040. The parking supply shown in the table represents the number of spaces managed by UCSF at each site, except for Mount Zion, where six privately owned public parking garages and surface lots nearby have also been added, as they have traditionally served the campus site's parking needs.

TABLE 4-23: EXISTING (20125/13) AND YEAR 2040 (FUTURE 2035/2040) OFF-STREET PARKING SUPPLY AND OCCUPANCY AT THE FOUR MAJOR CAMPUS SITES

Campus Site	Existing		LRDP Peak Parking Demand Growth (spaces) [3]	2040 [6]	
	Supply (spaces) [1]	Peak Parking Utilization [2]		Supply (spaces) [1]	Peak Parking Utilization [2]
Parnassus Heights	2,728	86%	225	2,818	99% [5]
Mission Bay	1,579	85%	4,471	5,379	108%
Mount Zion [4]	1,159	88%	309	1,344	99%
Mission Center	224	86%	206	294	135%
Total Four Campus Sites	**5,690**	**86%**	**5,211**	**9,835**	**104%**

Notes:

1. Off-street parking spaces provided at UCSF-owned facilities, except for the Mount Zion campus site as noted.
2. Mid-morning to early afternoon.
3. Staff, patients and visitor demand.
4. The parking supply and occupancy at the Mount Zion campus site includes approximately 700 spaces provided at six nearby public parking facilities, as shown in **Table 2-26**.
5. Reflects about 200 UCSF staff and faculty daily vehicles currently parking at the Kezar surface lot.
6. The data shown in this table reflects the future peak parking utilization for the LRDP horizon year (2035) for the Parnassus Heights, Mount Zion, and Mission Center campus sites and year 2040 for the Mission Bay campus site.

Source: Adavant Consulting, 2014

As shown in **Table 4-23** the future parking utilization at the Parnassus and Mount Zion campus sites would be at their physical capacity (99 percent utilization), while the utilization at the UCSF facilities at the Mission Bay and Mission Center campus sites would be above their maximum proposed physical capacity. The expected future parking demand (staff, patients and visitors, as applicable) at the Mission Bay and Mission Center campus sites would be approximately 430 and 100 spaces, above the future planned supply, respectively.

4.7.4 Parking Impacts

The parking demand at the Mission Bay and Mission Center campus sites by 2040 would result in a potential shortfall in parking supply of about 430 and 100 spaces, respectively. However, as part of the implementation of the 2014 LRDP or LRDP Variant at the Mission Bay campus site, UCSF would monitor parking demand at each phase of development and adjust parking supply as demand warrants. Should the demand for parking exceed on-site supply, priority for on-site parking where clinical activities occur would be given to patients, visitors and essential health care providers, and if necessary, UCSF could look to secure off-site parking to satisfy that demand. That additional parking supply could be provided on campus sites, if available, or elsewhere in the vicinity. All four campus sites are well served by the UCSF shuttle system and public transit. As the proposed 2014 LRDP projects develop, UCSF would continue to implement and improve its Travel Demand Management (TDM) program to educate faculty, staff, and students about alternative transportation and transit options in order to reduce auto usage and parking demand. Thus, the parking impacts under LRDP build-out would be ***less than significant***.

4.8 CONSTRUCTION IMPACTS

Implementation of the LRDP would occur using a coordinated, phased construction schedule that would preserve UCSF's operations during the construction period. The construction of LRDP projects will occur in phases beginning with the demolition of the Laboratory of Radiobiology at the Parnassus Heights campus site through to the construction of Phase Two Medical Center at the Mission Bay campus site.

The construction impact assessment for each campus site presented below is based on currently available information from UCSF, and professional knowledge of typical construction practices citywide. Prior to construction, as part of the construction application phase, UCSF and their construction contractor(s) would meet with the Department of Public Works ("DPW") and SFMTA staff to develop and review truck routing plans for demolition, disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles. For any work in the public right-of-way, the construction contractor would be required to meet the City of San Francisco's Regulations for Working in San Francisco Streets, (the Blue Book), including those regulations regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required.[14] Prior to construction, the project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit operations.

The sections below describe the estimated LRDP construction impacts by campus site.

4.8.1 Parnassus Heights

Construction of the LRDP projects at the Parnassus Heights campus site would occur in phases expected to begin in 2014 through the LRDP horizon year in 2035. The implementation of cushioning actions and demolition of the Laboratory of Radiobiology would begin in 2014. Much of the other demolition projects would occur between 2015 and 2017, then again between 2025 and 2034. The construction of additional housing on the Fifth Avenue and Parnassus Avenue site is expected to begin in 2017 and the construction of new housing on the Proctor site is anticipated to begin in 2031.

[14] The SFMTA Blue Book, 7th Edition, is available online through SFMTA (www.sfmta.com)

TABLE 4-24: PARNASSUS HEIGHTS PROPOSED CONSTRUCTION DATA			
Construction Project	**Construction Characteristics**		
	Gross Square Feet	**Housing Units**	**Housing Square Feet**
Projects Complete by 2020 (Construction 2015 through 2019)			
Demolish Medical Research 4 Building	12,100	--	--
Renovate/Reuse UC Hall- Phase One	--	105	74,000
Demolish Laboratory of Radiobiology	18,200	--	--
Build Housing on Fifth and Parnassus Site	--	45	48,400
Demolish the Woods Building	3,900	--	--
Demolish the Surge Building	11,400	--	--
Parnassus Avenue Streetscape Improvements - Phase One	--	--	--
Projects Complete by 2025 (Construction 2020 through 2024)			
Parnassus Avenue Streetscape Improvements - Phase Two	--	--	--
Projects Complete by 2031 (Construction 2025 through 2030)			
New Hospital Addition	308,000	--	--
Demolish the LPPI Building and Three Support Buildings	107,200	--	--
Projects Complete by 2036 (Construction 2031 through 2035)			
Demolish the Proctor Building	9,900	--	--
Build Housing on Proctor Site	--	32	30,400
Renovate Moffitt Hospital	--	--	--
Demolish the Koret Vision Research Building	--	--	43,100
Convert Millberry Union Towers to Housing	--	83	46,600
Renovate/Reuse UC Hall Phase Two	--	64	68,300
Demolish the Environmental Health and Safety Building	6,200	--	--

Source: UCSF, 2014

As discussed in Chapter 3 most construction projects will contribute 10 or less truck trips per workday. In some cases, a project will contribute 10 to 20 daily truck trips on average.

Some construction projects will result in a parking loss due to construction staging and/or restrictions and limit pedestrian access through the duration of construction; however project construction is temporary and will not result in a long term impact. The UC Hall renovation and construction of housing on Fifth and Parnassus avenues will require disrupting connectivity on the south side of Parnassus Avenue; therefore pedestrians will be directed to the north side of Parnassus Avenue to avoid conflicts with construction

work. The rest of the LRDP projects that require construction activities at the Parnassus Heights campus site will take place within the campus site and should not disrupt connectivity along Parnassus Avenue or other campus site perimeter streets.

It is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions, as impacts on local intersections or the transit network would be temporary in nature. Construction workers who drive to the construction sites and potential temporary parking restrictions along building frontages on Parnassus Avenue would cause a temporary increase in parking demand. Construction workers would park within nearby off-street parking facilities that currently have availability during the day (e.g., Kezar Stadium Parking Lot) or in satellite parking lots in which UCSF would temporary parking spaces. Additionally, the demolition of buildings accessed via Koret Way will increase the amount of contractor spaces at the campus site, as the building pads could be used as surface parking spaces.

UCSF would coordinate with various City departments such as SFMTA and DPW through the Transportation Advisory Staff Committee (TASC) to develop coordinated plans that would address construction-related vehicle routing and pedestrian movements adjacent to the construction area for the duration of construction. While construction of individual LRDP elements would by definition be temporary, the LRDP would require consideration of the effect of construction activities on existing and future transportation facilities (e.g. sidewalks, Muni service and facilities, roadways, bicycle routes, etc.) and existing and future adjacent land uses. Therefore, due to the need for on-going coordination and monitoring, the LRDP construction-related transportation impacts would be considered ***significant***.

Mitigation Measure TR-1a: Construction Coordination and Monitoring Measures

Traffic Control Plan for Construction – In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the Parnassus Heights campus site, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (e.g. Parnassus Avenue) and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the LRDP projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic.

In the event that the construction timeframes of the major phases and other development projects adjacent to the Parnassus Heights campus site overlap, UCSF should coordinate with City Agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures.

Reduce SOV Mode Share for Construction Workers – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the campus sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – In order to minimize construction impacts on access for nearby residences, institutions, and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

Mitigation Measure TR-1a would reduce the LRDP's ***significant impacts*** related to construction-related transportation impacts to ***less-than-significant*** levels.

4.8.2 Mission Bay

Construction of the LRDP projects would occur in phases expected to begin in 2016 with development of Block 15 and the Surcharging Project on Block 14 and end with the construction of Phase Two Medical Center at Mission Bay beyond 2035.

TABLE 4-25: MISSION BAY PROPOSED CONSTRUCTION DATA

Construction Project	Construction Characteristics		
	Gross Square Feet	Housing Units	Housing Square Feet
Projects Complete in 2015			
Mission Hall (Block 25A)	264,800	--	--
Phase One Medical Center	869,000	--	--
Projects Complete by 2020 (Construction 2015 through 2019)			
Block 15 housing	418,200	523	398,700
Block 33	275,000	--	--
Block 33/34 Parking Garage	167,500	--	--
Cancer Outpatient	124,500	--	--
Surcharging - Blocks 15 & 18	42,700	--	--
Projects Complete by 2025 (Construction 2020 through 2024)			
Block 23A	232,200	--	--
Block 34	225,000	--	--
Block 18 Parking Garage-Phase One	271,000	--	--
Projects Complete by 2031 (Construction 2025 through 2030)			
Block 16	289,000	--	--
Block 25B	323,000	--	--
Projects Complete by 2036 (Construction 2031 through 2035)			
Block 18	193,000	--	--
Block 18 Parking Garage-Phase Two	271,000	--	--
Phase Two Medical Center	793,500	--	--

Source: UCSF, 2014

As discussed in Chapter 3, most construction projects will generate no more than 40 daily truck trips on average. The peak construction trip generation will be approximately 90 truck trips on average per workday during the construction of Phase Two Medical Center at Mission Bay. Most truck trips will enter/exit the campus site using Mission Bay Boulevard North, Nelson Rising Lane, Owens Street, and 16th Street, Fourth Street, and generally, construction projects will not result in a parking, vehicular (including transit), or pedestrian impact as locations are internal to the campus site and alternative connectivity routes will be provided.

It is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions, as impacts on local intersections or the transit network would be temporary in nature. Construction workers who drive to the site and potential temporary parking restrictions along frontages where construction and/or staging are occurring would cause a temporary increase in parking demand. Construction workers would park within nearby off-street parking facilities that currently have availability during the day (e.g., Third Street Garage, Owens Street Garage) or in temporary surface parking lots within undeveloped blocks.

It is anticipated that construction activity of the LRDP projects may overlap with the construction activity of other proposed and/or planned projects in the area, notably the proposed Golden State Warriors basketball arena north of 16th Street and east of Third Street (construction estimated to begin in 2016 for a 2018-2019 season opening) and the proposed mixed-used residential and office development at Seawall Lot 337, north of Mission Rock Street and east of Third Street (construction estimated to begin in 2016 and continue in phases through 2021).

The construction activities associated with these nearby projects would affect access, traffic operations and pedestrian movements on Third Street. It is anticipated that the construction manager for each project would be required to work with the various departments of the City to develop a detailed and coordinated plan that would address construction vehicle routing, traffic control and pedestrian movement adjacent to the construction area for the duration of the overlap in construction activity.

UCSF would coordinate with various City departments such as SFMTA and DPW through the TASC to develop coordinated plans that would address construction-related vehicle routing and pedestrian movements adjacent to the construction area for the duration of construction. While construction of individual LRDP elements would by definition be temporary, the LRDP would require consideration of the effect of construction activities on existing and future transportation facilities (e.g. sidewalks, Muni service and facilities, roadways, bicycle routes, etc.) and existing and future adjacent land uses. Therefore, due to the need for on-going coordination and monitoring, the LRDP construction-related transportation impacts would be considered ***significant***.

Mitigation Measure TR-1b: Construction Coordination and Monitoring Measures

Traffic Control Plan for Construction – In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the Mission Bay campus site, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the LRDP projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic.

In the event that the construction timeframes of the major phases and other development projects adjacent to the Mission Bay campus site overlap, such as the adjacent proposed development at Mission Bay Blocks 29-32, UCSF should coordinate with City Agencies through

the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures.

Reduce SOV Mode Share for Construction Workers – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the campus sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – In order to minimize construction impacts on access for nearby residences, institutions, and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

Mitigation Measure TR-1b would reduce the LRDP's ***significant impacts*** related to construction-related transportation impacts to ***less-than-significant*** levels.

4.8.2.1 LRDP Variant

Construction conditions associated with the LRDP Variant would be similar to those described above for the 2014 LRDP. UCSF would coordinate with various City departments such as SFMTA and DPW through the TASC to develop coordinated plans that would address construction-related vehicle routing and pedestrian movements adjacent to the construction area for the duration of construction. While construction of individual LRDP Variant elements would by definition be temporary, the LRDP Variant would require consideration of the effect of construction activities on existing and future transportation facilities (e.g. sidewalks, Muni service and facilities, roadways, bicycle routes, etc.) and existing and future adjacent land uses. Therefore, due to the need for on-going coordination and monitoring, the LRDP Variant construction-related transportation impacts would be considered ***significant***.

Mitigation Measure TR-1c: Construction Coordination and Monitoring Measures

Traffic Control Plan for Construction – In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the Mission Bay campus site, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the LRDP projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic.

In the event that the construction timeframes of the major phases and other development projects adjacent to the Mission Bay campus site overlap, such as the adjacent proposed development at Mission Bay Blocks 29-32, UCSF should coordinate with City Agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures.

Reduce SOV Mode Share for Construction Workers – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the campus sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – In order to minimize construction impacts on access for nearby residences, institutions, and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

Mitigation Measure TR-1c would reduce the LRDP Variant's ***significant impacts*** related to construction-related transportation impacts to ***less-than-significant*** levels.

4.8.3 Mount Zion

Construction of the LRDP projects would occur in phases expected to begin in 2015 with the renovation and reuse of the existing hospital.

TABLE 4-26: MOUNT ZION PROPOSED CONSTRUCTION DATA

Construction Project	Construction Characteristics		
	Gross Square Feet	Housing Units	Housing Square Feet
Projects Complete by 2020 (Construction 2015 through 2019)			
Main Hospital - Renovation	--	--	--
Demo 3 buildings	85,000	--	--
Construct additional parking	78,000		
New office/research building	257,000	--	--
Demolish or retrofit the "N" building (2255 Post Street)	7,500		

Source: UCSF, 2014

As discussed in Chapter 3, construction projects will generate no more than 30 daily truck trips on average. Most truck trips will enter/exit the campus site using Sutter Street, Post Street, and Scott Street.

Some construction projects will result in a parking loss due to construction staging and/or restrictions and limit pedestrian access through the duration of construction; however project construction is temporary and will not result in a long term impact. The demolition of the Hellman, Harold Brunn Institute, and the Dialysis Center buildings, construction of a new medical office and/or research building and additional parking, and renovation/reuse of the existing hospital on the block north of Post Street and west of Scott Street require disrupting connectivity on the south side of Sutter Street, the north side of Post Street, and/or the west side of Scott Street; therefore pedestrians will be directed to the north side of Sutter Street, the south side of Post Street, and/or the east side of Scott Street to avoid conflicts with construction work. Construction work that affects the frontage of Post Street may require that a portion of the existing Class II bicycle lane between Scott and Divisadero streets be converted temporarily to a Class III bicycle route for the duration of construction activities in the vicinity.

It is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions, as impacts on local intersections or the transit network would be temporary in nature. Construction workers who drive to the construction sites and potential temporary parking restrictions along building frontages on Sutter Street, Post Street, and Scott Street would cause a temporary increase in parking demand. Construction workers would park within nearby off-street parking facilities that currently have availability during the day (e.g., 2300 Sutter Street Garage, 2186 and 2120 Geary Boulevard surface lots).

It is anticipated that construction activity of the LRDP projects may overlap with the construction activity of other proposed and/or planned projects in the area, notably the proposed Geary Boulevard BRT project, as described in Chapter Two. The construction activity of the LRDP projects and the Geary

Boulevard BRT project within the vicinity of the campus site should be coordinated, specifically with regard to construction worker parking and staging, although it is unlikely that they will have an effect on each other due to the distance between the campus site and Geary Boulevard, and to the comparative lack of disruption to the transportation network infrastructure required by the BRT project when compared to other major transportation projects.

UCSF would coordinate with various City departments such as SFMTA and DPW through the TASC to develop coordinated plans that would address construction-related vehicle routing and pedestrian movements adjacent to the construction area for the duration of construction. While construction of individual LRDP elements would by definition be temporary, the LRDP would require consideration of the effect of construction activities on existing and future transportation facilities (e.g. sidewalks, Muni service and facilities, roadways, bicycle routes, etc.) and existing and future adjacent land uses. Therefore, due to the need for on-going coordination and monitoring, the LRDP construction-related transportation impacts would be considered ***significant***.

Mitigation Measure TR-1d: Construction Coordination and Monitoring Measures

Traffic Control Plan for Construction – In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the Mount Zion campus site, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (e.g. Sutter Street), and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the LRDP projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic.

In the event that the construction timeframes of the major phases and other development projects adjacent to the Mount Zion campus site overlap, UCSF should coordinate with City Agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures.

Reduce SOV Mode Share for Construction Workers – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the campus sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – In order to minimize construction impacts on access for nearby residences, institutions, and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding

project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

Mitigation Measure TR-1d would reduce the LRDP's ***significant impacts*** related to construction-related transportation impacts to ***less-than-significant*** levels.

4.8.4 Mission Center

Construction of the LRDP projects would occur in phases expected to begin in 2022 with the construction of a new parking garage in what is currently surface parking on the eastern portion of the campus site block.

TABLE 4-27: MISSION CENTER PROPOSED CONSTRUCTION DATA

Construction Project	Construction Characteristics		
	Gross Square Feet	Housing Units	Housing Square Feet
Projects Complete by 2025 (Construction 2020 through 2024)			
New Mission Center Building	100,000	--	--
Mission Center Parking Garage	96,000	--	--

Source: UCSF, 2014

As discussed in Chapter 3, construction projects will generate no more than 15 daily truck trips on average. Most truck trips will enter/exit the campus site using 15th Street and/or Harrison Street and generally, construction projects will not result in a parking, vehicular (including transit), or pedestrian impact as construction and staging will occur on the campus site. Additionally, it is not expected that access to or operations of the SF Muni Maintenance Yard (H. Welton Flynn Motor Coach Division) directly south of the campus site will be affected as its main vehicle access point is on Harrison Street, facing away from the campus site. The construction of the new parking garage would result in the temporary displacement of approximately 224 existing employee parking spaces. UCSF will investigate temporary additional off-site parking supply in advance of construction of the new parking garage.

It is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions, as impacts on local intersections or the transit network would be temporary in nature. Construction workers who drive to the construction sites and potential temporary parking restrictions along frontages where construction and/or staging are occurring would cause a temporary increase in parking demand. Construction workers would park within nearby off-street parking facilities that currently have availability during the day (e.g., 3111 17th Street surface lot) or in satellite parking lots in which UCSF would provide temporary parking spaces.

UCSF would coordinate with various City departments such as SFMTA and DPW through the TASC to develop coordinated plans that would address construction-related vehicle routing and pedestrian movements adjacent to the construction area for the duration of construction. While construction of individual LRDP elements would by definition be temporary, the LRDP would require consideration of the effect of construction activities on existing and future transportation facilities (e.g. sidewalks, Muni service and facilities, roadways, bicycle routes, etc.) and existing and future adjacent land uses. Therefore, due to

the need for on-going coordination and monitoring, the LRDP construction-related transportation impacts would be considered ***significant***.

Mitigation Measure TR-1e: Construction Coordination and Monitoring Measures

Traffic Control Plan for Construction – In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the Mission Center campus site, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations, and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the LRDP projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic.

In the event that the construction timeframes of the major phases and other development projects adjacent to the Mission Center campus site overlap, UCSF should coordinate with City Agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures.

Reduce SOV Mode Share for Construction Workers – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the campus sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – In order to minimize construction impacts on access for nearby residences, institutions, and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

Mitigation Measure TR-1e would reduce the LRDP's ***significant impacts*** related to construction-related transportation impacts to ***less-than-significant*** levels.

5 CUMULATIVE CONDITIONS

This chapter presents the transportation impact analysis of the LRDP under Year 2015 conditions for the Mission Bay Campus Site and Year 2040 conditions for all four study campus sites. Year 2015 conditions describe the anticipated operating conditions of the transportation network once Phase One Medical Center at Mission Bay and Mission Hall are operational. Year 2040 conditions assess the long-term impacts of the LRDP, whose horizon year is 2035, in combination with projected development within San Francisco and the rest of the Bay Area, as well as implementation of planned transportation infrastructure projects.

The geographic context for the analysis of Year 2040 transportation impacts includes the local roadway and transit network in the vicinity of four UCSF campus sites included in this study. The discussion of 2040 transportation impacts assesses the degree to which the LRDP would affect the transportation network in conjunction with other reasonably foreseeable projects.

5.1 FORESEEABLE NEARBY DEVELOPMENT PROJECTS AND TRANSPORTATION NETWORK CHANGES

5.1.1 Approach

Year 2040 conditions traffic volumes were estimated based on cumulative development and growth identified by the SFCTA SF-CHAMP travel demand model, using model output that represents Existing conditions and model output for Year 2040 conditions. The Year 2040 traffic volumes include the additional vehicle-trips generated by the LRDP. Year 2015 traffic volumes were estimated based on the addition of traffic generated by foreseeable nearby development projects to the existing transportation network in addition to Phase One Medical Center at Mission Bay and Mission Hall traffic volumes. The foreseeable nearby development projects and transportation network changes included in each scenario are described below.

5.1.2 Year 2015 Conditions

The following development projects and infrastructure projects are included in the Year 2015 conditions Mission Bay campus site analysis.

5.1.2.1 Foreseeable Nearby Development Projects

Reasonably foreseeable development projects that were considered in the Year 2015 conditions analysis include planned development projects in the Eastern Neighborhoods and ongoing construction and new planned development in the Mission Bay Plan Areas, as incorporated into the SF-CHAMP travel demand model. It also includes the opening of the Phase One Medical Center and Mission Hall at the Mission Bay campus site.

5.1.2.2 Transportation Network Changes

The Mission Bay Redevelopment Plan calls for changes to the existing roadway network in the study area which would be in place by 2015. These changes are described under Mission Bay Existing Plus LRDP conditions, Section 4.2.2.

5.1.3 Year 2040 Conditions

The Year 2040 traffic impact analysis takes into consideration the following foreseeable development projects and transportation improvements.

5.1.3.1 Foreseeable Development Projects

Examples of reasonably foreseeable development projects that were considered in the Year 2040 analysis include the following:

- Candlestick Point-Hunters Point Shipyard Development Plan (Approved – Case No. 2007.0946E)
- Treasure Island and Yerba Buena Island Redevelopment Plan (Approved – Case No. 2007.0903E)
- California Pacific Medical Center Long Range Development Plan (Approved – Case No. 2005.0555E)
- Mission Bay Redevelopment Plan (Approved – Case No. 96.771E)
- Development associated with neighborhoods plans including the Eastern Neighborhoods Plan (Approved – Case No. 2004.0160E), Western SoMa Plan (Approved – Case No. 2008.0877E), Market-Octavia Plan (Approved – Case No. 2003.0347E), and Rincon Hill Plan (Approved – Case No. 2000.1081E)
- Central SoMa Plan (Case No. 2011.1356E)
- Seawall Lot 337 and Pier 48 Mixed-Use Project (Pending approval – Case No. 2013.0208E)
- Pier 70 Mixed-Use Project (Pending approval – Case No. Not yet assigned)

In addition to the above projects, the Golden State Warriors Project at Mission Bay Blocks 29-32 is in the early stages of environmental review. The details for this project were not available at the time of this study and are therefore discussed qualitatively in the Year 2040 traffic analysis section found in Section 5.2.3.

5.1.3.2 Transportation Network Changes

In addition to the transportation network changes described for Year 2015 conditions, the following transportation network changes are also incorporated into the Year 2040 analysis:

- **Transit Effectiveness Project (TEP**) (Approved) – The TEP is aimed at improving reliability, reducing travel times, providing more frequent service, and updating Muni bus routes and rail lines to better match current travel patterns. TEP recommendations include new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The TEP recommendations were unanimously endorsed by the

SFMTA Board of Directors in October 2008, and the EIR was certified by the San Francisco Planning Comission in March 2014. The TEP Implementation Strategy anticipates that many of the improvements would be implemented sometime between Fiscal Year 2014 and Fiscal Year 2019, subject to funding sources and resource availability. A description of the TEP improvements that relate to each campus site are included in Chapter 2.

- **San Francisco Bicycle Plan** (Approved) – The San Francisco Bicycle Plan aims to expand the City's bicycle network through the addition of 34 miles of Class II bicycle lanes, 75 miles of on-street Class III bicycle routes, improved bicycle parking, and a variety of programs to improve biycle access and safety. A desccription of the improvements that relate to each campus site are included in Chapter 2.

  Van Ness BRT Project (Approved) – Similar to the Geary BRT, this project proposes to increase bus service frequency by giving buses a dedicated travel lane and create high-quality bus stations along Van Ness Avenue between Mission Street and Lombard Street. The SFCTA and the SFMTA Boards approved a Locally Preferred Alternative for the Van Ness BRT project in May and June 2012. The Locally Preferred Alternative includes dedicated center-running bus lanes separated from traffic from Mission to Lombard Streets, which will be used by Muni Routes 49 and 47, and by Golden Gate Transit. This configuration will eliminate most left turns, include transit signal priority optimization to reduce travel times, and provide new pedestrian and streetscape improvements throughout the corridor. The Federal Transit Administration issued a Record of Decision in December 2013 determining that environmental review requirements have been met. BRT construction is expected to begin as early as 2015 with BRT service beginning on the corridor in 2018.

- **Central Subway Project** (Approved) - The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction of the underground segment from Bryant to Clay Street is currently underway, and the Central Subway will extend the T Third line northward from its current terminus at Fourth and King streets to a surface station south of Bryant Street and go underground at a portal under I-80. From there it will continue north to stations at Moscone Center, Union Square where it will provide passenger connections to the Powell Street Station and BART— and in Chinatown, where the line will terminate at Stockton and Clay streets. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019. This project would improve transit service between the Mission Bay campus site and Downtown.

- **Transit Center District Plan** (Approved) **-** Adopted in summer 2012, the Transit Center District Plan (TCDP) builds on the City's 1985 Downtown Plan to create new land use, urban form, building design, and public realm improvements in and around the new Transbay Transit Center that is currently under construction. The TCDP includes changes to the transportation network, including conversions of one-way streets to two-way traffic (i.e., Howard and Folsom streets), reductions in travel lanes, provision of new transit-only lanes, sidewalk widening, bulb-out installations, creation of new multi-use paths, and other improvements.

- **Geary BRT Project** (Pending Approval) – This project proposes to increase bus service frequency by giving buses a dedicated travel lane and create high-quality bus stations along Geary

Boulevard from Downtown to the Outer Richmond. The staff-recommended alternative prepared in January 2014 includes side-running bus lanes seperated from traffic from Gough Street to Palm Street in the Richmond District and center-running bus lanes from Palm Street to 27th Avenue. This configuration, along with elimination of most left turns, transit signal priority and traffic signal optimization will help reduce travel time on the corridor, and new pedestrian and streetscape improvements will be implemented throughout the corridor. The Geary Boulevard BRT is slated to be completed by 2018. This project would improve transit service to the Mount Zion Campus Site while reducing vehicle traffic lanes adjacent to the Campus Site from three lanes in each direction to two lanes in each direction.**Caltrain Electrification Program** (Pending Approval) - Caltrain will be implementing a Modernization Program that will electrify the railway to provide upgraded performance and allow more efficient operations and a higher capacity. The Program is scheduled to be complete by 2019. Currently Caltrain crosses 16th Street at grade at the intersection of 16th Street/Seventh/Mississippi streets. There are currently ten trains per hour during peak periods and the Modernization Program will allow the number of trains to increase to 12 trains per hour. Additionally, Caltrain is anticipating a "blended system" which will see California High Speed Rail trains running alongside Caltrain on the same tracks. However, the future of the High Speed Rail system is currently unknown due to legal and funding challenges. If the blended system is built, it may require a grade separation at 16th/Seventh/Mississippi Street. Electrification of Caltrain (and the associated improved travel times and frequencies) as well as the introduction of High Speed Rail may improve transit access for the UCSF Mission Bay Campus Site.

- **Central SoMa Plan** (Pending Approval) – The San Francisco Planning Department is in the process of developing an integrated community vision for the southern portion of the Central Subway rail corridor, in an area located generally between Townsend and Market streets along Fourth Street, between Second and Sixth streets. The plan's goal is to integrate transportation improvements for pedestrians, bicycles, and transit to intesified land uses in the corridor.
- **Second Street Improvement Project** (Pending Approval) – The San Francisco DPW, SFMTA, and the Planning Department have been working with community members on design improvements on Second Street between Market and King streets. The preferred concept would reduce the number of travel lanes from two to one travel lane in each direction, limit general parking, and relocate some commercial loading spaces and passenger loading/unloading zones.

5.2 YEAR 2040 TRAFFIC IMPACTS

This section presents the traffic analysis for Year 2040 conditions for each of the four campus sites. Year 2015 traffic conditions are presented for the Mission Bay campus site only. Consistent with the significance criteria presented in Section 4.1, the LRDP was determined to have a significant impact at an intersection if LRDP-generated trips would contribute considerably to the deterioration of intersection conditions (LOS E or F) under future year conditions.

5.2.1 Parnassus Heights

The weekday AM and PM peak hour Year 2040 traffic volumes and travel lane configurations at the study intersections are presented on **Figures 5-1A** and **5-1B. Table 5-1** presents the Existing and Year 2040 Plus LRDP intersection operating conditions for the weekday AM and PM peak hours. Under Year 2040 Plus LRDP conditions, 8 of the 23 study intersections are projected to operate at LOS E or LOS F conditions (as compared to 5 of the 23 study intersections operating at LOS E or LOS F under Existing conditions). The LRDP's contributions to the 2040 traffic volumes at the critical movements operating poorly (i.e., at LOS E or LOS F) for the 8 intersections operating at LOS E or LOS F under Year 2040 conditions were calculated to determine whether the LRDP's contributions to the LOS E or LOS F operating conditions under Year 2040 conditions would be considered significant.

TABLE 5-1: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - PARNASSUS HEIGHTS

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
1. Oak Street-Fell Street-Kezar Drive / Stanyan Street	Signal	AM	45	D	53	D
		PM	**58**	**E**	**68**	**E**
2. Lincoln Way / Ninth Avenue	Signal	AM	39	D	51	D
		PM	**65**	**E**	**>80**	**F**
3. Lincoln Way / Seventh Avenue	Signal	AM	32	C	37	D
		PM	39	D	51	D
4. Lincoln Way / Fourth Avenue	SSS	AM	**>50**	**F**	**>50**	**F**
		PM	23	C	**36**	**E**
5. Lincoln Way-Kezar Drive / Third Avenue	SSS	AM	24	C	26	D
		PM	29	D	28	D
6. Fredrick Street / Stanyan Street	Signal	AM	26	C	54	D
		PM	24	C	32	C
7. Irving Street / Ninth Avenue	Signal	AM	17	B	20	C
		PM	20	B	38	D
8. Irving Street / Seventh Avenue	Signal	AM	24	C	29	C
		PM	25	C	33	C
9. Irving Street / Fourth Avenue	AWS	AM	11 / 12	B / B	14 / 17	B / C
		PM	11 / 12	B / B	15 / 18	B / C
10. Irving Street / Second Avenue	AWS	AM	10 / 11	B / B	12 / 15	B / B
		PM	11 / 12	B / B	28 / **42**	D / **E**
11. Irving Street / Arguello Boulevard	SSS	AM	15	B	18	B
		PM	27	D	**>50**	**F**
12. Judah Street / Ninth Avenue	Signal	AM	15	B	17	B
		PM	16	B	21	C
13. Judah Street / Seventh Avenue	Signal	AM	32	C	39	D
		PM	25	C	32	C
14. Judah Street / Sixth Avenue	AWS	AM	17 / 18	C / C	20 / 20	C / C
		PM	17 / 22	C / C	22 / 29	C / D
15. Judah Street-Parnassus Avenue / Fifth Avenue	SSS	AM	22	C	33	D
		PM	**42**	**E**	**>50**	**F**

TABLE 5-1: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - PARNASSUS HEIGHTS

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
16. Parnassus Avenue / Fourth Avenue	AWS	AM PM	15 / 18 19 / 23	B / C C / C	20 / 25 25 / 32	C / D C / D
17. Parnassus Avenue / Third Avenue	SSS	AM PM	17 20	C C	19 23	C C
18. Parnassus Avenue / Hillway Avenue	SSS	AM PM	13 15	B C	14 17	B C
19. Parnassus Avenue / Hill Point Avenue	SSS	AM PM	17 16	C C	18 19	C C
20. Parnassus Avenue / Stanyan Street	Signal	AM PM	41 29	D C	**59** 37	**E** D
21. Kirkham Street / Seventh Avenue	Signal	AM PM	**70** 30	**E** C	**>80** 52	**F** D
22. Kirkham Street / Sixth Avenue	AWS	AM PM	13 / 16 13 / 14	B / C B / B	17 / 22 18 / 24	C / C C / C
23. Kirkham Street / Fifth Avenue	AWS	AM PM	<10 / <10 <10 / <10	A / A A / A	10 / 11 10 / 10	A / B A / A

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates LOS E or F operations.

Source: Fehr & Peers, 2014.

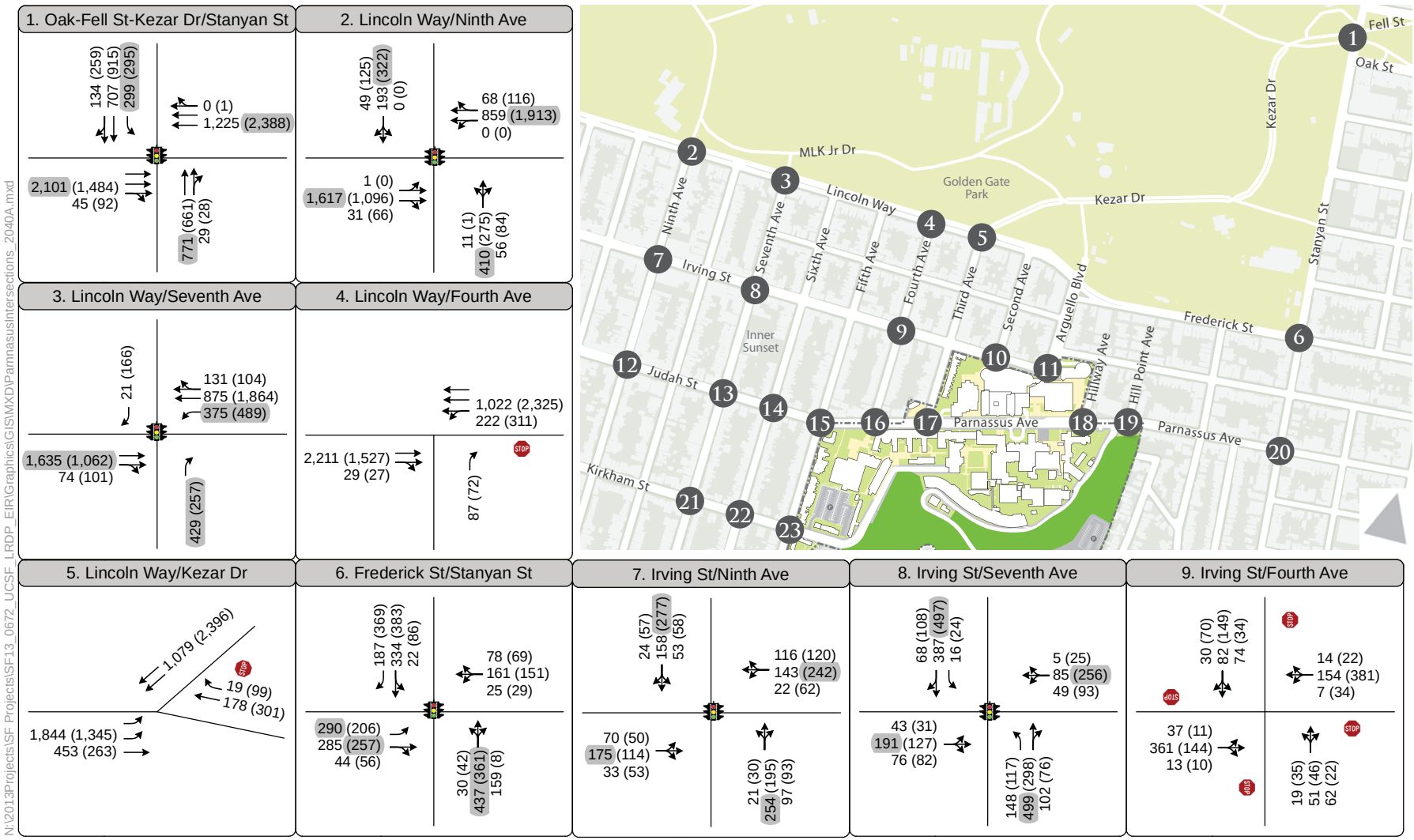


Figure 5-1A

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes-Parnassus Heights

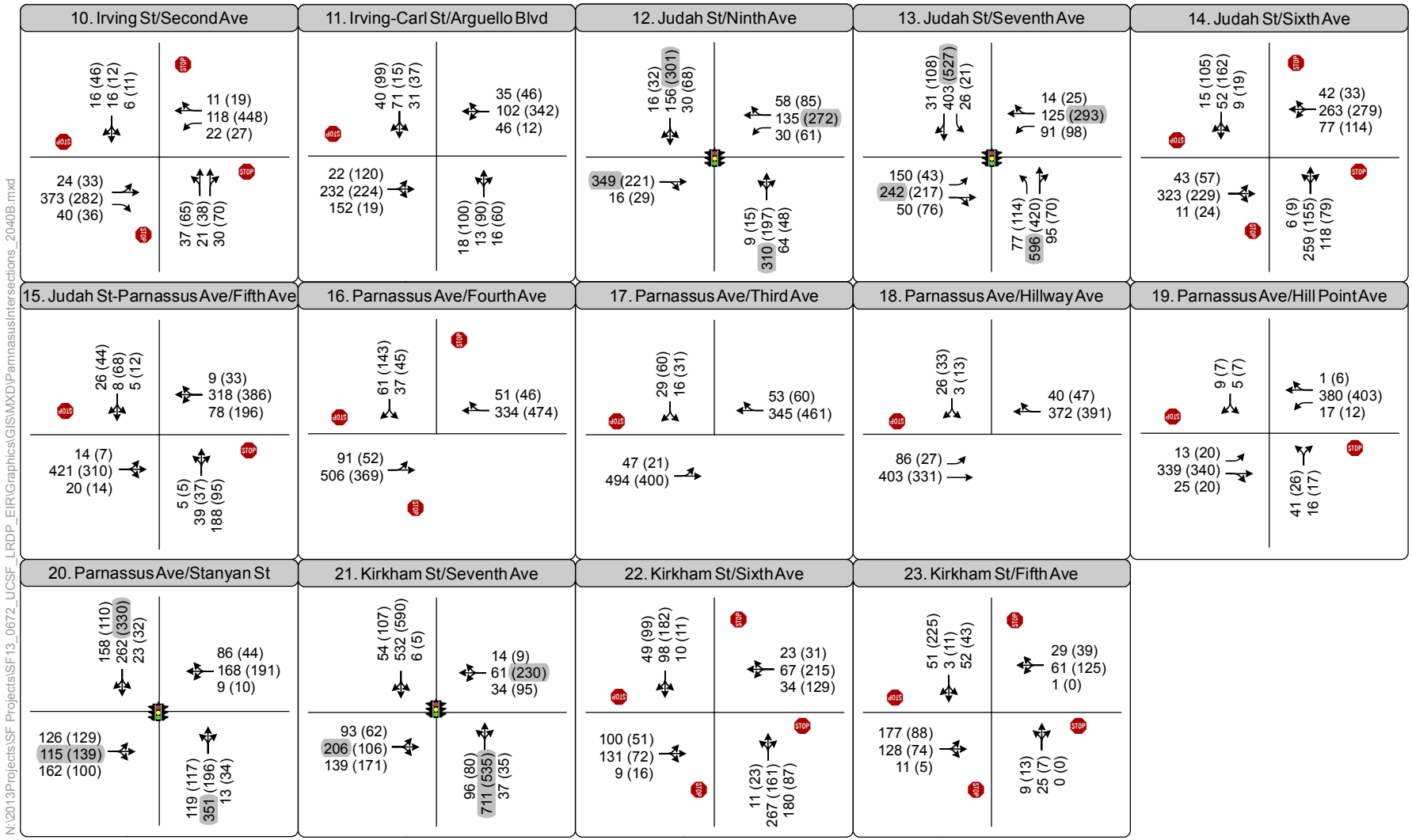


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Figure 5-1B

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes- Parnassus Heights

The Oak Street – Fell Street – Kezar Drive/Stanyan Street (Intersection #1) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions. The critical southbound left turn movement operates at LOS F during the PM peak. The LRDP would add zero vehicle trips to the critical southbound left turn movement, which represents no increase from Year 2040 conditions. While this movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – the westbound through – is expected to operate at LOS F and the LRDP would add six vehicle trips, which represents less than one percent increase from Year 2040 conditions. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Lincoln Way/Ninth Avenue (Intersection #2) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions. The critical southbound through movement operates at LOS F during the PM peak. The LRDP would add three vehicle trips to this critical movement, which represents a one percent increase from Year 2040 conditions. The other critical movement at the intersection – the westbound through – is expected to operate at LOS F and the LRDP would add nine vehicle trips, which represents less than one percent increase from Existing conditions. While these movements are expected to operate unacceptably under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Lincoln Way/Fourth Avenue (Intersection #4) unsignalized intersection operates at LOS F in the AM peak hour under Year 2040 Plus LRDP conditions. The westbound left turn movement operates at LOS F during the AM peak. The LRDP would add three vehicle trips to this critical movement, which represents a one percent increase from Year 2040 conditions. While the westbound left turn is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. In addition, the increase in traffic does not warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3). Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Lincoln Way/Fourth Avenue (Intersection #4) unsignalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions. The westbound left turn movement operates at LOS E during the PM peak. The LRDP would add three vehicle trips to this critical movement, which represents a one percent increase from Year 2040 conditions. While the westbound left turn is expected to operate at LOS E under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. In addition, the increase in traffic does not warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3). Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Irving Street/Second Avenue (Intersection #10) unsignalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions. The westbound shared through/right turn movement operates at LOS E during the PM peak. The LRDP would add eight vehicle trips to this movement, which represents a two percent increase from Year 2040 conditions. While the westbound shared through/right turn movement is expected to operate at LOS E under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. In addition, the increase in traffic does not warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3). Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Irving Street/Arguello Boulevard (Intersection #11) unsignalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions. The northbound approach operates at LOS F during the PM peak. The LRDP would add a total of 17 vehicle trips to this movement, which represents a seven percent increase from Year 2040 conditions. Since the northbound approach is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would be significantly considerable. However, the increase in traffic does not warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3). Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Judah Street-Parnassus Avenue/Fifth Avenue (Intersection #15) unsignalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions. The northbound approach operates at LOS F during the PM peak. The LRDP would add a total of two vehicle trips to this approach, which represents a one percent increase from Year 2040 conditions. While the northbound approach is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. In addition, the increase in traffic does not warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3). Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Parnassus Avenue/Stanyan Street (Intersection #20) signalized intersection operates at LOS E in the AM peak hour under Year 2040 Plus LRDP conditions. The critical northbound through movement operates at LOS F during the PM peak. The LRDP would add three vehicle trips to the critical northbound through movement, which represents a one percent increase from Year 2040 conditions. While this movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – the eastbound through – is expected to operate at LOS F and the LRDP would add no vehicle trips. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Kirkham Street/Seventh Avenue (Intersection #21) signalized intersection operates at LOS F in the AM peak hour under Year 2040 Plus LRDP conditions. The critical northbound through movement operates at LOS F during the PM peak. The LRDP would add 12 vehicle trips to the critical northbound through movement, which represents a two percent increase from Year 2040 conditions. While this movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – the eastbound through – is expected to operate at LOS F and the LRDP would add one vehicle trip, which is an increase of less than one percent from Year 2040 conditions. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

UCSF already implements a robust campus-wide TDM program and proposes to expand its TDM program under the 2014 LRDP. The proposed expanded TDM strategies, described in the Project Description (Section 1.2.5) and listed again below, were developed as part of an internal planning process that resulted in identifying feasible TDM measures that UCSF could implement that could reasonably result in a reduction in single-occupant vehicle (SOV) trips. In order to accomplish these goals, UCSF would implement some or all of the following:

- Expand UCSF Vanpool Program (add new vanpools and subsidize costs to attract new riders);
- Develop more robust UCSF Carpool Matching and convert additional parking spaces to carpool only;

- Enhance existing City CarShare pods on campus sites and participate in the city's new Medical Center Rideshare program;
- Increase supply and access to bicycle parking and showers/lockers;
- Enhance shuttle system with Wifi and Next Bus;
- Limit parking for non-faculty tenants in new housing;
- Gradually increase cost of employee parking, over time; and
- Promote flexible work schedules, as possible.

Additional TDM strategies that were considered, but rejected as infeasible include the following:

- Extending UCSF shuttle service to new Park-and-Ride locations in the North Bay, South Bay, and East Bay;
- Expanding and/or extending UCSF shuttle service to the Fourth and King Caltrain Station, the Embarcadero BART/Ferry, and Civic Center BART; and
- Free or discounted Muni passes for students, staff, and faculty.

Although the LRDP is not projected to cause any new significant impacts to traffic circulation at the Parnassus Heights Campus Site, the improvement measure below could be implemented to lessen the effect of SOV vehicles in the project vicinity.

Improvement Measure IM-TR-5a: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips to the Parnassus Heights Campus Site

- UCSF shall continue to investigate and implement TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

5.2.2 Mission Bay (Year 2015)

The weekday AM and PM peak hour Year 2015 Plus Phase One Medical Center and Mission Hall (Phase One MC and MH) traffic volumes and travel lane configuration at the study intersections are presented on **Figures 5-2A** and **5-2B. Table 5-2** presents the Year 2015 and Year 2015 Plus Phase One MC and Mission Hall intersection operating conditions for the weekday AM and PM peak hours. With the exception of Mission Bay Boulevard / Seventh Street, 16th Street / Vermont Avenue, Mariposa Street / Fourth Street, and Mariposa Street / I-280 Northbound Ramps, all intersections under Year 2015 conditions are expected to operate at the same level of service as under Existing conditions.

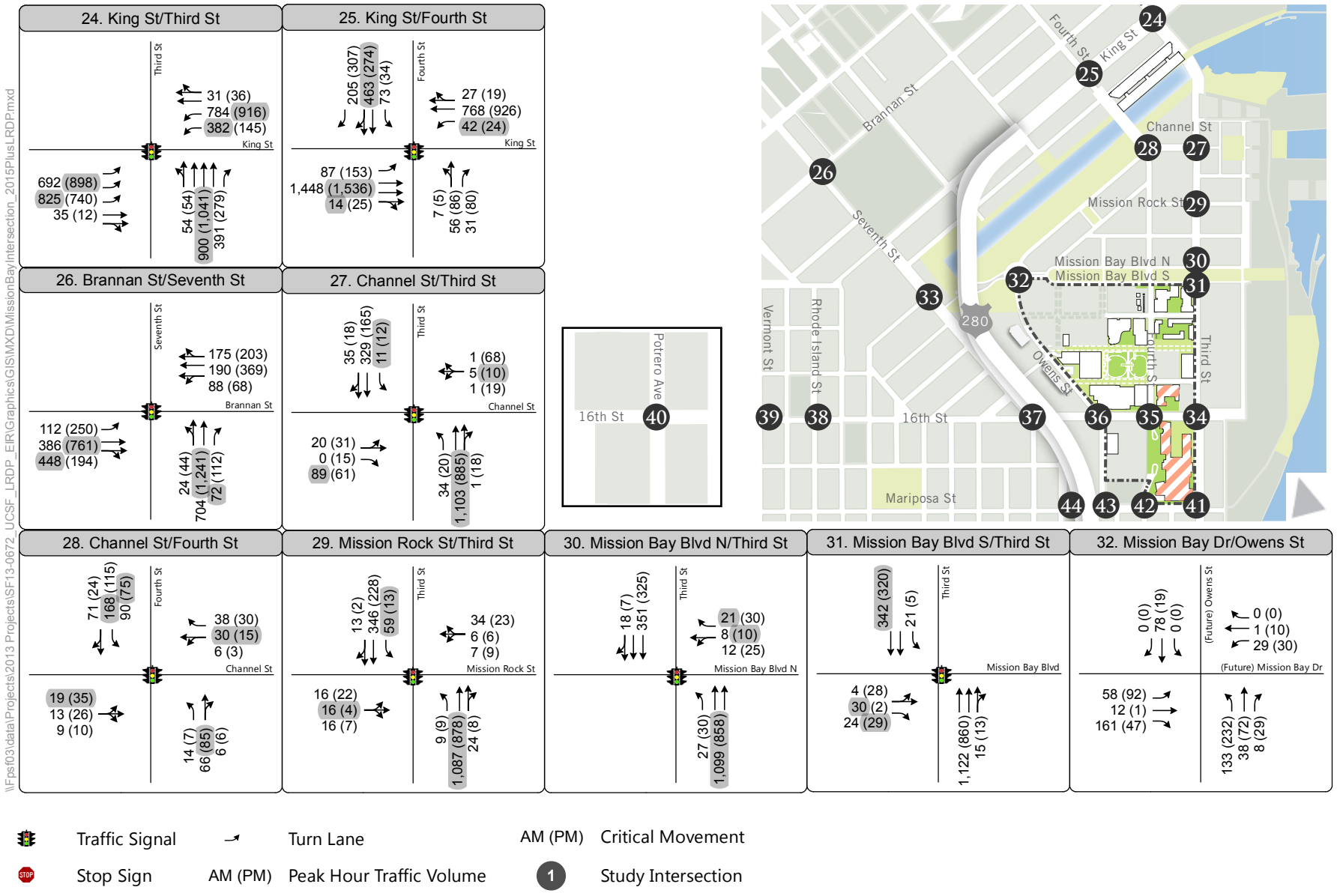
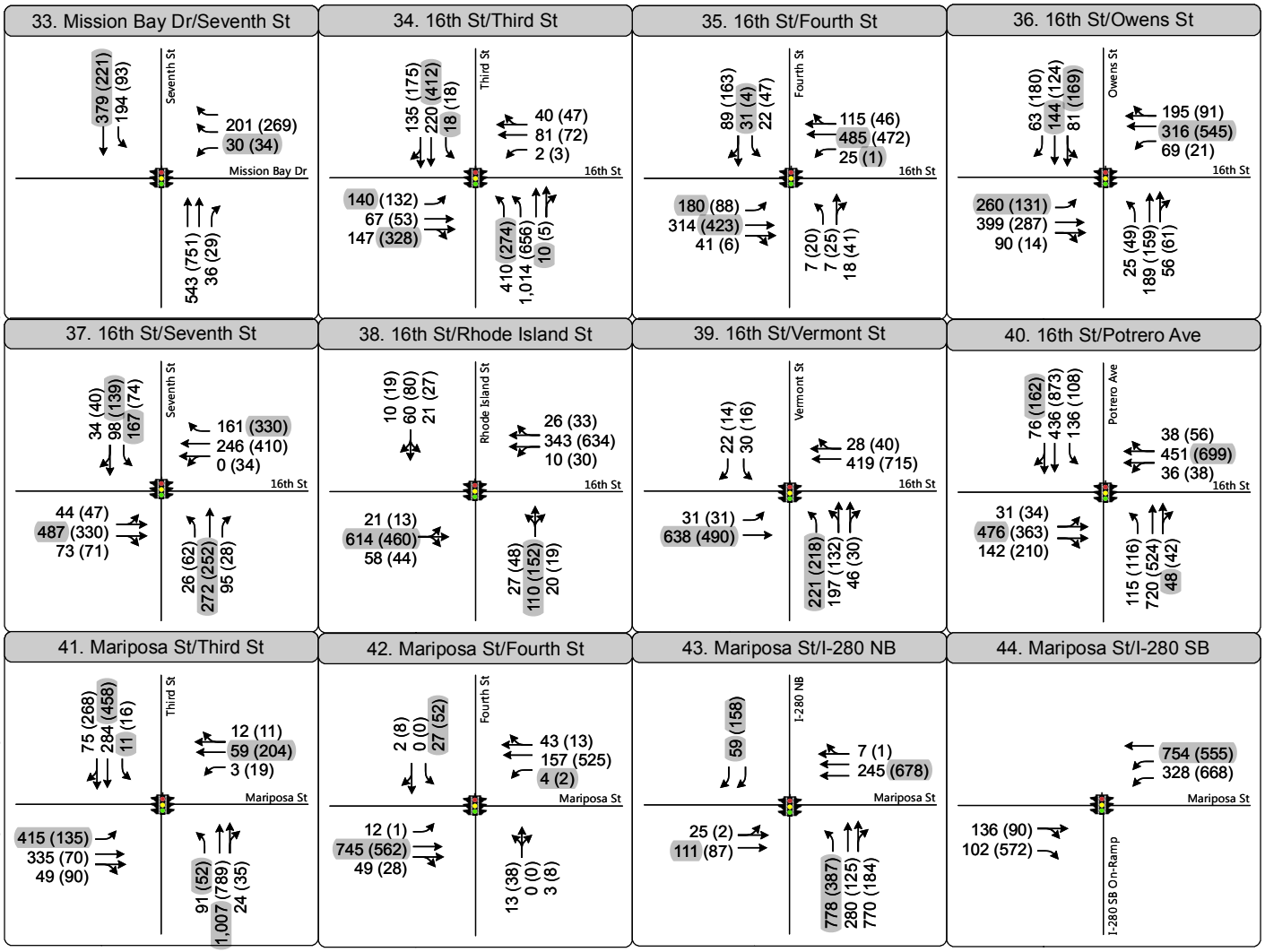


Figure 5-2A

Year 2015 Plus Phase 1 MC Intersection Lane Configurations, Traffic Control, and Volumes- Mission Bay



Traffic Signal — Turn Lane — AM (PM) Critical Movement

Stop Sign — AM (PM) Peak Hour Traffic Volume

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Figure 5-2B

Year 2015 Plus Phase 1 MC Intersection Lane Configurations, Traffic Control, and Volumes-Mission Bay

TABLE 5-2: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Year 2015		Year 2015 Plus Phase One MC and MH	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
24. King Street / Third Street	Signal	AM	49	D	50	D
		PM	**72**	**E**	**73**	**E**
25. King Street / Fourth Street	Signal	AM	45	D	45	D
		PM	53	D	53	D
26. Brannan Street / Seventh Street	Signal	AM	14	B	15	B
		PM	31	C	38	D
27. Channel Street / Third Street	Signal	AM	40	D	40	D
		PM	30	C	31	C
28. Channel Street / Fourth Street	Signal	AM	16	B	16	B
		PM	17	B	17	B
29. Mission Rock Street / Third Street	Signal	AM	38	D	39	D
		PM	29	C	30	C
30. Mission Bay Boulevard North / Third Street	Signal	AM	18	B	18	B
		PM	16	B	16	B
31. Mission Bay Boulevard South / Third Street	Signal	AM	24	C	24	C
		PM	20	B	21	C
32. Mission Bay Boulevard / Owens Street	Roundabout	AM	<10	A	<10	A
		PM	<10	A	<10	A
33. Mission Bay Boulevard / Seventh Street	Signal	AM	22	C	25	C
		PM	24	C	26	C
34. 16th Street / Third Street	Signal	AM	41	D	44	D
		PM	33	C	34	C
35. 16th Street / Fourth Street	Signal	AM	27	C	30	C
		PM	26	C	27	C
36. 16th Street / Owens Street	Signal	AM	35	C	34	C
		PM	28	C	29	C
37. 16th Street / Seventh Street	Signal	AM	40	D	40	D
		PM	37	D	37	D
38. 16th Street / Rhode Island Avenue	Signal	AM	16	B	19	B
		PM	13	B	13	B
39. 16th Street / Vermont Avenue	Signal	AM	21	C	28	C
		PM	16	B	16	B
40. 16th Street / Potrero Avenue	Signal	AM	30	C	35	C
		PM	41	D	45	D
41. Mariposa Street / Third Street	Signal	AM	**64**	**E**	46	D
		PM	30	C	38	D
42. Mariposa Street / Fourth Street	Signal	AM	20	B	18	B
		PM	15	B	19	B
43. Mariposa Street / I-280 Northbound Ramps	Signal	AM	23	C	23	C
		PM	29	C	29	C
44. Mariposa Street / I-280 Southbound Ramps	SSS[5]	AM	**>50**	**F**	<10	A
		PM	**>50**	**F**	14	B

TABLE 5-2: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Year 2015		Year 2015 Plus Phase One MC and MH	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]

Notes:
1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates LOS E or F operations
5. Intersection is signalized under Year 2015 Plus Phase One MC and Mission Hall condition

Source: Fehr & Peers, 2014.

Under Year 2015 Plus Phase One MC and Mission Hall conditions, one of the 21 study intersections are projected to operate at LOS E or LOS F conditions (as compared to three of the 21 study intersections operating at LOS E or LOS F under Existing conditions). The Phase One MC and Mission Hall contributions to the Year 2015 traffic volumes at the critical movements operating poorly (i.e., at LOS E or LOS F) for the one intersection operating at LOS E or LOS F under Year 2015 conditions was calculated to determine whether the Phase One MC and Mission Hall contributions to the LOS E or LOS F operating conditions under Year 2015 conditions would be considered significant.

The King Street/Third Street (Intersection #24) signalized intersection operates at LOS E in the PM peak hour under Year 2015 Plus Phase One MC and Mission Hall conditions. The critical eastbound left turn movement operates at LOS F during the PM peak. The Phase One MC and Mission Hall would add 17 vehicle trips to the critical eastbound left turn movement, which represents a two percent increase from Year 2015 conditions. The other critical movements at this intersection – northbound through and westbound through – operate at LOS C and E, respectively, during the PM peak. Since the northbound through movement is expected to operate at LOS C, the Phase One MC and MH's contribution would not be considered significant. The Phase One MC and Mission Hall would add no vehicle trips to the westbound through movement. While the eastbound left critical movement is expected to operate at LOS F under Year 2015 Plus Phase One MC and Mission Hall conditions, the Phase One MC and MH's contribution would not be considered significant. Therefore, the Phase One MC and MH's impact at this intersection would be considered ***less than significant***.

5.2.3 Mission Bay (Year 2040)

As presented in Section 2.4.3, the SFMTA has proposed two transit enhancement treatment visions for 16th Street. The treatments are referred to as the Moderate and Expanded Alternatives in the TEP EIR. The Moderate Alternative proposes a number of physical changes to the portion of the rerouted 22 Fillmore in the vicinity of the Mission Bay campus site including new and relocated transit stops, transit bulbs, and new traffic signals at Connecticut and Missouri streets. The Expanded Alternative includes these features as well as the conversion of a lane of mixed-flow lane of traffic to a transit-only lane along 16th Street in both directions through the campus site. The Expanded Alternative also includes the prohibition of left

turns at Bryant, Potrero (westbound only), Utah, San Bruno, Kansas, Rhode Island, De Haro, Carolina, Wisconsin, Arkansas, Connecticut, and Missouri streets. The Mission Bay Year 2040 traffic analysis includes both the Moderate Alternative and Expanded Alternative.

The weekday AM and PM peak hour Year 2040 traffic volumes and travel lane configuration at the study intersections are presented on **Figures 5-3A** and **5-3B. Table 5-3** presents the Existing and Year 2040 Plus LRDP intersection operating conditions for the weekday AM and PM peak hours. Under Year 2040 Plus LRDP conditions with the Moderate Alternative, four of the 21 study intersections are projected to operate at LOS E or LOS F conditions (as compared to four of the 21 study intersections operating at LOS E or LOS F under Existing conditions). The Expanded Alternative would cause an additional three intersections to operate at LOS E or F conditions due to the conversion of a mixed-flow travel lane in both directions to transit-only lanes. The LRDP's contributions to the 2040 traffic volumes at the critical movements operating poorly (i.e., at LOS E or LOS F) for the intersections operating at LOS E or LOS F under Year 2040 conditions were calculated to determine whether the LRDP's contributions to the LOS E or LOS F operating conditions under Year 2040 conditions would be considered significant. Year 2040 Plus LRDP conditions with the Moderate and Expanded Alternatives are described below, including a discussion of the LRDP Variant. This section also includes a qualitative discussion of the potential effects of the development of a Golden State Warriors event center at Mission Bay Blocks 29-32.

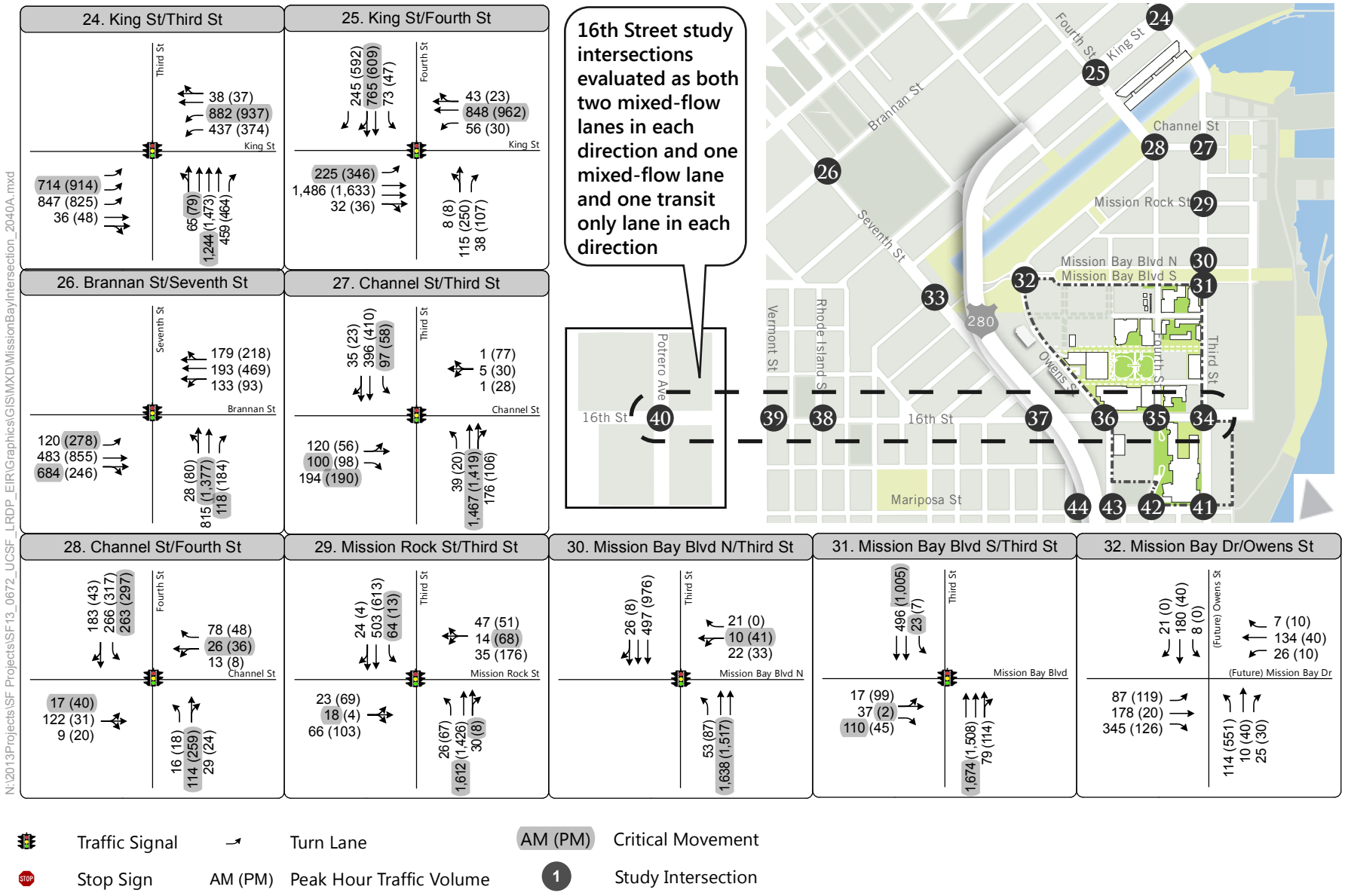

Figure 5-3A

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes- Mission Bay

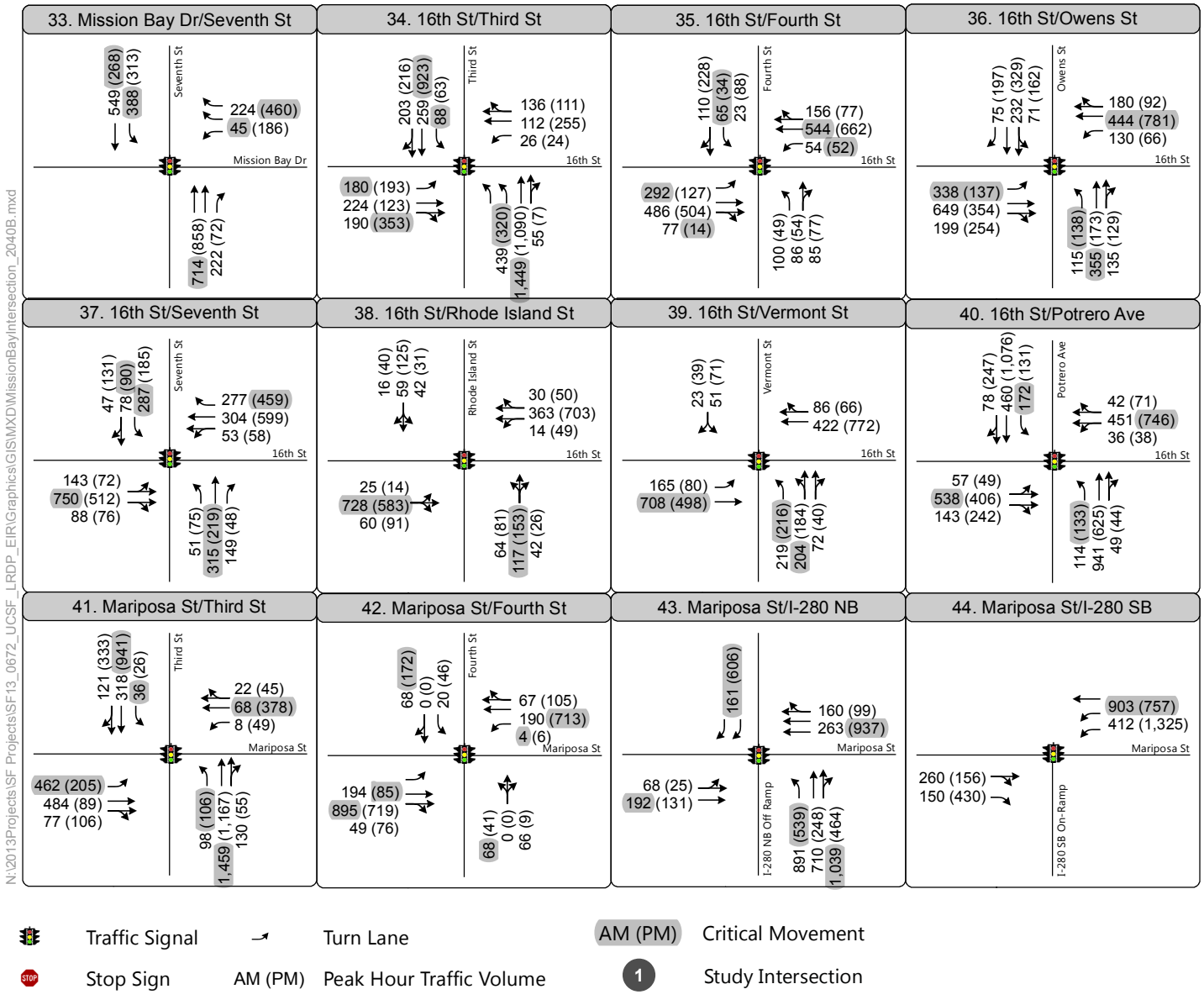

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Figure 5-3B

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes-Mission Bay

TABLE 5-3: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP (Moderate Alternative)		Year 2040 Plus LRDP (Expanded Alternative)[6]	
			Veh. Del.[2]	LOS[3]	Veh. Del.[2]	LOS[3]	Veh. Del.[2]	LOS[3]
24. King Street / Third Street	Signal	AM	46	D	54	D		
		PM	**70**	**E**	**76**	**E**		
25. King Street / Fourth Street	Signal	AM	43	D	52	D		
		PM	53	D	**>80**	**F**		
26. Brannan Street / Seventh Street	Signal	AM	14	B	27	C		
		PM	25	C	**66**	**E**		
27. Channel Street / Third Street	Signal	AM	40	D	52	D		
		PM	30	C	51	D		
28. Channel Street / Fourth Street	Signal	AM	15	B	28	C		
		PM	16	B	30	C		
29. Mission Rock Street / Third Street	Signal	AM	37	D	47	D		
		PM	29	C	43	D		
30. Mission Bay Boulevard North / Third Street	Signal	AM	17	B	38	D		
		PM	16	B	27	C		
31. Mission Bay Boulevard South / Third Street	Signal	AM	23	C	40	D		
		PM	20	B	31	C		
32. Mission Bay Boulevard / Owens Street	Roundabout	AM	<10	A	<10	A		
		PM	<10	A	<10	A		
33. Mission Bay Boulevard / Seventh Street	Signal	AM	20	B	39	D		
		PM	22	C	49	D		
34. 16th Street / Third Street	Signal	AM	36	D	49	D	54	D
		PM	31	C	50	D	46	D
35. 16th Street / Fourth Street	Signal	AM	26	C	44	D	**60**	**E**
		PM	27	C	32	C	49	D
36. 16th Street / Owens Street	Signal	AM	32	C	37	D	**>80**	**F**
		PM	30	C	33	C	**59**	**E**
37. 16th Street / Seventh Street	Signal	AM	43	D	54	D	**>80**	**F**
		PM	44	D	48	D	**>80**	**F**
38. 16th Street / Rhode Island Avenue	Signal	AM	15	B	51	D	31	C
		PM	13	B	18	B	25	C
39. 16th Street / Vermont Avenue	Signal	AM	19	B	34	C	39	D
		PM	15	B	17	B	30	C
40. 16th Street / Potrero Avenue	Signal	AM	27	C	51	D	**>80**	**F**
		PM	35	C	**>80**	**F**	**>80**	**F**
41. Mariposa Street / Third Street	Signal	AM	52	D	54	D	54	D
		PM	28	C	50	D	49	D
42. Mariposa Street / Fourth Street	Signal	AM	<10	A	26	C	26	C
		PM	11	B	26	C	28	C
43. Mariposa Street / I-280 Northbound Ramps	Signal	AM	**73**	**E**	45	D	48	D
		PM	31	C	39	D	40	D
44. Mariposa Street / I-280 Southbound Ramps	SSS[5]	AM	**>50**	**F**	<10	A		
		PM	**>50**	**F**	13	B		

TABLE 5-3: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP (Moderate Alternative)		Year 2040 Plus LRDP (Expanded Alternative)[6]	
			Veh. Del.[2]	LOS[3]	Veh. Del.[2]	LOS[3]	Veh. Del.[2]	LOS[3]

Notes:
1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates LOS E or F operations
5. Intersection is signalized under Year 2040 and Year 2040 Plus LRDP conditions
6. Intersections with grayed cells in the Expanded Alternative columns operate at the same delay and LOS as in the Moderate Alternative columns.

Source: Fehr & Peers, 2014.

The King Street/Third Street (Intersection #24) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical eastbound left turn movement operates at LOS F during the PM peak. The LRDP would add 36 vehicle trips to the critical eastbound left turn movement, which represents a four percent increase from Year 2040 conditions. The other critical movements at this intersection – northbound left turn and westbound through – operate at LOS C and F, respectively, during the PM peak. Since the northbound left turn movement is expected to operate at LOS C, the LRDP's contribution would not be considered significant. The LRDP would add two vehicle trips to the westbound through, which is an increase of less than one percent from Year 2040 conditions. While this critical movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The King Street/Fourth Street (Intersection #25) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical eastbound left turn movement operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the critical eastbound left turn movement. The other critical movements at this intersection – southbound through and westbound through – operate at LOS D and E, respectively, during the PM peak. Since the southbound through movement is expected to operate at LOS D, the LRDP's contribution would not be considered significant. The LRDP would add no vehicle trips to the westbound through movement. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The Brannan Street/Seventh Street (Intersection #26) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical northbound through movement operates at LOS F during the PM peak. The LRDP would add 163 vehicle trips to the critical northbound through movement, which represents 54 percent of the increase to Year 2040 conditions. Therefore, the LRDP's impact at this intersection would be considered ***significant***. The other critical movement at this intersection – the eastbound left turn – operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the eastbound left turn. While this critical movement is

expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution to these movements would not be considered **significant**.

A mitigation measure (E-29), whose responsibility for implementation falls to the City was identified as part of the Mission Bay FSEIR. As part of the mitigation measure, the City would monitor the potential impact at this intersection, with the ultimate aim to re-stripe the northbound approach to provide three travel lanes, once needed. This mitigation measure would require removal of on-street parking on Seventh Street for approximately 300 feet approaching the intersection, shifting the northbound bike lane to the curb for the same distance to ensure the Class II bicycle facility on this street is not interrupted by this measure, and aligning the northbound through lanes through the intersection. The implementation of this measure by the City would improve traffic operations from LOS F to LOS C in the PM peak hour and reduce the impacts to ***less-than-significant*** levels.

The 16th Street/Fourth Street (Intersection #35) signalized intersection operates at LOS E in the AM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical westbound through and eastbound left turn movements operate at LOS E and LOS F, respectively, during the AM peak hour. The LRDP would add 198 vehicle trips to the westbound through movement, which represents an increase of 65 percent from Year 2040 conditions. The LRDP would add 184 vehicle trips to the critical eastbound left turn movement, which represents a 188 percent increase from Year 2040 conditions. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***. The other critical movement at this intersection – southbound through – operates at LOS D during the AM peak. Since the southbound through movement is expected to operate at LOS D, the LRDP's contribution to this movement would not be considered significant.

> **Mitigation Measure TR-2a: Implement the Moderate Alternative of the TEP 16th Street Proposal**
>
> Two mixed-flow travel lanes in each direction would be required to improve operations at 16th Street/Fourth Street to acceptable levels of service in the AM peak hour. As such, this mitigation measure would require that the Moderate Alternative of the TEP 16th Street proposal be implemented in order to maintain the requisite traffic carrying capacity of 16th Street for the forecasted traffic demand with the LRDP in place. The implementation of this measure would improve traffic operations from LOS E to LOS D in the AM peak hour and reduce the impacts to less-than-significant levels. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Therefore, this impact is considered ***significant and unavoidable***.

Should the City of San Francisco implement the Expanded Alternative of the TEP, thereby resulting in a significant unavoidable cumulative impact on traffic conditions along 16th Street[15] to which the proposed

[15] The TEP EIR, which included the expansion of the Mission Bay campus (including Phase One of the Medical Center and up to 2.65 Million gsf in the North campus), identified both project and cumulative significant and unavoidable impacts at numerous study intersections along 16th Street under the TEP's Expanded Alternative. Source: San Francisco Planning Department. 2014. *TEP Final EIR*, March 27, 2014, Available online at http://tepeir.sfplanning.org. Accessed April 3, 2014. Case No. 2011.0558E. The document and supporting information may also be viewed at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA in case file 2011.0558E.

2014 LRDP would make a considerable contribution, UCSF shall implement the following mitigation measures:

Mitigation Measure TR-3a: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

- UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

The implementation of this mitigation measure could improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. Therefore, any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

Mitigation Measure TR-4a: Manage Parking Supply

UCSF will continue to monitor the parking supply at the Mission Bay Campus Site so as not to oversupply parking at this campus site. As presented in Section 4.7, the trend in providing total parking supply at the Mission Bay Campus Site is negative as parking supply is expected to grow at a lower rate than total population. Monitoring the total parking supply per population at the Mission Bay Campus Site and revising the rate downward, if necessary, would improve traffic operations along 16th Street by reducing vehicular trips to and from the Mission Bay Campus Site. However, similar to Mitigation Measure TR-3a, any combination of reduced parking at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

The 16th Street/Owens Street (Intersection #36) signalized intersection operates at LOS F in the AM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical eastbound through movement operates at LOS F during the AM peak. The LRDP would add 283 vehicle trips to the critical eastbound through movement, which represents a 92 percent increase from Year 2040 conditions. The other critical movements at this intersection – northbound through and westbound left turn – operate

at LOS B and F, respectively, during the AM peak. Since the northbound through movement is expected to operate at LOS B, the LRDP's contribution would not be considered significant. The LRDP would add 121 vehicle trips to the westbound left turn movement, which represents an increase of 1,344 percent from Year 2040 conditions. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***.

The 16th Street/Owens Street (Intersection #36) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical northbound left turn movement operates at LOS F during the PM peak. The LRDP would add 84 vehicle trips to the critical eastbound through movement, which represents a 156 percent increase from Year 2040 conditions. The other critical movements at this intersection – eastbound through and westbound through – both operate at LOS F during the PM peak. The LRDP would add 30 vehicle trips to the eastbound through movement, which represents an increase of 11 percent from Year 2040 conditions. The LRDP would add 233 vehicle trips to the westbound through movement, which represents an increase of 47 percent from Year 2040 conditions. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***.

Mitigation Measure TR-2b: Implement the Moderate Alternative of the TEP 16th Street Proposal

Two mixed-flow travel lanes in each direction would be required to improve operations at 16th Street/Owens Street to acceptable levels of service in the AM and PM peak hours. As such, this mitigation measure would require that the Moderate Alternative of the TEP 16th Street proposal be implemented in order to maintain the requisite traffic carrying capacity of 16th Street for the forecasted traffic demand with the LRDP in place. The implementation of this measure would improve traffic operations from LOS F to LOS D in the AM and PM peak hours and reduce the impacts to less-than-significant levels. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Therefore, this impact is considered ***significant and unavoidable***.

Mitigation Measure TR-3b: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

- UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

The implementation of this mitigation measure would improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. Therefore, any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

Mitigation Measure TR-4b: Manage Parking Supply

UCSF will continue to monitor the parking supply at the Mission Bay Campus Site so as not to oversupply parking at this campus site. As presented in Section 4.7, the trend in providing total parking supply at the Mission Bay Campus Site is negative as parking supply is expected to grow at a lower rate than total population. Monitoring the total parking supply per population at the Mission Bay Campus Site and revising the rate downward, if necessary, would improve traffic operations along 16th Street by reducing vehicular trips to and from the Mission Bay Campus Site. However, similar to Mitigation Measure TR-3a, any combination of reduced parking at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

The 16th Street/Seventh Street (Intersection #37) signalized intersection operates at LOS F in the AM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical southbound left turn movement operates at LOS F during the AM peak. The LRDP would add 162 vehicle trips to the critical southbound left turn movement, which represents a 130 percent increase from Year 2040 conditions. The other critical movements at this intersection – northbound through and eastbound through – both operate at LOS F during the AM peak. The LRDP would add no vehicle trips to the northbound through movement. The LRDP would add 412 vehicle trips to the eastbound through movement, which represents an increase of 143 percent from Year 2040 conditions. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***.

The 16th Street/Seventh Street (Intersection #37) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical southbound right turn movement operates at LOS F during the PM peak. The LRDP would add 55 vehicle trips to the critical southbound left turn movement, which represents a 72 percent increase from Year 2040 conditions. The other critical movements at this intersection – northbound through and westbound through – operate at LOS E and F, respectively, during the PM peak. The LRDP would add no vehicle trips to the northbound through movement. The LRDP would add 176 vehicle trips to the westbound through movement, which represents an increase of 48 percent from Year 2040 conditions. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***.

Mitigation Measure TR-2c: Implement the Moderate Alternative of the TEP 16th Street Proposal

Two mixed-flow travel lanes in each direction would be required to improve operations at 16th Street/Seventh Street to acceptable levels of service in the AM and PM peak hours. As such, this mitigation measure would require that the Moderate Alternative of the TEP 16th Street proposal be implemented in order to maintain the requisite traffic carrying capacity of 16th Street for the forecasted traffic demand with the LRDP in place. The implementation of this measure would improve traffic operations from LOS F to LOS D in the AM and PM peak hours and reduce the impacts to less-than-significant levels. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Therefore, this impact is considered ***significant and unavoidable***.

Mitigation Measure TR-3c: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

- UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

The implementation of this mitigation measure would improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. Therefore, any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

Mitigation Measure TR-4c: Manage Parking Supply

UCSF will continue to monitor the parking supply at the Mission Bay Campus Site so as not to oversupply parking at this campus site. As presented in Section 4.7, the trend in providing total parking supply at the Mission Bay Campus Site is negative as parking supply is expected to grow at a lower rate than total population. Monitoring the total parking supply per population at the Mission Bay Campus Site and revising the rate downward, if necessary, would improve traffic operations along 16th Street by reducing vehicular trips to and from the Mission Bay Campus Site. However, similar to Mitigation Measure TR-3a, any combination of reduced parking at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative.

Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

The 16th Street/Potrero Avenue (Intersection #40) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate Alternative. The critical northbound left turn movement operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the critical northbound left turn movement. The other critical movement at this intersection – westbound through – operates at LOS C during the PM peak. Since the westbound through movement is expected to operate at LOS C, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection with the TEP Moderate Alternative proposal for 16th Street would be considered ***less than significant***.

The 16th Street/Potrero Avenue (Intersection #40) signalized intersection operates at LOS F in the AM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical southbound left turn movement operates at LOS F during the AM peak. The LRDP would add 19 vehicle trips to the critical southbound left turn movement, which represents a 12 percent increase from Year 2040 conditions. The other critical movement at this intersection – eastbound through – operates at LOS F during the AM peak. The LRDP would add 130 vehicle trips to the eastbound through movement, which represents an increase of 38 percent from Year 2040 conditions. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***.

The 16th Street/Potrero Avenue (Intersection #40) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical westbound through movement operates at LOS F during the PM peak. The LRDP would add 102 vehicle trips to the critical westbound through movement, which represents a 17 percent increase from Year 2040 conditions. The other critical movement at this intersection – northbound left turn – operates at LOS F during the PM peak. However, the LRDP would add no vehicle trips to the northbound left turn movement. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***.

Mitigation Measure TR-2d: Implement the Moderate Alternative of the TEP 16th Street Proposal

Two mixed-flow travel lanes in each direction would be required to improve operations at 16th Street/Potrero Avenue to acceptable levels of service in the AM peak hour. As such, this mitigation measure would require that the Moderate Alternative of the TEP 16th Street proposal be implemented in order to maintain the requisite traffic carrying capacity of 16th Street for the forecasted traffic demand with the LRDP in place. The implementation of this measure would improve traffic operations from LOS F to LOS D in the AM peak hour and reduce the impacts to less-than-significant levels. However, the traffic operations would remain at LOS F in the PM peak hour. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Therefore, this impact is considered ***significant and unavoidable***.

Mitigation Measure TR-3d: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and

has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

- UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

The implementation of this mitigation measure would improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. Therefore, any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

Mitigation Measure TR-4d: Manage Parking Supply

UCSF will continue to monitor the parking supply at the Mission Bay Campus Site so as not to oversupply parking at this campus site. As presented in Section 4.7, the trend in providing total parking supply at the Mission Bay Campus Site is negative as parking supply is expected to grow at a lower rate than total population. Monitoring the total parking supply per population at the Mission Bay Campus Site and revising the rate downward, if necessary, would improve traffic operations along 16th Street by reducing vehicular trips to and from the Mission Bay Campus Site. However, similar to Mitigation Measure TR-3a, any combination of reduced parking at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

5.2.3.1 LRDP Variant

Traffic conditions associated with the LRDP Variant would be similar to those described for the LRDP. **Table 5-4** presents the Existing and Year 2040 Plus LRDP Variant intersection operating conditions for the weekday AM and PM peak hours. Under Year 2040 Plus LRDP conditions with the Moderate Alternative, six of the 21 study intersections are projected to operate at LOS E or LOS F conditions (as compared to four of the 21 study intersections operating at LOS E or LOS F under Existing conditions). The Expanded Alternative would cause an additional two intersections to operate at LOS E or F conditions due to the conversion of a mixed-flow travel lane in both directions to transit-only lanes (as compared to three of the 21 study intersections operating at LOS E or LOS F under Existing conditions).. Per Section 3.6.2, the LRDP Variant's contributions to the 2040 traffic volumes at the critical movements operating poorly (i.e., at LOS E or LOS F) for the intersections operating at LOS E or LOS F under Year 2040 conditions would be approximately two percent higher to those calculated for the LRDP.

TABLE 5-4: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP Variant (Moderate Alternative)		Year 2040 Plus LRDP Variant (Expanded Alternative)[6]	
			Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]
24. King Street / Third Street	Signal	AM	46	D	54	D		
		PM	**70**	**E**	**76**	**E**		
25. King Street / Fourth Street	Signal	AM	43	D	52	D		
		PM	53	D	**>80**	**F**		
26. Brannan Street / Seventh Street	Signal	AM	14	B	26	C		
		PM	25	C	**66**	**E**		
27. Channel Street / Third Street	Signal	AM	40	D	52	D		
		PM	30	C	51	D		
28. Channel Street / Fourth Street	Signal	AM	23	C	30	C		
		PM	16	B	30	C		
29. Mission Rock Street / Third Street	Signal	AM	37	D	47	D		
		PM	29	C	42	D		
30. Mission Bay Boulevard North / Third Street	Signal	AM	17	B	38	D		
		PM	16	B	27	C		
31. Mission Bay Boulevard South / Third Street	Signal	AM	23	C	41	D		
		PM	20	B	31	C		
32. Mission Bay Boulevard / Owens Street	Roundabout	AM	<10	A	11	B		
		PM	<10	A	<10	A		
33. Mission Bay Boulevard / Seventh Street	Signal	AM	20	B	38	D	38	D
		PM	22	C	38	D	43	D
34. 16th Street / Third Street	Signal	AM	36	D	49	D	54	D
		PM	31	C	47	D	45	D
35. 16th Street / Fourth Street	Signal	AM	26	C	43	D	**62**	**E**
		PM	27	C	31	C	47	D
36. 16th Street / Owens Street	Signal	AM	32	C	37	C	**>80**	**F**
		PM	30	C	33	C	**58**	**E**
37. 16th Street / Seventh Street	Signal	AM	43	D	**56**	**E**	**>80**	**F**
		PM	44	D	47	D	**>80**	**F**
38. 16th Street / Rhode Island Avenue	Signal	AM	15	B	52	D	32	C
		PM	13	B	18	B	25	C
39. 16th Street / Vermont Avenue	Signal	AM	19	B	34	C	39	D
		PM	15	B	17	B	31	C
40. 16th Street / Potrero Avenue	Signal	AM	27	C	49	D	**77**	**E**
		PM	35	C	**>80**	**F**	**>80**	**F**
41. Mariposa Street / Third Street	Signal	AM	52	D	**56**	**E**	**56**	**E**
		PM	28	C	50	D	50	D
42. Mariposa Street / Fourth Street	Signal	AM	<10	A	25	C	26	C
		PM	11	B	26	C	28	C
43. Mariposa Street / I-280 Northbound Ramp	Signal	AM	**73**	**E**	46	D	49	D
		PM	31	C	41	D	39	D

TABLE 5-4: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION BAY

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP Variant (Moderate Alternative)		Year 2040 Plus LRDP Variant (Expanded Alternative)[6]	
			Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]	Vehicle Delay[2] (sec)	LOS[3]
44. Mariposa Street / I-280 Southbound Ramp	SSS[5]	AM PM	**>50** **>50**	**F** **F**	<10 13	A B		

Notes:
1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates unacceptable operations per UCSF LOS standards
5. Intersection is signalized under Existing Plus LRDP condition

Source: Fehr & Peers, 2014.

In general, the addition of LRDP Variant-generated traffic would result in similar changes in the average delay per vehicle at most study intersections to the LRDP. Most of the study intersections would continue to operate at the same service levels as under 2040 Plus LRDP conditions, with the exceptions being 16th Street/Seventh Street which would operate at LOS E during the AM peak hour under the Moderate Alternative and Mariposa Street / Third Street which would operate at LOS E during the AM peak hour under both the Moderate Alternative and the Expanded Alternative.

The LRDP Variant would contribute considerably to the operations at several intersections which are expected to operate at LOS E or F under the TEP Moderate and / or Expanded Alternative, including the following previously identified intersections:

- Brannan Street / Seventh Street (PM peak hour, Moderate and Expanded Alternatives). A mitigation measure (E-29), whose responsibility for implementation falls to the master developer of Mission Bay, FOCIL, was identified as part of the Mission Bay FSEIR. As part of the mitigation measure, the City would monitor the potential impact at this intersection, with the ultimate aim to re-stripe the northbound approach to provide three travel lanes, once needed. This mitigation measure would require removal of on-street parking on Seventh Street for approximately 300 feet approaching the intersection, shifting the northbound bike lane to the curb for the same distance to ensure the Class II bicycle facility on this street is not interrupted by this measure, and aligning the northbound through lanes through the intersection. The implementation of this measure by the City would improve traffic operations from LOS F to LOS C in the PM peak hour and reduce the impacts to ***less-than-significant*** levels.

- 16th Street/Fourth Street (AM peak hour, Expanded Alterative) The LRDP' Variant's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered

significant. The implementation of Mitigation Measure TR-2a would improve traffic operations from LOS E to LOS D in the AM peak hour and reduce the impacts to less-than-significant levels. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Additionally, should the City of San Francisco implement the Expanded Alternative of the TEP, thereby resulting in a significant unavoidable cumulative impact on traffic conditions along 16th Street to which the LRDP Variant would make a considerable contribution, UCSF shall implement Mitigation Measures TR-3a and TR-4a. Any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site, as identified in MM TR- 3a, and combination of reduced parking at the Mission Bay Campus Site, as identified in MM TR- 4a, could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of these mitigation measures, this impact under the LRDP Variant would still be considered ***significant and unavoidable***.

- 16th Street/Owens Street (AM and PM peak hours, Expanded Alterative) The LRDP' Variant's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***. The implementation of Mitigation Measure TR-2b would improve traffic operations from LOS F to LOS D in the AM and PM peak hours and reduce the impacts to less-than-significant levels. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Additionally, should the City of San Francisco implement the Expanded Alternative of the TEP, thereby resulting in a significant unavoidable cumulative impact on traffic conditions along 16th Street to which the LRDP Variant would make a considerable contribution, UCSF shall implement Mitigation Measures TR-3b and TR-4b. Any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site, as identified in MM TR- 3a, and combination of reduced parking at the Mission Bay Campus Site, as identified in MM TR- 4b, could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of these mitigation measures, this impact under the LRDP Variant would still be considered ***significant and unavoidable***.

- 16th Street/Seventh Street (AM and PM peak hours, Expanded Alterative) The LRDP' Variant's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***. The implementation of Mitigation Measure TR-2a would improve traffic operations from LOS F to LOS D in the AM and PM peak hours and reduce the impacts to less-than-significant levels. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Additionally, should the City of San Francisco implement the Expanded Alternative of the TEP, thereby resulting in a significant unavoidable cumulative impact on traffic conditions along 16th Street to which the LRDP Variant would make a considerable contribution, UCSF shall implement Mitigation Measures TR-3c and TR-4c. Any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site, as identified in MM TR- 3c, and combination of reduced parking at the Mission Bay Campus Site, as identified in MM TR- 4c, could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of these mitigation measures, this impact under the LRDP Variant would still be considered ***significant and unavoidable***.

- 16th Street/Potrero Avenue (AM and PM peak hours, Expanded Alterative) The LRDP' Variant's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***significant***. The implementation of Mitigation Measure TR-2d would improve traffic operations from LOS F to LOS D in the AM peak hour and reduce the impacts to less-than-significant levels. However, the traffic operations would remain at LOS F in the PM peak hour. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Additionally, should the City of San Francisco implement the Expanded Alternative of the TEP, thereby resulting in a significant unavoidable cumulative impact on traffic conditions along 16th Street to which the LRDP Variant would make a considerable contribution, UCSF shall implement Mitigation Measures TR-3d and TR-4d. Any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site, as identified in MM TR- 3d, and combination of reduced parking at the Mission Bay Campus Site, as identified in MM TR- 4d, could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of these mitigation measures, this impact under the LRDP Variant would still be considered ***significant and unavoidable***.

The LRDP Variant would contribute considerably to the operations at two intersections which are expected to operate at LOS E or F under the TEP Moderate and / or Expanded Alternative, which were not previously identified under the LRDP scenario:

- 16th Street/Seventh Street (AM peak hour, Moderate Alterative) The LRDP' Variant's impact at this intersection with the TEP Moderate Alternative proposal for 16th Street would be considered **significant**. To mitigate the poor operating condition of the intersection, additional travel lane capacity would be needed at the eastbound and westbound approaches to the intersection. The provision of additional travel lane capacity would require the narrowing of sidewalks and/or removal of the Class II bicycle facility on 16th Street. Narrowing of sidewalks and removal of bicycle lanes would be inconsistent with the transit and pedestrian environment encouraged by the City's Transit First Policy by removing space dedicated to pedestrians and increasing the distances required for pedestrians to cross streets. Additionally, the presence of the I-280 freeway support structures prohibit further widening of the 16th Street right-of-way. For the reasons described above, there are no feasible geometric mitigation measures to improve conditions to a less-than-significant level.

  Mitigation Measure TR-3e: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

  - UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

  - UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV

trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

The implementation of this mitigation measure and the inclusion of the additional TDM strategies presented in Section 1.2.5 would improve traffic operations at the intersection of Mariposa Street/Third Street in the AM peak hour under the Moderate Alternative. The TDM strategies presented in Section 1.2.5 were recently proposed by UCSF and hence were not assumed in the travel demand calculations presented in Chapter 3. These TDM strategies would reduce SOV trips by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. The implementation of this measure by UCSF and the associated reduction in vehicle trips to the Mission Bay campus site would improve traffic operations at 16th Street/Seventh Street from LOS E to LOS D in the AM peak hour and reduce the impacts to ***less-than-significant*** levels.

- Mariposa Street/Third Street (AM peak hour, Moderate Alterative) The LRDP Variant's impact at this intersection with the TEP Moderate Alternative proposal for 16th Street would be considered **significant**. To mitigate the poor operating condition of the intersection, additional travel lane capacity would be needed at the eastbound approach to the intersection. The provision of additional travel lane capacity would require the narrowing of sidewalks on Mariposa Street. Narrowing of sidewalks would be inconsistent with the transit and pedestrian environment encouraged by the City's Transit First Policy by removing space dedicated to pedestrians and increasing the distances required for pedestrians to cross streets. For the reasons described above, there are no feasible geometric mitigation measures to improve conditions to a less-than-significant level.

  Mitigation Measure TR-3f: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

  - UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

  - UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

  The implementation of this mitigation measure and the inclusion of the additional TDM strategies presented in Section 1.2.5 would improve traffic operations at the intersection of Mariposa Street/Third Street in the AM peak hour under the Moderate Alternative. The TDM strategies presented in Section 1.2.5 were recently proposed by UCSF and hence were not assumed in the

travel demand calculations presented in Chapter 3. These TDM strategies would reduce SOV trips by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. The implementation of this measure by UCSF and the associated reduction in vehicle trips to the Mission Bay campus site would improve traffic operations at Mariposa Street/Third Street from LOS E to LOS D in the AM peak hour and reduce the impacts to ***less-than-significant*** levels.

- Mariposa Street/Third Street (AM peak hour, Expanded Alterative) The LRDP' Variant's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered **significant**. To mitigate the poor operating condition of the intersection, additional travel lane capacity would be needed at the eastbound approach to the intersection. The provision of additional travel lane capacity would require the narrowing of sidewalks on Mariposa Street. Narrowing of sidewalks would be inconsistent with the transit and pedestrian environment encouraged by the City's Transit First Policy by removing space dedicated to pedestrians and increasing the distances required for pedestrians to cross streets. For the reasons described above, there are no feasible geometric mitigation measures to improve conditions to a less-than-significant level.

  Mitigation Measure TR-3g: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

  - UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

  - UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

  The implementation of this mitigation measure and the inclusion of the additional TDM strategies presented in Section 1.2.5 would improve traffic operations at the intersection of Mariposa Street/Third Street in the AM peak hour under the Expanded Alternative. The TDM strategies presented in Section 1.2.5 were recently proposed by UCSF and hence were not assumed in the travel demand calculations presented in Chapter 3. These TDM strategies would reduce SOV trips by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. The implementation of this measure by UCSF and the associated reduction in vehicle trips to the Mission Bay campus site would improve traffic operations at Mariposa Street/Third Street from LOS E to LOS D in the AM peak hour and reduce the impacts to ***less-than-significant*** levels.

5.2.3.2 Proposed Golden State Warriors Event Center at Mission Bay

In April 2014, the Golden State Warriors (GS Warriors) announced the purchase of 12 acres of land from Salesforce.com in the Mission Bay South Redevelopment Project Area where the team intends to build a new sports and entertainment center. Previously, the Warriors were exploring constructing the arena and associated uses on Piers 30 and 32 and Seawall Lot 330 to the north of Mission Bay, along The Embarcadero.

The proposed event center would be built on four adjacent city blocks (Development Blocks 29 through 32) bounded by Third Street to the west, South Street to the north, Terry François Boulevard to the east, and 16th Street to the South. The four blocks are currently undeveloped, with a portion of Blocks 29 and 30 adjacent to South Street being used as a temporary surface parking lot.

The GS Warriors have just started the planning and design for the new site, so the division of the approximately one million square feet of development allowed for the site among the 18,000-seat arena, office, and retail uses has not yet been established. Based on previous designs for Piers 30 and 32, the new arena is likely to occupy 500,000 to 600,000 square feet of development, with the remaining space (400,000 to 500,000 square feet) available for office and retail uses.

The SF-CHAMP travel demand forecasting model developed in 2013 by the SFCTA and the SF Planning Department and used in this study to estimate future cumulative transportation conditions assumes approximately one million square feet of office/R&D with ground floor retail to occur by the year 2040 within Blocks 29 through 32. As such, the traffic and transit data derived from the SF-CHAMP model and used in the analysis of cumulative transportation impacts of the 2014 LRDP can be deemed as a conservative and valid representation of a typical day when no events take place at the proposed arena.

`The transportation effects of an event at the new arena are not yet known, as the GS Warriors have just started the necessary project development and environmental studies. Based on modal split and vehicle occupancy data taken from surveys of SF Giants game attendees, spectators at a sellout game at the new arena could be expected to generate about 3,200 vehicle trips and 8,300 transit trips.[16] Based on previous data for Piers 30 and 32, the event vehicle and transit demand would be inbound during the evening (starting around 6 PM) and outbound late at night (after 10 or 10:30 PM) since most games and concerts would start around 7:30 and last for 2 ½ or 3 hours.

The exact contribution of the new arena to the PM peak hour cumulative traffic and transit conditions is not known as this time, as the project analysis have just started. In addition the GS Warriors are in the process of developing as part of the project a Transportation Management Program (TMP) to address potential transportation project impacts.

Several key intersections in the Mission Bay South Area, such as 16th Street/Third Street, 16th Street/Seventh/Mississippi Street, Mariposa Street/Third Street, and Seventh Street/Mission Bay Drive, would be expected to operate at a high LOS D by year 2040 during the PM peak hour, as shown in **Table**

[16] Based on a modal split of 44% auto, 46% transit and 10% other travel modes, and an average vehicle occupancy of 2.6 people per vehicle. Source: Appendix A (p. A-8), Travel and Parking Demand Estimates for the Proposed Event Center and Mixed Use Development at Piers 30-32 and Seawall Lot 330, Draft 3 Technical Memorandum, Adavant Consulting, February 28, 2014. This document is available for review at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California 94103.

5-3. Thus, it is possible that an increase in inbound traffic due to an arena event causes these intersections to operate at LOS E or F instead of LOS D. If inbound arena event traffic causes significant traffic impacts at these intersections, the contribution of LRDP traffic to the cumulative conditions at these intersections would be substantial and the LRDP's impact to cumulative traffic impacts therefore would be considered ***significant.*** The significant impact may not be able to be mitigated to a less than significant level; therefore rendering the cumulative impacts potentially significant and unavoidable.

Mitigation Measure TR-3h: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

- UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

The implementation of this mitigation measure would improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. Therefore, any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

Similar to under the LRDP scenario, several key intersections in the Mission Bay South Area, such as 16th Street/Third Street, 16th Street/Seventh/Mississippi Street, and Seventh Street/Mission Bay Drive, would be expected to operate at a high LOS D by year 2040 during the PM peak hour under the LRDP Variant, as shown in **Table 5-4**. Thus, it is possible that an increase in inbound traffic due to an arena event causes these intersections to operate at LOS E or F instead of LOS D. If inbound arena event traffic causes significant traffic impacts at these intersections, the contribution of LRDP Variant traffic to the cumulative conditions at these intersections would be substantial and the LRDP Variant's impact to cumulative traffic impacts therefore would be considered ***significant.*** The significant impact may not be able to be mitigated to a less than significant level; therefore rendering the cumulative impacts potentially significant and unavoidable.

As identified above, Mitigation Measure TR-3g would improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. Any

combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of these mitigation measures, this impact under the LRDP Variant would still be considered ***significant and unavoidable***.

5.2.4 Mount Zion

The weekday AM and PM peak hour Year 2040 traffic volumes and travel lane configuration at the study intersections are presented on **Figures 5-4A** and **5-4B**. **Table 5-5** presents the Existing and Year 2040 Plus LRDP intersection operating conditions for the weekday AM and PM peak hours. Under Year 2040 conditions none of the 16 study intersections are projected to operate at LOS E or LOS F conditions, similar to under Existing conditions).

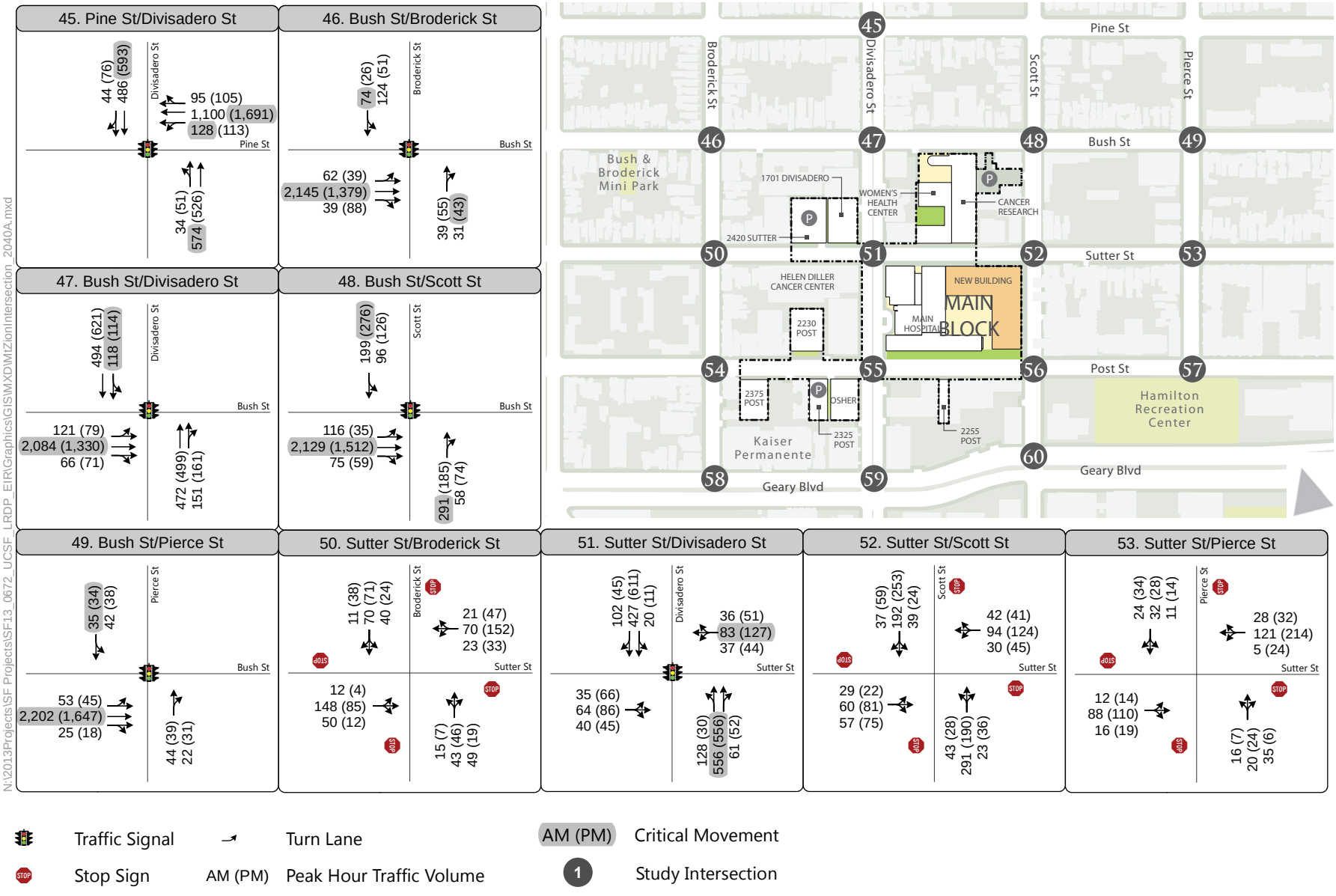

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Figure 5-4A

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes- Mount Zion

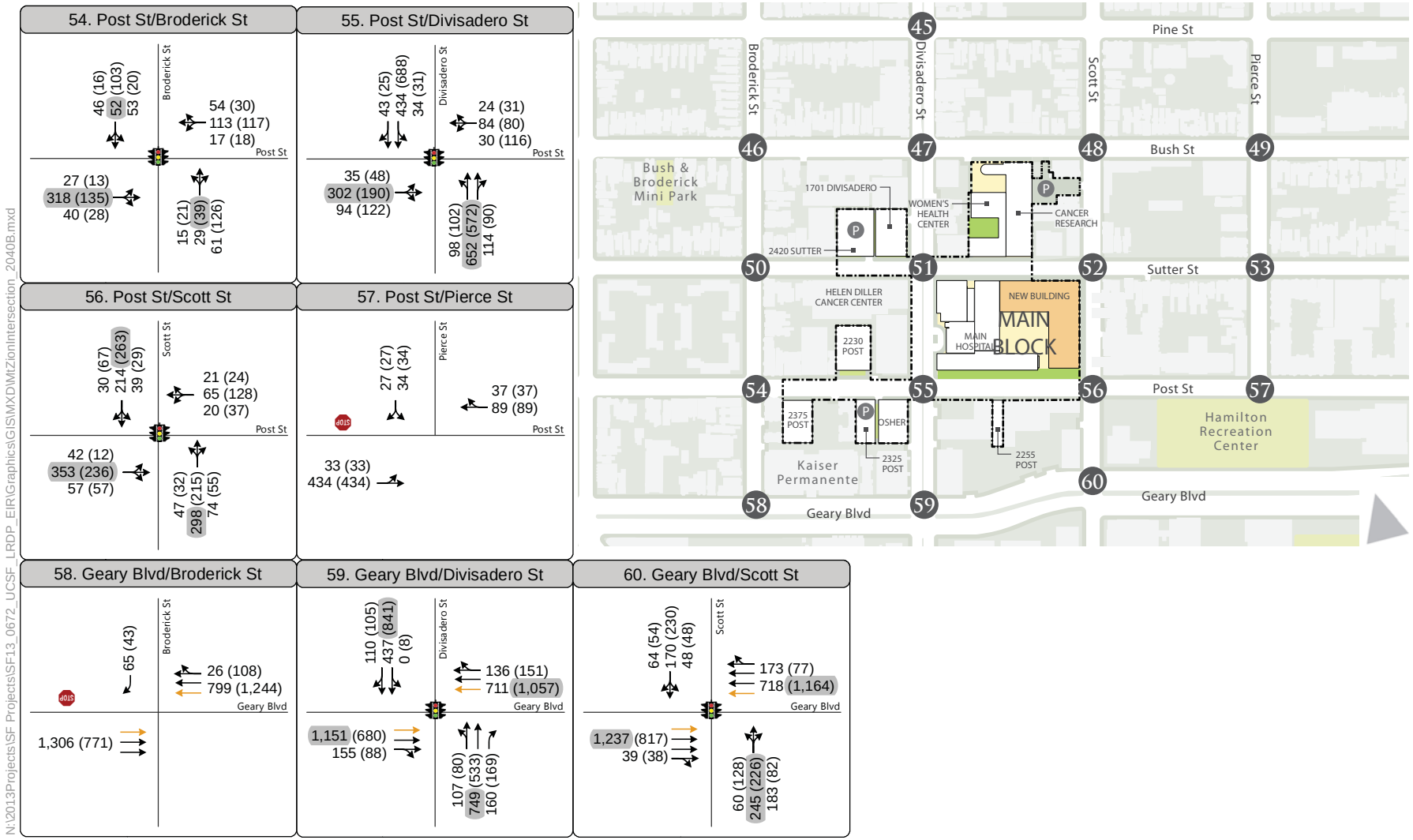

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Figure 5-4B

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes- Mount Zion

TABLE 5-5: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MOUNT ZION

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP	
			Vehicle Delay[2] (seconds)	LOS[3]	Vehicle Delay[2] (seconds)	LOS[3]
45. Pine Street / Divisadero Street	Signal	AM	14	B	16	B
		PM	32	C	34	C
46. Bush Street / Broderick Street	Signal	AM	17	B	42	D
		PM	11	B	13	B
47. Bush Street / Divisadero Street	Signal	AM	48	D	53	D
		PM	18	B	25	C
48. Bush Street / Scott Street	Signal	AM	30	C	40	D
		PM	17	B	27	C
49. Bush Street / Pierce Street	Signal	AM	30	C	48	D
		PM	15	B	26	C
50. Sutter Street / Broderick Street	AWS	AM	<10 / <10	A / A	<10 / <10	A / A
		PM	<10 / <10	A / A	<10 / 10	A / A
51. Sutter Street / Divisadero Street	Signal	AM	12	B	14	B
		PM	12	B	14	B
52. Sutter Street / Scott Street	AWS	AM	10 / 11	B / B	13 / 15	B / C
		PM	11 / 12	B / B	13 / 15	B / C
53. Sutter Street / Pierce Street	AWS	AM	<10 / <10	A / A	<10 / <10	A / A
		PM	<10 / <10	A / A	<10 / 10	A / A
54. Post Street / Broderick Street	Signal	AM	14	B	15	B
		PM	12	B	12	B
55. Post Street / Divisadero Street	Signal	AM	17	B	22	C
		PM	14	B	22	C
56. Post Street / Scott Street	Signal	AM	17	B	22	C
		PM	15	B	17	B
57. Post Street / Pierce Street	SSS	AM	12	B	12	B
		PM	11	B	12	B
58. Geary Boulevard / Broderick Street	SSS	AM	15	B	12	B
		PM	17	C	16	C
59. Geary Boulevard / Divisadero Street	Signal	AM	34	C	49	D
		PM	30	C	37	D
60. Geary Boulevard / Scott Street	Signal	AM	21	C	27	C
		PM	20	B	30	C

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates LOS E or F operations

Source: Fehr & Peers, 2014.

During the AM and PM peak hours, all 16 of the study intersections would continue to operate at acceptable levels of service (LOS D or better) under Year 2040 Plus LRDP conditions. Therefore, the LRDP would have a ***less-than-significant impact*** at these intersections.

Although the LRDP is not projected to cause any new significant impacts to traffic circulation at the Mount Zion Campus Site, the improvement measure below could be implemented to lessen the effect of SOV vehicles in the project vicinity.

Improvement Measure IM-TR-5b: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips to the Mount Zion Campus Site

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

5.2.5 Mission Center

As presented in Section 5.2.4, the SFMTA has proposed two transit enhancement treatment visions for 16th Street as a part of the TEP. Through the Mission Center study area, the Moderate Alternative would maintain four-lanes on 16th Street and the Expanded Alternative would convert the westbound mixed-flow lane of traffic to a transit-only lane while maintaining the two eastbound mixed-flow traffic lanes (note: further to the east in the Mission Bay campus site, the Expanded Alternative of the TEP proposes transit-only lanes in both directions – the eastbound transit-only lane is proposed to begin at Bryant Street). Therefore, the Mission Center Year 2040 traffic analysis includes both the Moderate and Expanded Alternatives.

Year 2040 Plus LRDP conditions peak hour turning movement volumes for the Mission Center Campus Site are shown on **Figures 5-5A** and **5-5B**. **Table 5-6** presents intersection levels of service and delay for the AM and PM peak hours for the Existing and Year 2040 Plus LRDP scenarios. Under Year 2040 Plus LRDP conditions with the Moderate Alternative, six of the 15 study intersections are projected to operate at LOS E or LOS F conditions (as compared to one of the 15 study intersections operating at LOS E or LOS F under Existing conditions). The Expanded Alternative would cause an additional four intersections to operate at LOS E or F conditions due to the conversion of a mixed-flow westbound travel lane to transit-only lane. The LRDP's contributions to the Year 2040 traffic volumes at the critical movements operating poorly (i.e., at LOS E or LOS F) for the intersections operating at LOS E or LOS F under Year 2040 conditions were calculated to determine whether the LRDP's contributions to the LOS E or LOS F operating conditions under Year 2040 conditions would be considered significant. Year 2040 Plus LRDP conditions with the Moderate and Expanded Alternatives are described below.

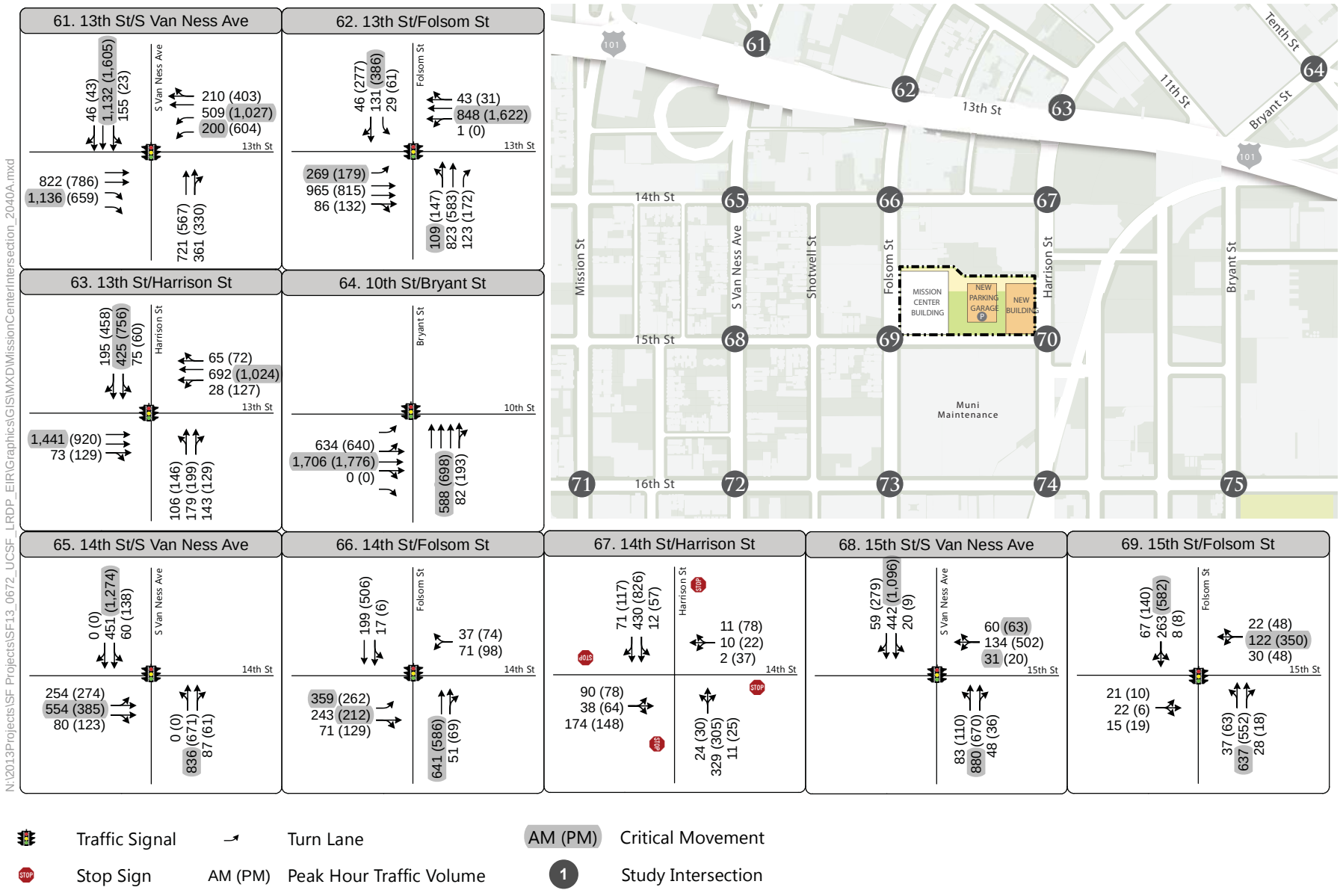

Figure 5-5A

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes-Mission Center

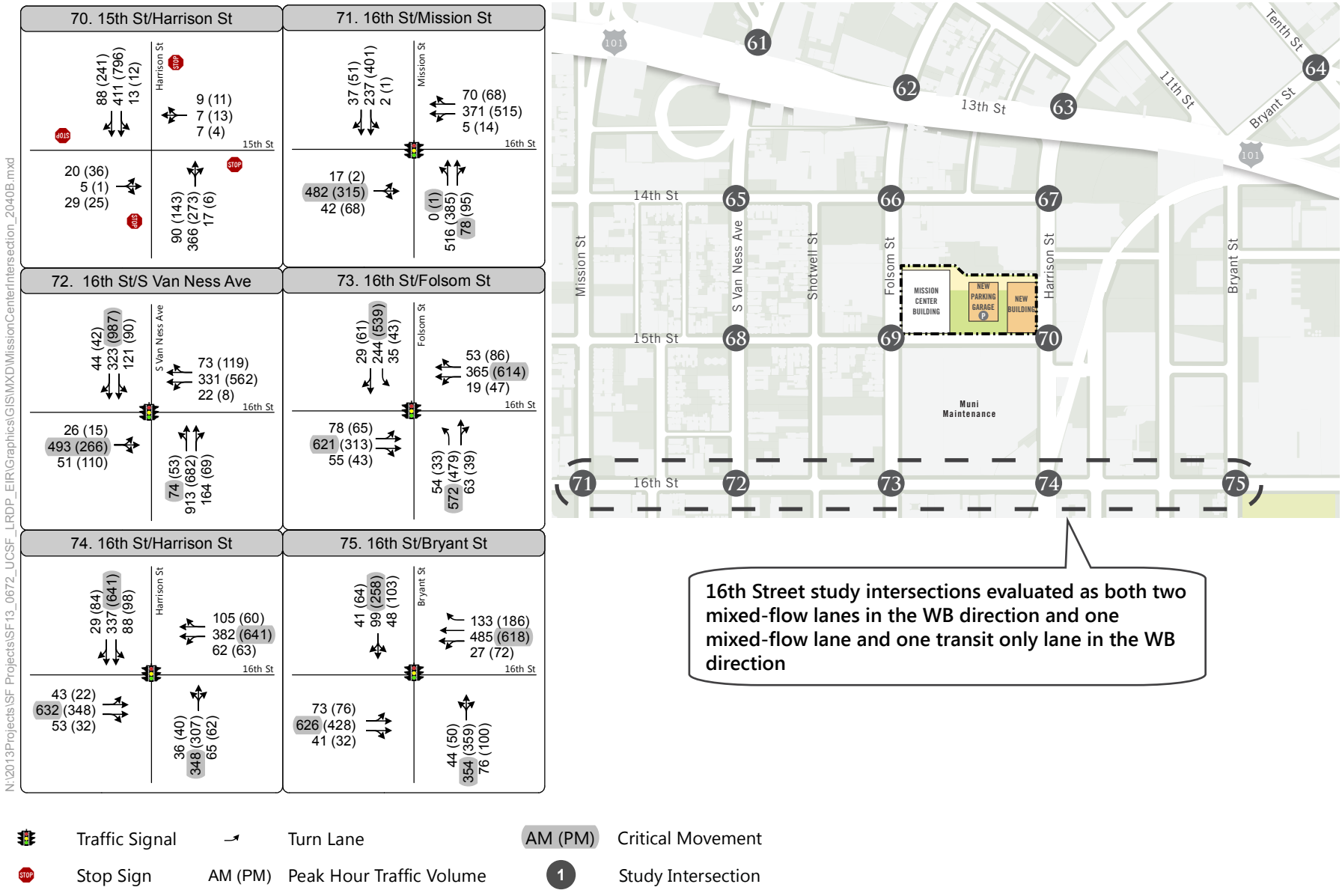

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Figure 5-5B

Cumulative (2040) Intersection Lane Configurations, Traffic Control, and Volumes- Mission Center

TABLE 5-6: PEAK HOUR INTERSECTION LEVEL OF SERVICE COMPARISON - MISSION CENTER

Intersection	Traffic Control[1]	Peak Hour	Existing		Year 2040 Plus LRDP (Moderate Alternative)		Year 2040 Plus LRDP (Expanded Alternative)[5]	
			Veh. Del.[2]	LOS[3]	Veh. Del.[2]	LOS[3]	Veh. Del.[2]	LOS[3]
61. 13th Street / South Van Ness Avenue	Signal	AM PM	**71** 30	**E** C	**>80** **63**	**F** **E**		
62. 13th Street / Folsom Street	Signal	AM PM	26 29	C C	34 **>80**	C **F**		
63. 13th Street / Harrison Street	Signal	AM PM	16 19	B B	21 **72**	C **E**		
64. Tenth Street / Bryant Street	Signal	AM PM	14 16	B B	15 18	B B		
65. 14th Street / South Van Ness Avenue	Signal	AM PM	15 16	B B	25 **76**	C **E**		
66. 14th Street / Folsom Street	Signal	AM PM	16 15	B B	17 16	B B		
67. 14th Street / Harrison Street	AWS	AM PM	11 / 12 20 / 24	B / B C / C	14 / 16 **39 />50**	B / C **E / F**	14 / 16 **39 />50**	B / C **E / F**
68. 15th Street / South Van Ness Avenue	Signal	AM PM	15 18	B B	22 **69**	C **E**		
69. 15th Street / Folsom Street	Signal	AM PM	12 29	B C	13 52	B D		
70. 15th Street / Harrison Street	AWS	AM PM	10 / 12 14 / 15	B / B B / C	13 / 16 21 / 23	B / C C / C	13 / 16 21 / 23	B / C C / C
71. 16th Street / Mission Street	Signal	AM PM	26 16	C B	30 15	C B	35 33	C C
72. 16th Street / South Van Ness Avenue	Signal	AM PM	37 20	D B	46 34	D C	49 **>80**	D **F**
73. 16th Street / Folsom Street	Signal	AM PM	38 28	D C	43 42	D D	45 **>80**	D **F**
74. 16th Street / Harrison Street	Signal	AM PM	21 30	C C	37 46	D D	40 **>80**	D **F**)
75. 16th Street / Bryant Street	Signal	AM PM	20 35	C D	28 50	C D	36 **>80**	D **F**

Notes:

1. AWS = All-way stop controlled; SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For SSS intersections, the highest average delay for an approach is reported. For AWS intersection, the combined weighted average delay of the intersection is reported, followed by the highest average delay for an approach.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For an unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. **Bold** indicates LOS E or F operations
5. Intersections with grayed cells in the Expanded Alternative columns operate at the same delay and LOS as in the Moderate Alternative columns.

Source: Fehr & Peers, 2014.

The 13th Street/South Van Ness Avenue (Intersection #61) signalized intersection operates at LOS F in the AM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical southbound through movement operates at LOS F during the AM peak. The LRDP would add 14 vehicle trips to the critical southbound through movement, which represents a one percent increase from Year 2040 conditions. While the southbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movements at the intersection – eastbound right turn and westbound left turn – are not expected to receive an increase in vehicular traffic due to the LRDP. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The 13th Street/South Van Ness Avenue (Intersection #61) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical southbound through movement operates at LOS E during the PM peak. The LRDP would add one vehicle trip to the critical southbound through movement, which represents a less than one percent increase from Year 2040 conditions. While the southbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – westbound through – is not expected to receive an increase in vehicular traffic due to the LRDP. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The 13th Street/Folsom Street (Intersection #62) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical southbound through movement operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the critical southbound through movement. While the southbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movements at the intersection – eastbound left turn and westbound through – both operate at LOS F during the PM peak. The LRDP would add no vehicle trips to the eastbound left turn and 12 vehicle trips to the westbound through, which represents an increase of less than one percent. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The 13th Street/Harrison Street (Intersection #63) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical southbound through movement operates at LOS F during the PM peak. The LRDP would add one vehicle trip to the critical southbound through movement, which represents an increase of less than one percent from Year 2040 conditions. While the southbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – westbound through – operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the westbound through. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The 14th Street/South Van Ness Avenue (Intersection #65) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical southbound through movement operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the critical southbound through movement. While the southbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – eastbound through – operates

at LOS F during the PM peak. The LRDP would add no vehicle trips to the eastbound through. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The 14th Street/Harrison Street (Intersection #67) unsignalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The LRDP would add a total of 55 vehicle trips to the intersection, which represents a three percent increase from Year 2040 conditions. Therefore, the LRDP's contribution would not be considered significant. While the increase in traffic does warrant a signal according to the Caltrans signal warrant for unsignalized intersections in urban areas (Warrant 3), the LRDP's impact at this intersection would be considered ***less than significant***.

The 15th Street/South Van Ness Avenue (Intersection #68) signalized intersection operates at LOS E in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Moderate and Expanded Alternatives. The critical westbound right turn movement operates at LOS F during the PM peak. Since the westbound right is a shared movement with the westbound through and left turn movements, the LRDP's contributions to all three movements were summed to determine the total LRDP contribution to the westbound approach. The LRDP would add a total of 10 vehicle trips to the westbound approach, which represents an increase of two percent from Year 2040 conditions. Therefore, the LRDP's contribution to the approach would not be considered significant. The other critical movement at the intersection – southbound through – operates at LOS D during the PM peak, so the LRDP's contribution would not be significant. Therefore, the LRDP's impact at this intersection would be considered ***less than significant***.

The 16th Street/South Van Ness Avenue (Intersection #72) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical southbound through movement operates at LOS F during the PM peak. The LRDP would add two vehicle trips to the critical southbound through movement, which represents a less than one percent increase from Year 2040 conditions. While the southbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – westbound through – operates at LOS F during the PM peak. The LRDP would add ten vehicle trips to the westbound through movement, which represents an increase of two percent from Year 2040 conditions. While the westbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***less than significant***.

The 16th Street/Folsom Street (Intersection #73) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical southbound through movement operates at LOS F during the PM peak. The LRDP would add four vehicle trips to the critical southbound through movement, which represents a less than one percent increase from Year 2040 conditions. While the southbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – westbound through – operates at LOS F during the PM peak. The LRDP would add two vehicle trips to the westbound through movement, which represents an increase of less than one percent from Year 2040 conditions. While the westbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***less than significant***.

The 16th Street/Harrison Street (Intersection #74) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical northbound through movement operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the critical northbound through movement. Therefore, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – westbound through – operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the westbound through movement. Therefore, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***less than significant***.

The 16th Street/Bryant Street (Intersection #75) signalized intersection operates at LOS F in the PM peak hour under Year 2040 Plus LRDP conditions with the TEP Expanded Alternative. The critical westbound through movement operates at LOS F during the PM peak. The LRDP would add two vehicle trips to the critical westbound through movement. While the westbound through movement is expected to operate at LOS F under Year 2040 Plus LRDP conditions, the LRDP's contribution would not be considered significant. The other critical movement at the intersection – northbound through – operates at LOS F during the PM peak. The LRDP would add no vehicle trips to the northbound through movement. Therefore, the LRDP's contribution would not be considered significant. Therefore, the LRDP's impact at this intersection with the TEP Expanded Alternative proposal for 16th Street would be considered ***less than significant***.

Although the LRDP is not projected to cause any new significant impacts to traffic circulation at the Mission Center Campus Site, the improvement measure below could be implemented to lessen the effect of SOV vehicles in the project vicinity.

Improvement Measure IM-TR-5c: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips to the Mission Center Campus Site

- UCSF shall continue to investigate and implement TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

5.3 YEAR 2040 TRANSIT IMPACTS

This section presents a discussion of transit conditions in Year 2040 for each of the four campus sites. LRDP-generated transit trips under Year 2040 conditions are presented Section 3.6 and Section 4.3 describes the estimated peak hour transit trip assignments.

5.3.1 SF Muni

As described in Section 5.1.3, the TEP is estimated to be fully implemented by Year 2040. The TEP will improve Muni's reliability, reduce travel times and provide frequent service. Descriptions of TEP improvements that relate to each campus site are included in Chapter 2.

There is an anticipated increase in background Muni riders between Existing Plus Project and Year 2040 Conditions at all four campus sites. Future transit improvements including the TEP, Geary BRT, and Central Subway project would increase transit capacity to the four campus sites in anticipation of this background growth. While there would be a general increase in ridership that is expected through the Year 2040, the LRDP would not create excess demand for public transit that would require the development or expansion of mass transit facilities, the development of which would cause significant environmental impacts.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP or LRDP Variant, would continue to do so in particular at the four UCSF campus sites where development is proposed. As the campus sites develop, UCSF would monitor vehicle traffic conditions, transit operations, and shuttle ridership within and surrounding the campus sites. This monitoring program would be informed by the annual UCSF Employee Transportation Survey, the existing UCSF shuttle program monitoring[17], UCSF staff, students, and patients and visitors, and campus site observations by Transportation Services staff, and ongoing coordination with SFMTA staff.

The results of the various monitoring efforts would be used to inform when and whether UCSF would:

- Implement additional TDM strategies that seek to minimize the number of single occupancy vehicle trips (SOV) generated by the LRDP;
- Revise UCSF Shuttle system operations; and/or
- Introduce or enhance campus-wide or specific measures to reduce conflicts with Muni service.

Should the need for additional shuttle service be triggered by increased ridership due to shifts in travel mode or demand generated by the 2014 LRDP or LRDP Variant, UCSF Transportation Services would first review that the additional service would not negatively affect Muni operations. Once implemented, the additional service would be monitored to the same standard as that identified above. Further, should conflicts between shuttle service and Muni service arise, UCSF Transportation Services would coordinate with SFMTA staff to resolve these conflicts and ensure UCSF shuttles do not negatively affect Muni operations.

As described in Chapter 2, the SFMTA plans to add new transit vehicles to increase capacity on many Muni routes that serve the four UCSF campus sites. These improvements are designed to increase service reliability and accommodate a forecasted increase in transit ridership due to projected development throughout San Francisco. These additional transit vehicles would require expanded storage and maintenance facilities to accommodate the fleet growth. The SFMTA conducted a needs assessment study[18] in 2013 to review the existing facilities and determine what facilities would be required to accommodate this projected growth. This study determined that many of the Muni's storage,

[17] UCSF monitors its shuttle ridership demand by conducting monthly audits to capture boarding data, and the data is used to continually adjust shuttle operations to meet peak ridership demand. The monthly audits are conducted for one entire week (five business days) on all routes, throughout the entire day. In addition, UCSF conducts an annual UCSF Transportation Survey that is distributed to all members of our community. The data is used to measure and benchmark the efficacy of the existing TDM programs, and assist in designing new programs.

[18] *The SFMTA's Real Estate and Facilities Vision for the 21st Century* (SFMTA and Parsons Brinckerhoff, January 2013).The environmental review for this study is expected to begin in the second half of 2014.

maintenance, and operations facilities are at maximum capacity and not seismically safe and therefore Muni will need to upgrade existing facilities and build new facilities to accommodate the anticipated fleet growth. While the 2014 LRDP and LRDP Variant would increase ridership on the Muni routes serving the four campus sites, this increase in ridership would not exceed the existing or planned capacity of routes serving the campus. As described in Section 1.2.6, UCSF Transportation Services performs monthly auditing. Should they find that public transit to and from UCSF campuses does not meet demand, they will adjust shuttle operations (which may include providing additional shuttle service) where necessary to meet demand, Therefore, the 2014 LRDP or LRDP Variant would not require the expansion or replacement of public transit facilities. For the above reasons, the 2014 LRDP or LRDP Variant, in combination with past, present and reasonably foreseeable development in San Francisco, would have ***less than significant*** Year 2040 SF Muni transit impacts.

5.3.2 Regional Transit Service

UCSF staff, patrons and students are anticipated to continue to use BART, AC Transit, Caltrain, SamTrans, and Golden Gate Transit for regional transit service through Year 2040. Regional service stations are likely to remain at existing locations, over half a mile away, and can be accessed by other transit modes such as SF Muni and the UCSF shuttle.

As presented in Chapter 2, Caltrain is proposing to implement a Modernization Program that will electrify the railway to provide upgraded performance and allow more efficient operations and a higher capacity. It is assumed that in the cumulative transit scenario that this program has been implemented. There are currently 10 trains per hour during peak periods and the Modernization Program will allow the number of trains to increase to 12 trains per hour. Additionally, Caltrain is anticipating a "blended system" which will see California High Speed Rail trains running alongside Caltrain on the same tracks. Electrification of Caltrain (and the associated improved travel times and frequencies) as well as the introduction of High Speed Rail may improve transit access for the Mission Bay campus site.

While there would be a general increase in regional transit ridership that is expected through the Year 2040, the 2014 LRDP or LRDP Variant would not create excess demand for public transit that would require the development or expansion of mass transit facilities, the development of which would cause significant environmental impacts. For the above reasons, the 2014 LRDP or LRDP Variant, in combination with past, present and reasonably foreseeable development in San Francisco, would have ***less than significant*** Year 2040 regional transit service impacts.

5.3.3 UCSF Shuttle Service

UCSF shuttle service operations, as summarized in Chapter, 2 will continue to serve the four campus sites through Year 2040. As the 2014 LRDP or LRDP Variant moves forward, additional shuttle stops will likely be constructed fronting the new facilities depending on future shuttle ridership demand. The 2014 LRDP or LRDP Variant do not propose specific changes to shuttle service headways, although UCSF Transportation Services regularly monitors system wide shuttle ridership and may change headways or routes based on shifting demand as LRDP projects are constructed and occupied at each respective campus site.

The *UCSF Shuttle Operations Study Final Report*[19] analyzed cumulative demand on the shuttle program. Population growth projections were made for the cumulative year and population group mode splits, by campus site, and trip rates were used to calculate the number of new daily shuttle trips created by new populations on a campus-by-campus basis. Shuttle growth projections per line were calculated based upon the proportionate increases in population at campuses served by each line. The analysis found that four lines would experience ridership growth of more than ten percent (Gold: 50 percent, Blue: 50 percent, Grey: 45 percent, and Red: 35 percent (all figures approx.)). Recommendations for increasing the capacity of these four lines to adequately address these cumulative demand increases were included in the report. These recommendations include increasing peak period shuttle capacity by introducing additional vehicles and reassigning different capacity vehicles to specific lines.

As described in Section 1.2.6, UCSF Transportation Services monitor shuttle performance through a monthly auditing process and implement operational adjustments (which may include additional service) where necessary to meet demand. Therefore, the 2014 LRDP or LRDP Variant would not create excess demand for transit that would require the development or expansion of mass transit facilities. Either of these findings would cause significant environmental impacts. Thus, peak hour Year 2040 UCSF shuttle trips would result in a ***less-than-significant impact***.

5.4 YEAR 2040 PEDESTRIAN IMPACTS

Pedestrian circulation impacts by their nature are site-specific and generally do not contribute to impacts from other development projects. As indicated in Section 4.4, the 2014 LRDP or LRDP Variant would not result in overcrowding of sidewalks or create new potentially hazardous conditions for pedestrians under existing conditions.

While the neighborhoods surrounding the Parnassus Heights, Mount Zion, and Mission Center campus sites are unlikely to change dramatically in the future, the Mission Bay campus site is in the middle of a fast growing new neighborhood that will include many new residential, office, and entertainment land uses in the future. Future land uses associated with the Mission Bay Development Plan, Eastern Neighborhoods Community Plan, and the proposed Warriors arena will change the character surrounding the Mission Bay campus site to a dense urban environment. As developments are proposed, improved sidewalks and pedestrian facilities would be required for new developments to accommodate growth in pedestrian trips in the surrounding neighborhood.

For all four campus sites, pedestrian trips throughout the City may increase under the Year 2040 scenario due to general growth. Existing and proposed pedestrian facilities at each of the campus sites are designed to facilitate safe and easy pedestrian paths of travel. Walk trips may increase between the completion of the LRDP and the Year 2040 conditions due to increasing effectiveness of TDM measures in reducing vehicle trips. Because transit users would walk between the transit stops and the four campus sites, TDM measures such as promoting effective use of transit could over time increase the number of pedestrians accessing the four campus sites from surrounding neighborhoods.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP or LRDP Variant,

[19] Nelson\Nygaard. 2014. Shuttle Operations Study Final Report, January, 2014

would continue to do so in particular at the four UCSF campus sites where development is proposed. As the campus sites develop, UCSF will continue to monitor pedestrian conditions to ensure increased pedestrian volumes due to the 2014 LRDP or LRDP Variant do not cause overcrowding of sidewalks under the Year 2040 Conditions. This monitoring program would be informed by the annual UCSF Employee Transportation Survey, the existing UCSF shuttle program monitoring, UCSF staff, students, and patients and visitors, and campus site observations by Transportation Services staff, and ongoing coordination with SFMTA staff.

There is an anticipated increase in background automobile traffic between Existing Plus Project and Year 2040 Conditions at all four campus sites, as shown in the Year 2040 traffic forecasts. This will result in an increase in automobile-pedestrian conflicts at intersections and driveways in the study area. While there would be a general increase in vehicle traffic that is expected through the future scenario, UCSF would continue to monitor pedestrian conditions to ensure the LRDP would not create substantial conflicts between pedestrians and autos, bicyclists, or transit vehicles. For the above reasons, the 2014 LRDP or LRDP Variant, in combination with past, present and reasonably foreseeable development in San Francisco, would have ***less than significant*** Year 2040 pedestrian impacts.

5.5 YEAR 2040 BICYCLE IMPACTS

Bicycle circulation and facility impacts by their nature are site-specific and generally do not contribute to impacts from other development projects. Similar to the pedestrian conditions, bicycling conditions would change the most surrounding the Mission Bay campus site as it is in the middle of a fast growing new neighborhood. As developments are proposed, improved bicycle facilities would be required for new developments to accommodate growth in bicycle trips in the surrounding neighborhood. For all four campus sites, bicycle trips throughout the City may increase under the Year 2040 scenario due to general growth.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP or LRDP Variant, would continue to do so in particular at the four UCSF campus sites where development is proposed. As the campus sites develop, UCSF will continue to monitor bicycle conditions and improve facilities if needed to ensure the growth due to the 2014 LRDP or LRDP Variant remains compatible with bicycling to prevent overcrowding of bicycle facilities (bicycle routes). In addition, UCSF will monitor bicycle parking to ensure the supply accommodates future demand at the four campus sites.

This monitoring program would be informed by the annual UCSF Employee Transportation Survey, the existing UCSF shuttle program monitoring, UCSF staff, students, and patients and visitors, and campus site observations by Transportation Services staff, and ongoing coordination with SFMTA staff.

There is an anticipated increase in background automobile traffic between Existing Plus Project and Year 2040 Conditions at all four campus sites, as shown in the Year 2040 traffic forecasts. This will result in an increase in automobile-bicycle conflicts at intersections and driveways in the study area. While there would be a general increase in vehicle traffic that is expected through the future Year 2040 scenario, UCSF would continue to monitor bicycle conditions to ensure the LRDP would not create substantial conflicts between bicyclists and autos, pedestrians, or transit vehicles. For the above reasons, the 2014 LRDP or LRDP Variant, in combination with past, present and reasonably foreseeable development in San Francisco, would have ***less than significant*** Year 2040 bicycle impacts.

5.6 YEAR 2040 LOADING IMPACTS

Loading impacts, similar to pedestrian and bicycle impacts, are by their nature localized and site-specific, and would not contribute to impacts from other development projects near the four campus sites. Parnassus Heights, Mount Zion and Mission Center campus sites will likely experience little to no change in loading activity in the Year 2040 since the uses that make up the campus sites are generally the same. The development of the Mission Bay campus site should result in a further shift in the land uses surrounding the campus site from a neighborhood whose primary land uses are residential, warehousing, and light industrial neighborhood to a mixed-use neighborhood. This would likely result in a decrease in vehicle loading activities associated with warehouses and production and an increase in passenger loading and residential or commercial delivery services. Providing adequate loading facilities for the 2014 LRDP or LRDP Variant as described in **Section 4.6.** would ensure that future changes to loading activity adjacent to the campus sites would not create potential loading conflicts under Year 2040 Conditions.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP or LRDP Variant, would continue to do so in particular at the four UCSF campus sites where development is proposed. As the campus sites develop, UCSF will continue to monitor loading conditions to ensure they are sufficient to accommodate the 2014 LRDP or LRDP Variant loading demand and do not create potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians. This monitoring program would be informed by the annual UCSF Employee Transportation Survey, the existing UCSF shuttle program monitoring, UCSF staff, students, and patients and visitors, and campus site observations by Transportation Services staff, and ongoing coordination with SFMTA staff.

There is an anticipated increase in background automobile traffic between Existing Plus Project and Year 2040 Conditions at all four campus sites, as shown in the Year 2040 traffic forecasts. This will result in an increase in loading conflicts at intersections and driveways in the campus sites. While there would be a general increase in vehicle traffic that is expected through the future Year 2040 scenario, the 2014 LRDP or LRDP Variant would not create potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians, or otherwise interfere with loading access to the campus sites and adjoining areas. For the above reasons, the 2014 LRDP or LRDP Variant, in combination with past, present and reasonably foreseeable development in San Francisco, would have ***less-than-significant*** Year 2040 loading impacts.

5.7 YEAR 2040 PARKING IMPACTS

While the neighborhoods surrounding the Parnassus Heights, Mount Zion, and Mission Center campus sites are unlikely to change dramatically in the future, the Mission Bay campus site is in the middle of a fast growing new neighborhood that will include many new residential, office, and entertainment land uses in the future. Future land uses associated with the Mission Bay Development Plan, Eastern Neighborhoods Community Plan, and the proposed Warriors arena will change the character surrounding the Mission Bay campus site to a dense urban environment.

As described in Section 1.2.6, as a matter of course in managing campus operations, UCSF monitors transportation conditions at all campus sites, and, in relation to the proposed 2014 LRDP or LRDP Variant,

would continue to do so in particular at the four UCSF campus sites where development is proposed. As developments are proposed, UCSF would UCSF would monitor parking demand at each phase of development and adjust parking supply as demand warrants. Parking facilities would be required for new developments to accommodate growth in parking demand in the surrounding neighborhood. Improvements to the transit network as described in Chapter 2 and off-street parking for the new developments would ensure that future changes to parking demand adjacent to the campus sites would not exceed the parking supply under Year 2040 Conditions. Should the demand for parking exceed on-site supply, priority for on-site parking would be given to patients and visitors and essential health-care providers at the major clinical sites, and if necessary, UCSF would look to secure off-site parking to satisfy demand. That additional parking supply could be provided on campus sites, if available, or elsewhere in the vicinity. As the sites develop, UCSF (through its Campus Transportation Services Offices) will make efforts to educate faculty, staff, and students about transit options in order to reduce auto usage and parking demand. Thus, the parking impacts under 2014 LRDP or LRDP Variant build-out would be ***less than significant***.

5.8 YEAR 2040 CONSTRUCTION IMPACTS

Construction impacts are localized and site-specific, and would not contribute to impacts from other development projects near the four campus sites. The assessment of construction activity at each campus site may change between the completion of the 2014 LRDP or LRDP Variant and the Year 2040 scenario due to additional non-LRDP projects on the campus sites and the surrounding area and due to timing of implementation of all aspects of the LRDP. Year 2040 impacts of nearby construction projects should not be considered as the construction would be temporary and the project sponsor would coordinate with various City departments such as SFMTA and DPW through the TASC to develop coordinated plans that would address construction-related issues. For the above reasons, the 2014 LRDP or LRDP Variant, in combination with past, present and reasonably foreseeable development in San Francisco, would have ***less than significant*** Year 2040 construction impacts.

6 SUMMARY OF TRANSPORTATION MITIGATION AND IMPROVEMENT MEASURES

This chapter presents the transportation mitigation measures that would be required to reduce the significant impacts of the LRDP. In some cases, no significant impact was identified; however, an improvement measure was noted that would improve conditions. These mitigation and improvement measures were developed for the Existing plus Project and Year 2040 conditions, as appropriate.

6.1 MITIGATION MEASURES

Mitigation Measure TR-1a: Construction Coordination and Monitoring Measures

Traffic Control Plan for Construction – In order to reduce potential conflicts between construction activities and pedestrians, transit and autos during construction activities at the Parnassus Heights campus site, UCSF shall require construction contractor(s) to prepare a traffic control plan for major phases of project construction (e.g. demolition, construction, or renovation of individual buildings). UCSF and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (e.g. Parnassus Avenue) and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction of the LRDP projects. For any work within the public right-of-way, the contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic.

In the event that the construction timeframes of the major phases and other development projects adjacent to UCSF overlap, UCSF should coordinate with City Agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. UCSF, in conjunction with the adjacent developer, shall propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as staggering start and end times, coordinated material drop offs, collective worker parking and transit to job site and other measures.

Reduce SOV Mode Share for Construction Workers – In order to minimize parking demand and vehicle trips associated with construction workers, UCSF shall require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the campus sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – In order to minimize construction impacts on access for nearby residences, institutions, and businesses, UCSF shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

Mitigation Measures TR-1b through 2e would result in similar findings for the remaining significant construction impacts at the Mission Bay, Mount Zion, and Mission Center campus sites.

Mitigation Measure TR-2a: Implement the Moderate Alternative of the TEP 16th Street Proposal

Two mixed-flow travel lanes in each direction would be required to improve operations at 16th Street/Fourth Street to acceptable levels of service in the AM peak hour. As such, this mitigation measure would require that the Moderate Alternative of the TEP 16th Street proposal be implemented in order to maintain the requisite traffic carrying capacity of 16th Street for the forecasted traffic demand with the LRDP in place. The implementation of this measure would improve traffic operations from LOS E to LOS D in the AM peak hour and reduce the impacts to less-than-significant levels. The implementation of this mitigation measure will require further study and coordination with other agencies for approval and is outside the jurisdiction of UCSF. Therefore, this impact is considered ***significant and unavoidable***.

Mitigation Measures TR-2b through 2d would result in similar findings for the remaining significant intersection impacts at the Mission Bay Campus Site.

Mitigation Measure TR-3a: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips

- UCSF shall continue to investigate TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

- UCSF will monitor traffic conditions within and immediately surrounding the Mission Bay Campus Site as presented in Section 1.2.6. Should traffic conditions approach unacceptable levels, (LOS E or F), and should UCSF's contribution to this cumulative impact be significant, UCSF shall implement additional TDM strategies that it investigates (beyond those identified in its existing TDM program presented in **Table 2-1** and beyond those proposed in the 2014 LRDP) and finds could reasonably result in a reduction in SOV trips. The additional TDM strategies shall target a reduction in SOV trips by encouraging persons to select other modes of transportation, including: walking, bicycling, transit, car-share, carpooling, and/or to travel during non-peak periods.

The implementation of this mitigation measure would improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. Therefore, any combination of or increase in expenditure to TDM strategies at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

Mitigation Measures TR-3b through 3d and TR-3h would result in similar findings for the remaining significant intersection impacts at the Mission Bay Campus Site.

The implementation of this Mitigation Measures TR-3e through TR-3g and the inclusion of the additional TDM strategies presented in Section 1.2.5 would improve traffic operations surrounding and within the Mission Bay campus site. The TDM strategies presented in Section 1.2.5 were recently proposed by UCSF and hence were not assumed in the travel demand calculations presented in Chapter 3. These TDM strategies would reduce SOV trips by approximately three percent, which would represent a three percent reduction in the overall vehicle trips generated by the campus site. The implementation of this measure by UCSF and the associated reduction in vehicle trips to the Mission Bay campus site would improve traffic operations at 16th Street/Seventh Street (Moderate Alternative) and Mariposa Street/Third Street (Moderate and Expanded Alternatives) from LOS E to LOS D in the AM peak hour and reduce these impacts to ***less-than-significant*** levels.

Mitigation Measure TR-4a: Manage Parking Supply

UCSF will continue to monitor the parking supply at the Mission Bay Campus Site so as not to oversupply parking at this campus site. As presented in Section 4.7, the currently there is a downward trend in parking supply at the Mission Bay Campus Site as it is expected to grow at a lower rate than total population. Monitoring and reducing the future parking supply per person at the Mission Bay Campus Site would improve traffic operations along 16th Street by reducing SOV trips to and from the Mission Bay Campus Site. However, similar to Mitigation Measure TR-3a, any combination of reduced parking at the Mission Bay Campus Site could not reduce vehicular trips by the 90 to 95 percent that would be required to sufficiently lessen the impacts identified along 16th Street under the TEP Expanded Alternative. Therefore, even with the implementation of this mitigation measure, this impact would still be considered ***significant and unavoidable***.

Mitigation Measures TR-4b through 4d would result in similar findings for the remaining significant intersection impacts at the Mission Bay Campus Site.

6.2 IMPROVEMENT MEASURES

Improvement Measure IM-TR-1: Study and Implement Uses to Minimize Transit Trips on the Muni T Third Street Line

- Development of clinical uses on Blocks 33/34 is considered a "secondary use" under the Mission Bay South Redevelopment Plan, which requires findings by the Office of Community Investment and Infrastructure that the use is consistent with the Mission Bay South Redevelopment Plan. UCSF would continue to study the amount of clinical space proposed under the LRDP Variant, and would refine the proposal before bringing it forth to the City for approval. In refining the LRDP Variant, UCSF would consider reducing the size of the clinical facilities at Blocks 33/34 to a level that will reduce the transit ridership on the T Third Street to less than the Muni's capacity utilization of 85 percent.

Improvement Measure TR-2: Add Curbside Loading Zone on Folsom Street

UCSF could work with the SFMTA to add a curbside loading zone on Folsom Street, adjacent to the existing Mission Center building. A 50 foot loading zone would require the removal of approximately two parking spaces on Folsom Street. This loading zone will improve conditions for bicyclists whom may have their path currently blocked due to vehicles loading in the northbound bicycle lane.

Improvement Measure IM-TR-3: Implement High-Visibility Bicycle Lanes on Harrison Street

UCSF could work with the SFMTA to implement measures to increase the visibility of southbound bicyclists for vehicles entering the Mission Center campus site from Harrison Street. This could include implement high-visibility green skip striping across the conflict zone in front of the Mission Center campus site driveway along Harrison Street.

Improvement Measure IM-TR-4: Add Passenger Loading to Scott Street

UCSF could work with the SFMTA to add a curbside passenger loading zone on Scott Street. An additional 50 foot loading zone would require the removal of approximately two metered parking spaces on Scott Street. This loading zone will reduce overflow for passenger loading on Scott Street.

Improvement Measure IM-TR-5a: Implement Additional TDM Strategies to Reduce Single Occupancy Vehicle Trips to the Parnassus Heights Campus Site

- UCSF shall continue to investigate and implement TDM measures targeted at reducing SOV trips. Although UCSF has already identified those TDM measures it can feasibly implement and has included those measures as part of the proposed 2014 LRDP, more measures may be developed or become evident over the 20 year-horizon of the LRDP.

Improvement Measures IM-TR-5b and 5c would result in similar findings at the Mount Zion and Mission Center Campus Sites.

APPENDICES

Appendix A: Approved Scope of Work

Appendix B: Roadway Network Classifications (From SF General Plan)

Appendix C: Intersection Level of Service Calculations

Appendix D: Traffic Volume and Intersection Turning Movement Counts

Appendix E: Analysis Assumptions

Appendix F: Travel Demand Calculations

APPENDIX A: APPROVED SCOPE OF WORK

University of California San Francisco:
Long-Range Development Plan Environmental Impact Report

Draft Transportation Scope of Work – July 10, 2013

This document presents the draft scope of work for the transportation component for the University of California San Francisco (UCSF) Long-Range Development Plan (LRDP) Environmental Impact Report (EIR). Fehr & Peers and Adavant Consulting, collectively the "transportation team," will complete stand-alone transportation impact studies that include technical analysis to support the environmental documentation being prepared for the LRDP for the Parnassus Heights, Mount Zion, Mission Bay, and Mission Center campus sites, as well as San Francisco General Hospital. As noted in the RFP, long-term changes at the University's Laurel Heights Campus are being considered separately from the LRDP at this time; therefore, this scope of work excludes transportation planning work on the Laurel Heights site.

Task 1 – Project Scoping and Coordination

Although not required, UCSF has traditionally provided the City of San Francisco Planning Department the opportunity to review and comment on proposed transportation analysis work scopes. Thus, prior to beginning work on this study, we will work with UCSF Campus Planning staff and City staff to refine our scope of work. We anticipate that this will include providing the Environmental Planning ("EP") Section of the Planning Department a chance to review this proposed scope of work, as well communicating with the San Francisco Municipal Transportation Agency ("SFMTA") and the Successor Agency to the San Francisco Redevelopment Authority (for Mission Bay). This initial collaboration will help minimize potential issues which might arise during later phases of the analysis and the Draft EIR public comment period, such as methodology, assumptions and data collection needs. Comments received during this task will be included in a revised scope of work provided to UCSF and the EIR team. The discussion will focus on items such as:

- Additional data collection (locations, time periods, type of data, adequacy of data, etc.);
- Review of assumptions (study area, land use types, cumulative growth, etc.);
- Methodology (LOS methodology, trip generation methodology and appropriate sources, travel forecasts, etc.); and
- Deliverables (report organization, draft reports, final report).

The transportation team anticipates the need to regularly meet with and discuss the status and issues of the LRDP EIR over the course of the study. This scope of work assumes that this will involve one study team meeting with UCSF staff every two weeks, the EIR team, and local agency staff and stakeholders.

As part of this coordination, the transportation team will confirm the description of the proposed LRDP development plans. The team will include a comparison to the existing uses on the campuses in the Project Description section of the transportation impact study. This section will include a brief description of each of the proposed development plans, including location, type of land uses proposed, their size by population/user type, and proposed time frame for implementation. A map included in the report will indicate the location of the elements of the development plan in relation to the rest of the campus site, as well as other LRDP plans at other sites.

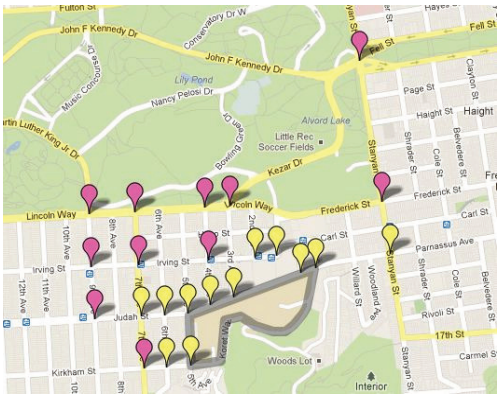
Task 2 – Data Collection

The transportation team has recently collected transportation data for areas around the Parnassus Heights Campus and Mission Bay sites. Additional data will be collected to supplement existing data for those sites, including new intersection turning movement counts and on-street parking occupancy surveys. New data will be collected around the Mission Center Building and Mount Zion sites. We propose to collect the following data:

Field Visit –

As part of the data collection task, the transportation team will visit each of the four campus sites to confirm existing transportation conditions and collect information about traffic and transit operations, bicycle and pedestrian activity, and parking and loading areas. For some of our work, institutional knowledge of key issues and constraints will make these observations more valuable. Therefore, as part of the data collection effort, the transportation team will coordinate with UCSF staff to conduct walking tours at each campus site. During these tours, the team will observe existing conditions, visit areas of concern, and identify potential constraints that should be considered in the analyses.

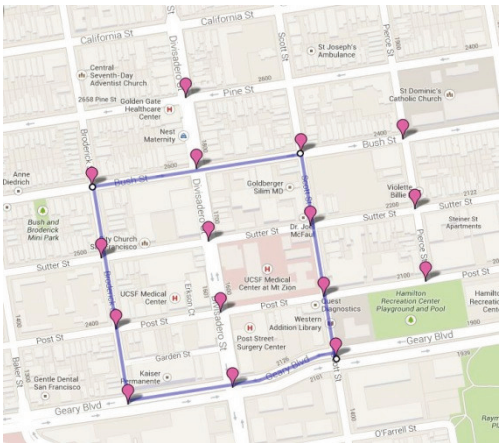
Traffic –



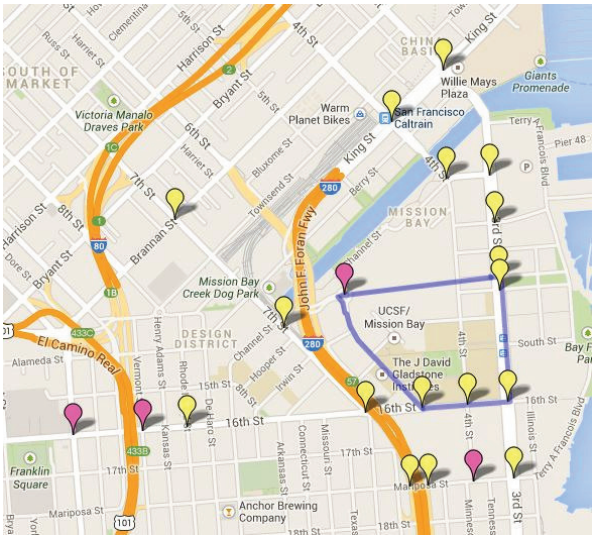
Parnassus Heights: This scope of work assumes that a total of 23 study intersections (see left and noted below) would be analyzed in the transportation impact study during the weekday AM and PM peak hour periods. Of these, 12 intersections (yellow) were evaluated as part of the UC Hall Options Study analysis, for which PM peak period counts were collected in 2011. New AM peak period counts will be collected at all study intersections and new PM peak period counts will be collected at the remaining 11 study intersections (violet).

1. 7th/Kirkham
2. 6th/Kirkham
3. 5th/Kirkham
4. 9th/Judah
5. 7th/Judah
6. 6th/Judah
7. 5th/Judah-Parnassus
8. 4th/Parnassus
9. 3rd/Parnassus
10. Hillway/Parnassus
11. Hill Point/Parnassus
12. Stanyan/Parnassus
13. 9th/Irving
14. 7th/Irving
15. 4th/Irving
16. 2nd/Irving
17. Arguello/Irving
18. 9th/Lincoln
19. 7th/Lincoln
20. 4th/Lincoln
21. 3rd-Frederick/Lincoln-Kezar
22. Stanyan/Frederick
23. Stanyan/Oak-Fell-Kezar

Mount Zion: This scope of work assumes that new weekday AM and PM peak period turning movement counts will be collected at 16 study intersections (see right and noted below).



1.	Broderick/Bush	9.	Divisadero/Geary
2.	Broderick/Sutter	10.	Scott/Sutter
3.	Broderick/Post	11.	Scott/Post
4.	Broderick/Geary	12.	Scott/Geary
5.	Divisadero/Pine	13.	Scott/Bush
6.	Divisadero/Bush	14.	Pierce/Bush
7.	Divisadero/Sutter	15.	Pierce/Sutter
8.	Divisadero/Post	16.	Pierce/Post

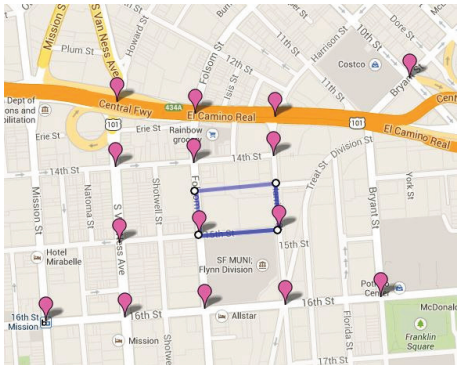


Mission Bay: This scope of work assumes that a total of 21 study intersections (see left and noted below) would be analyzed in the transportation impact study during the weekday AM and PM peak hour periods. New AM peak period counts will be collected at all study intersections and new PM peak period counts will be collected at four study intersections (violet)[1]; year 2012 PM peak period data for the remaining 17 intersections (yellow) will be available from the on-going work being performed by Adavant Consulting.[2]

1.	King/Third	8.	Mission Bay North/Third	15.	16th/Potrero
2.	King/Fourth	9.	Mission Bay South/Third	16.	16th/Rhode Island17. Mariposa/Third
3.	Channel/Third	10.	16th/Third		
4.	Channel/Fourth	11.	16th/Fourth	18.	Mariposa/Fourth
5.	Mission Rock/Third	12.	16th/Owens	19.	Mariposa/I-280 NB
6.	Mission Bay/Owens	13.	16th/Seventh	20.	Mariposa/I-280 SB
7.	Mission Bay/Seventh	14.	16th/Vermont	21.	Brannan/Seventh

[1] Counts at Mission Bay/Owens will be collected if the intersection is open at the time the counts are conducted.
[2] Counts have been collected in late 2011 and in 2012 and are believed to be still valid.

Mission Center: This scope of work assumes that new weekday AM and PM peak period turning movement count would be conducted at up to 15 study intersections (see right and noted below).



1.	S. Van Ness/Division	9.	Division/Harrison
2.	14th/S Van Ness	10.	14th/Harrison
3.	15th/S Van Ness	11.	15th/Harrison
4.	16th/S Van Ness	12.	16th/Harrison
5.	Division/Folsom	13.	Tenth/Bryant
6.	14th/Folsom	14.	16th/Bryant
7.	15th/Folsom	15.	16th/Mission
8.	16th/Folsom		

Transit –

The transportation team will compile local and regional public transit information on those lines providing service to the four campus sites, using already available data from the local and regional transit operators. The transit description will include the general hours of operation, approximate frequency of service, and major destinations served.

The transportation team will request and summarize UCSF shuttle origins and destinations, operational characteristics and ridership information as provided by UCSF Transportation staff.

Pedestrian/Bicycle –

The transportation team will collect the pedestrian counts during the midday period, and bicycle counts during the AM and PM peak periods.

Parnassus Heights: The transportation team assumes that pedestrian and bicycle counts conducted in 2007 and 2011 are sufficient for use in this analysis because conditions have not substantially changed.

Mission Bay: The transportation team will collect new pedestrian and bicycle counts at up to four intersections or sidewalk locations in or adjacent to the site.

Mount Zion and Mission Center: New pedestrian and bicycle counts will be collected at up to four locations at each site.

Parking –

The transportation team will collect new weekday midday and evening (10:00 AM to 2:00 PM; 6:00 to 8:00 PM) on-street parking occupancy surveys within approximately ¼ mile of each campus site:

Parnassus Heights: Parnassus Avenue, Stanyan Street, Waller Bicycle Learning Area-Kezar Drive, Lincoln Way, 10th Avenue, Kirkham Street

Mission Bay: Mariposa Street, 7th Street-Mississippi Street, Channel Street, Terry Francois Boulevard (Note: On-street parking is generally restricted on most streets within this area, making the amount of data to be collected smaller).

Mount Zion: California Street, Lyon Street-O'Farrell Street, Geary Blvd, Steiner Street

Mission Center: 17th Street, Mission Street, Bryant Street, 12th Street (Note: This data might already be available from the SFMTA, which will be confirmed as part of the initial study coordination.)

General information about current on-street parking regulations (time limits, neighborhood parking areas, meters, etc.) within the parking study area adjacent to each site will also be collected.

Utilization at public off-street parking lots and garages within the study area near the four sites will also be surveyed during the same time periods, as necessary to supplement existing data. Current information regarding hours of operation, and parking rates will also be gathered.

To fully assess the effect of the LRDP development proposals on each site- and/or neighborhood-wide conditions, the transportation team will also request on-campus parking garage usage data from UCSF staff. The team will use this information to document the relative effect that the LRDP will have to on-campus parking demand and supply, as well as affects to neighborhood parking conditions. This scope does not include parking turn-over or parking occupancy by vehicle type for spaces along Parnassus Avenue; however, the 2007 data can be updated as an optional task.

Loading –

The transportation team will confirm the existing loading space quantity, location, and type with staff and field review at each campus. These areas could be assessed during the campus site walking tours.

Construction –

The transportation team will request potential construction phasing information for elements of the LRDP development proposals, including duration, proposed construction management plans, worker parking plans, truck routing, etc.

Task 3 – Document Existing Conditions

The transportation team will document existing street traffic, circulation, parking, pedestrian, bicycle, and transit conditions in the vicinity of each campus site, including:

- A base map for each study area describing the street designations, street names, number of lanes, and traffic flow directions.
- Existing vehicular circulation conditions, especially relative to pedestrian and bicycle conditions
- Intersection level-of-service (LOS) conditions for the AM and PM peak hours, as determined by the 2000 Highway Capacity Manual Operations Methodology
- Figures indicating the AM and PM peak hour traffic volumes at the study intersections, including the critical lane groups (the lane groups that have the highest flow ratio for a given green signal phase)
- A map and discussion of existing public transit routes and stops, including capacity utilization for the transit lines providing access to each campus site
- A map and discussion of existing UCSF shuttle service, including operational activities, routes, and stops, hours of service, peak period headways, and type of vehicle shuttle
- A map and discussion of bicycle routes to/from each site and any changes to the bicycle network being proposed by the SF Bicycle Plan
- A discussion of pedestrian facilities on and near each campus site, with particular emphasis on pedestrian routes to transit stops
- Overall pedestrian and bicycle conditions at each campus site
- Detailed site plans where available as provided by UCSF to illustrate vehicular and pedestrian access locations and parking/loading facilities for specific buildings.
- A map and table presenting the off-street parking supply and midday and evening conditions
- A map and discussion of on-street parking conditions for midday and evening conditions
- A description of existing service loading operations, including the location and number of access points and loading spaces
- Description of existing TDM programs at each UCSF campus site

Task 4 – Determine Project Travel Demand

Subtask 4.1 Patient/Visitor Transportation Survey

As noted in the RFP, UCSF conducts regular transportation surveys of its faculty, staff and students to monitor its performance related to sustainability objectives and transportation demand management; however, the most recent comprehensive travel survey of the various campus sites that included patients and visitors was prepared in the 1990s. Since that time, UCSF and the transportation system with San Francisco have changed dramatically, including the construction of the Mission Bay site (as well as the Mission Bay neighborhood) and changes to Muni public transportation service throughout the City. This task includes the administration and documentation of a transportation survey to update this data.

Survey Development

Through coordination with UCSF, the transportation team will develop a patient/visitor transportation survey in order to collect information about travel patterns and behavior for each site. The survey will include a brief introduction providing a summary of the intent of the survey and encouraging participation. The transportation team will provide a draft survey to UCSF prior to its administration. We will incorporate one round of comments. The following questions could be included in the survey:

- Where do you live? (city, zip code, cross streets)
- How did you get here today? (auto, transit, bike, walk, etc.)
- If you drove today, where did you park? (on-street/off-street, distance)
- How much will you pay for parking?
- Where did you travel from before you came here? (home, work, school, other; location)
- Where will you be going afterwards? (home, work, school, other; location)
- What was the purpose of your visit to UCSF today? (patient, visit a patient, other)

Survey Distribution

We will conduct the survey on two consecutive weekdays (preferably a Tuesday/Wednesday at each campus site or Wednesday/Thursday) in order to get a representative sample of patients/visitors. We propose two survey delivery options:

Option 1: UCSF Distributes Survey

We prefer that UCSF distribute the surveys, which will reduce patient and visitor disruption and will likely result in a higher response rate. We will work with UCSF to select a representative selection of departments. Once the survey dates are selected, the chosen departments will hand out surveys to all patients and visitors when they check in. They will be told that the survey is voluntary but will be asked to return completed surveys to the receptionist. We expect a high response rate from this distribution method because patients will have time to fill out the survey as they wait for their appointment. Additionally, they will understand that UCSF supports the data collection effort.

To supplement the surveys distributed by UCSF, the transportation team will also set up several tables/kiosks at several locations within the surveyed campuses on the two survey dates and will provide information about the survey intent and will also distribute additional surveys.

Option 2: Transportation Team Conducts Entire Survey

A second option is that the transportation team could undertake is to conduct an intercept survey. This will involve placing surveyors at key locations on each campus site that would stop persons entering the facility and ask whether they are a patient or visitor. Patients and visitors would be asked to complete the survey on the spot before entering the facility. However, this has the potential to create more disruption to campus activities since patients and visitors would be delayed in getting to their appointments, potentially resulting in a higher refusal rate than with Option 1. Option 2 would require a higher budget than Option 1 due to additional labor hours required to administer the survey.

UCSF will provide estimates on the approximate total number of staff, patients and visitors seen during the survey days at each site as well as average annual patient and visitor rates. This information will be used to determine the survey response rate and develop the appropriate survey coefficients.

Survey Analysis

The transportation team will use the survey results to estimate the mode split of patients and visitors for each facility. This data will be used to monitor UCSF's performance related to sustainability objectives and transportation demand management goals. The information can also assist in obtaining a peak patient/visitor parking demand per facility and in trip generation and trip distribution estimates. The survey results will be compiled in a memorandum and provided to UCSF. We will incorporate one round of revisions to the memo.

Subtask 4.2 Travel Demand

The transportation team will estimate the total number of net new person- and vehicle-trips generated by the LRDP development proposals on a typical weekday and during the weekday AM and PM peak hours for each campus site. The travel demand will be based on the expected increase in campus population by type (i.e., faculty, staff, students, etc.) as provided by UCSF. Individual trip generation rates by population type will be taken from the data developed in Task 4.1, information presented in the UCSF's Journey-to-Campus data, LRDP Amendment #3 FEIR (2005), recent analyses for UCSF's Mission Bay Medical Center FEIR (2008), the UC Hall Options Study (2011), Osher Center FEIR (2005 and 2007), and Mount Zion Garage Project FEIR (2011).

Trip Distribution / Modal Split – The trip distribution and modal split allocations will be estimated for each population group based on previously developed factors used in other UCSF studies and the travel surveys conducted as a part of this scope of work. Average vehicle occupancy factors derived from the same sources will then be applied to the auto person-trips to calculate the vehicle-trips.

Parking/Commercial Loading Demand **–** Peak daily parking demand will be estimated by data collected in Tasks 2 and 4.1, individual peak factors by population type taken from the data presented in the LRDP Amendment #3 FEIR (2005), and most recently used in the analysis of UCSF's Mission Bay Medical Center FEIR (2008). Commercial loading demand will be based on campus specific data to be provided by UCSF for the proposed uses, and supplemented with the information presented the City's Transportation Impact Analysis Guidelines (2002).

As described in Task 8 – Documentation, the transportation team will prepare a technical memorandum describing the assumptions and methodology to be used to determine the travel demand at each of the campus sites. The technical memorandum will also summarize the travel demand estimates for patients, visitors and employees for each campus by land use type, mode of travel and place of origin. This will also be submitted to UCSF staff for their review and final approval prior to performing the transportation impact analyses (Task 5).

Task 5 – Transportation Impact Analysis

The transportation team will identify potential transportation impacts associated with LRDP proposals at each campus, including impacts on the study intersections, plus impacts on transit, pedestrian and bicycle circulation. Potential impacts associated with the LRDP parking supply and demand, as well as passenger and freight loading supply and demand conditions will also be identified. The methodology used will be consistent with UCSF criteria for identifying significant impacts. The construction of new medical facilities and the demolition and renovation of some of the existing buildings being proposed as part of the LRDP will take place at different horizon years. Thus, transportation impacts will be evaluated under both existing and future year conditions.

Traffic –

The transportation team will estimate AM and PM peak hour turning movement volumes at the study intersections identified in Task 2 for each campus site, and will perform intersection level of service analysis using the HCM 2000 methodology. The following scenarios will be analyzed:

- Existing (four campus sites)
- Existing plus LRDP (four campus sites)

- Interim Year (±2020) plus LRDP (Mission Bay campus site only)
- 2040 Cumulative, including LRDP (four campus sites)

Interim and future year traffic conditions will be estimated from the most recent AM and PM peak hour highway assignments obtained from City of San Francisco travel demand forecasting model for the appropriate years (2020 and 2040) as developed by the SF County Transportation Authority (SFCTA). The model results will be adjusted, if necessary, to properly reflect the latest information available about major development projects being planned in the vicinity of some campus sites, such as Mission Bay.

Transit –

The transportation team will use the forecasted increase in weekday peak hour transit trips to generally discuss transit conditions with the additional LRDP-generated transit trips. The discussion will also include a qualitative analysis of transit access walk trips from the each campus site to transit, such as inadequate sidewalks, unsafe pedestrian crossings or other related improvements affecting adequate access to transit service. Increased shuttle ridership on UCSF shuttles will also be discussed.

Bicycle/Pedestrian –

The transportation team will qualitatively assess pedestrian and bicycle conditions in the vicinity of each campus site as a result of the LRDP proposals. Potential conflicts between LRDP-generated vehicle traffic and pedestrian and bicycle circulation will be qualitatively assessed, and conflict areas will be identified.

Parking
The transportation team will use the parking information collected to document how parking demand associated with the LRDP proposals could affect on-campus or off-campus parking supply. If the analysis shows that parking demand may exceed supply, the transportation team will work with UCSF to identify potential strategies to reduce parking demand or manage on-street supply to reduce potential consequences overflow parking. We will qualitatively assess the potential for parking to spill over to adjacent neighborhoods.

Loading –

The transportation team will use the loading demand calculated in Task 4 to conduct an overall loading supply/demand evaluation at each campus site. This analysis will also include a discussion of potential transportation-related issues associated with relocating or consolidating loading activities to certain areas of the site.

Based on the travel demand forecasts, the transportation team will qualitatively discuss potential passenger loading issues and activities at each campus site. Passenger loading and unloading operations planned to occur at each site will be identified. The potential for conflicts of these passenger activities with traffic, transit, pedestrian and bicycle flows will be discussed.

Construction –

The transportation team will qualitatively evaluate potential short-term construction impacts that could be created by the LRDP proposals. Construction impact evaluation will address the duration of construction activity, possible truck routings, and estimated daily truck volumes

Task 6 – Develop and Evaluate Potential Mitigation Measures, TDM Measures and Identify Improvements

Based on the results of impact analysis, the transportation team will work with UCSF staff to identify potential measures, if necessary, to mitigate any significant transportation impacts to a non-significant level. The analysis will include an assessment of additional TDM measures that could be implemented to reduce the number of single-occupant vehicles and increase the number of carpoolers and transit riders on campus, including a reduction in the parking supply ratios, increased parking rates, additional transit incentives, etc. The effectiveness of the specific TDM measures will be estimated based on past experiences at the UCSF campuses, similar plans being proposed for other locations in San Francisco, and best practices at other institutional locations as reported in the literature.

The transportation team will also work with UCSF to identify and assess potential transportation improvements (e.g., provision of bicycle racks, additional TDM measures, etc.) that although not necessary to mitigate transportation impacts, would facilitate and improve travel to/from the campus sites by means other than single occupant automobile.

Task 7 – Transportation Study Report

The transportation team's first deliverable will be a technical memorandum summarizing the transportation survey methodology, implementation and results, and the travel demand forecast estimates for each campus site, as described in Task 4. The transportation team will respond to one round of comments from UCSF and will submit a final draft technical memorandum to UCSF for inclusion in the transportation study reports.

The transportation team will prepare a Draft One Transportation Study Report for each campus site, incorporating data, analyses, and conclusions from the previous tasks. These reports will be submitted to UCSF staff for review. The transportation team will respond to one round of comments from UCSF and will submit a Draft Two report for each campus site to UCSF. The transportation team will incorporate the final comments from UCSF, and prepare a Final Transportation Study Report for each campus site.

Task 8 – Environmental Impact Report

The transportation team will coordinate with UCSF staff and Environmental Science Associates (ESA) on the preparation of the transportation section for the Administrative Draft document of the UCSF LRDP EIR to be written by ESA. We assume for budgeting purposes 50 hours for coordination and that no new technical analysis will be necessary.

After Draft EIR circulation, we will review relevant public comments with UCSF Staff and ESA on the transportation section to help provide recommended responses. We assume for budgeting purposes 24 hours for the preparation of the response to public comments and that no new technical analysis will be necessary.

APPENDIX B: ROADWAY NETWORK CLASSIFICATIONS (FROM SF GENERAL PLAN)

Roadway Classifications

The San Francisco Planning Department has developed a street hierarchy system for the City and County of San Francisco, in which the function and design of each street are consistent with the character and use of adjacent land. The major classifications in the Vehicle Circulation Plan of the San Francisco *General Plan* are:

- **Freeways:** Limited access, very high capacity facilities; primary function is to carry intercity traffic; they may, as a result of route location, also serve the secondary function of providing for travel between distant sections in the city.
- **Major Arterials:** Cross-town thoroughfares whose primary function is to link districts within the city and to distribute traffic from and to the freeways; these are routes generally of citywide significance; of varying capacity depending on the travel demand for the specific direction and adjacent land uses.
- **Transit Conflict Streets:** Streets with a primary transit function which are not classified as major arterials but experience significant conflicts with automobile traffic.
- **Secondary Arterials:** Primarily intra-district routes of varying capacity serving as collectors for the major thoroughfares; in some cases supplemental to the major arterial system.
- **Recreational Streets:** A special category of street whose major function is to provide for slow pleasure drives and cyclist and pedestrian use; more highly valued for recreational use than for traffic movement. The order of priority for these streets should be to accommodate: 1) pedestrians, hiking trails or wilderness routes, as appropriate; 2) cyclists; 3) equestrians; 4) automobile scenic driving. This should be slow and consistent with the topography and nature of the area.
- **Collector Streets:** Relatively low-capacity streets serving local distribution functions primarily in large, low-density areas, connecting to major and secondary arterials.
- **Local Streets:** All other streets intended for access to abutting residential and other land uses, rather than for through traffic; generally of lowest capacity.

In addition to the San Francisco Planning Department's roadway classifications, the freeways, major arterials, and transit conflict streets are included in the Congestion Management Program (CMP) Network and Metropolitan Transportation System (MTS) Network (see below).

Transit Preferential Streets

The Transit Preferential Street network classification system takes into consideration all transportation functions, and identifies the major transit routes where general traffic should be routed away from. There are two classifications of transit preferential streets: Primary Transit Streets, which are either transit-oriented or transit-important; and Secondary Transit Streets.

- **Primary Transit Street – Transit-Oriented:** Not major arterials, with either high transit ridership, a high frequency of service, or surface rail. Along these streets, the emphasis should be on moving transit vehicles, and impacts on automobile traffic should be of secondary concern.

- **Primary Transit Street – Transit-Important:** Major arterials, with either high transit ridership, high frequency of service, or surface rail. Along these streets, the goal is to improve the balance between modes of transportation, and the emphasis should be on moving people and goods, rather than on moving vehicles.
- **Secondary Transit Street:** Medium transit ridership and low-to-medium frequency of service, or medium frequency of service and low-to-medium transit ridership, or connects two or more major destinations.

In general, it is City policy that transit preferential treatments should be concentrated on the most important transit streets, and the treatments applied should respond to all transportation needs of the street. For example, on streets that are major arterials for transit and not for automobile traffic, treatments should emphasize transit priority; on streets that are major arterials for both transit and automobiles, treatments should emphasize a balance between the modes. It is also City policy that automobile facility features (such as driveways and loading docks) should be reduced, relocated or prohibited on transit preferential streets in order to avoid traffic conflicts and automobile congestion.

Citywide Pedestrian Network

The Citywide Pedestrian Network is a classification of streets throughout the City used to identify streets devoted to or primarily oriented to pedestrian use. The main classifications are:

- **Citywide Pedestrian Network Street:** An inter-neighborhood connection with "citywide significance" includes both exclusive pedestrian and pedestrian-oriented vehicular streets. These streets include the Bay, Ridge, and Coast trails, are used by commuters, tourists, general public and recreaters, and connect major institutions with transit facilities.
- **Neighborhood Network Street:** A neighborhood commercial, residential or transit street that serves pedestrians from the general vicinity. Some streets may be part of the Citywide network, but are generally oriented towards neighborhood-serving uses. Types include exclusive pedestrian and pedestrian-oriented vehicular streets. As part of the Neighborhood Network Street network, streets are classified as **Neighborhood Commercial Streets**, which are streets that are predominately commercial use with parking and loading conflicts, or **Neighborhood Network Connection Streets**, which are intra-neighborhood connection streets that connect neighborhood destinations.

In general, it is City policy that sufficient pedestrian movement space should be provided to minimize pedestrian congestion, sidewalks should be widened where intensive commercial, recreational or institutional activity is present, and efforts should be made to ensure convenient and safe pedestrian crossings at intersections.

Congestion Management Program (CMP) Network

The CMP Network is the network of freeways, state highways, major arterials and transit conflict streets (see Roadway Classifications, above) established in accordance with state Congestion Management legislation. As part of the CMP, the San Francisco County Transportation Authority is required to determine the level of service (LOS) for the CMP Network streets every two years. The LOS is based on the average travel speed for each

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roadway segment during both the AM and PM peak periods. The level of service standard is LOS E, except for roadway segments that operated at LOS F in 1991 (when the first study was performed). The CMP requires development of "Deficiency Plans" for any CMP-designated roadway that operate at LOS F. These plans include an analysis of the causes of the deficiency, a list of improvements that would have to be made to prevent the deficiency from occurring (including cost estimates), a list of improvements proposed as part of the plan, and an action plan for implementation of the improvements (including an implementation schedule).

Metropolitan Transportation System (MTS) Network

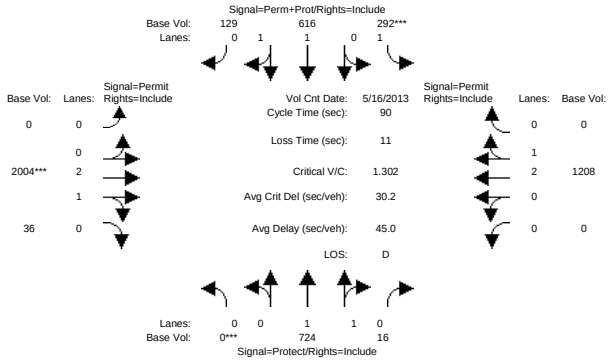
The MTS Network is defined by Metropolitan Transportation Commission (MTC) as part of its Regional Transportation Plan. The MTS is a regional network of roadways, transit corridors and transfer points, identified by the MTC on the basis of specific criteria. The criteria identified facilities that provide relief to congested corridors, improve connectivity, accommodate travel demand and serve a regional transportation function. The State highways and major thoroughfares designated in San Francisco's CMP roadway network are all included in the regional MTS network. There are a few instances in which the local CMP network is not identical to the MTS network due to differences in the criteria used to define each network.

APPENDIX C: INTERSECTION LEVEL OF SERVICE CALCULATIONS

Existing

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #1: Stanyan / Oak-Fell / Kezar



Street Name:	Stanyan Street						Kezar / Oak / Fell					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	21	0	21	8	33	33	0	46	46	46	46	0
Y+R:	12.0	4.0	12.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	4.0
Volume Module: >> Count Date: 16 May 2013 <<												
Base Vol:	0	724	16	292	616	129	0	2004	36	0	1208	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	724	16	292	616	129	0	2004	36	0	1208	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	0	731	16	295	622	130	0	2024	36	0	1220	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	731	16	295	622	130	0	2024	36	0	1220	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	731	16	295	622	130	0	2024	36	0	1220	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.75	0.39	0.79	0.78	1.00	0.77	0.77	1.00	0.78	0.91
Lanes:	0.00	1.96	0.04	1.00	1.65	0.35	0.00	2.95	0.05	0.00	3.00	0.00
Final Sat.:	0	2787	62	740	2477	519	0	4333	78	0	4424	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.26	0.40	0.25	0.25	0.00	0.47	0.47	0.00	0.28	0.00
Crit Moves:	****			****				****				
Green/Cycle:	0.00	0.21	0.21	0.43	0.37	0.37	0.00	0.51	0.51	0.00	0.51	0.00
Volume/Cap:	0.00	1.24	1.24	0.80	0.69	0.69	0.00	0.91	0.91	0.00	0.54	0.00
Uniform Del:	0.0	35.5	35.5	33.1	24.1	24.1	0.0	20.2	20.2	0.0	14.9	0.0
IncremntDel:	0.0	121	121.4	16.6	3.5	3.5	0.0	7.2	7.2	0.0	0.9	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Delay/Veh:	0.0	157	156.9	49.7	27.6	27.6	0.0	27.4	27.4	0.0	15.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	157	156.9	49.7	27.6	27.6	0.0	27.4	27.4	0.0	15.8	0.0
LOS by Move:	A	F	F	D	C	C	A	C	C	A	B	A
HCM2kAvgQ:	0	20	20	9	10	10	0	24	24	0	9	0

Note: Queue reported is the number of cars per lane.

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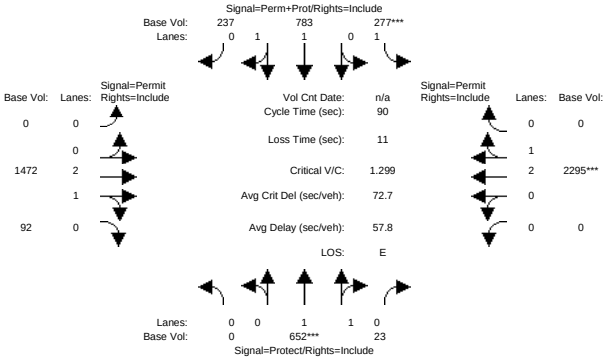
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #1: Stanyan / Oak-Fell / Kezar



Street Name:	Stanyan Street						Kezar / Oak / Fell					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	0	19	8	31	31	0	48	48	48	48	0
Y+R:	12.0	4.0	12.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	4.0
Volume Module:												
Base Vol:	0	652	23	277	783	237	0	1472	92	0	2295	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	652	23	277	783	237	0	1472	92	0	2295	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	686	24	292	824	249	0	1549	97	0	2416	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	686	24	292	824	249	0	1549	97	0	2416	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	686	24	292	824	249	0	1549	97	0	2416	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.75	0.41	0.78	0.77	1.00	0.77	0.77	1.00	0.78	0.91
Lanes:	0.00	1.93	0.07	1.00	1.53	0.47	0.00	2.82	0.18	0.00	3.00	0.00
Final Sat.:	0	2746	97	779	2275	689	0	4126	258	0	4424	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.25	0.37	0.36	0.36	0.00	0.38	0.38	0.00	0.55	0.00
Crit Moves:		****		****							****	
Green/Cycle:	0.00	0.20	0.20	0.42	0.34	0.34	0.00	0.53	0.53	0.00	0.53	0.00
Volume/Cap:	0.00	1.28	1.28	0.78	1.05	1.05	0.00	0.70	0.70	0.00	1.02	0.00
Uniform Del:	0.0	36.2	36.2	32.7	29.5	29.5	0.0	15.7	15.7	0.0	21.0	0.0
IncremntDel:	0.0	138	138.1	14.5	42.7	42.7	0.0	1.8	1.8	0.0	24.9	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Delay/Veh:	0.0	174	174.3	47.2	72.2	72.2	0.0	17.5	17.5	0.0	45.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	174	174.3	47.2	72.2	72.2	0.0	17.5	17.5	0.0	45.9	0.0
LOS by Move:	A	F	F	D	E	E	A	B	B	A	D	A
HCM2kAvgQ:	0	20	20	9	24	24	0	14	14	0	34	0

Note: Queue reported is the number of cars per lane.

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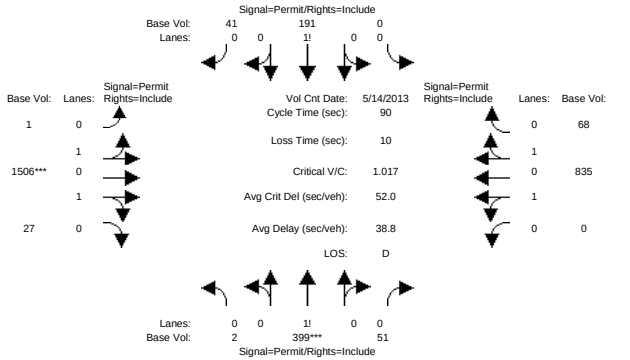
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #2: 9th Ave / Lincoln



Street Name:	9th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	26	26	26	26	26	26	54	54	54	54	54	54
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 14 May 2013 <<												
Base Vol:	2	399	51	0	191	41	1	1506	27	0	835	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	399	51	0	191	41	1	1506	27	0	835	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	2	403	52	0	193	41	1	1521	27	0	843	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	403	52	0	193	41	1	1521	27	0	843	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	403	52	0	193	41	1	1521	27	0	843	69
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.72	0.72	1.00	0.82	0.81	0.72	0.72	0.72	0.95	0.74	0.74
Lanes:	0.01	0.88	0.11	0.00	0.82	0.18	0.01	1.96	0.03	0.00	1.85	0.15
Final Sat.:	6	1206	154	0	1274	273	2	2671	48	0	2613	213
Capacity Analysis Module:												
Vol/Sat:	0.33	0.33	0.33	0.00	0.15	0.15	0.57	0.57	0.57	0.00	0.32	0.32
Crit Moves:		****						****				
Green/Cycle:	0.29	0.29	0.29	0.00	0.29	0.29	0.60	0.60	0.60	0.00	0.60	0.60
Volume/Cap:	1.16	1.16	1.16	0.00	0.52	0.52	0.95	0.95	0.95	0.00	0.54	0.54
Uniform Del:	32.0	32.0	32.0	0.0	26.8	26.8	16.7	16.7	16.7	0.0	10.6	10.6
IncremntDel:	95.4	95.4	95.4	0.0	4.3	4.3	13.1	13.1	13.1	0.0	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	127.4	127	127.4	0.0	31.2	31.2	29.8	29.8	29.8	0.0	11.9	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	127.4	127	127.4	0.0	31.2	31.2	29.8	29.8	29.8	0.0	11.9	11.9
LOS by Move:	F	F	F	A	C	C	C	C	C	A	B	B
HCM2kAvgQ:	22	22	22	0	6	6	27	27	27	0	8	8

Note: Queue reported is the number of cars per lane.

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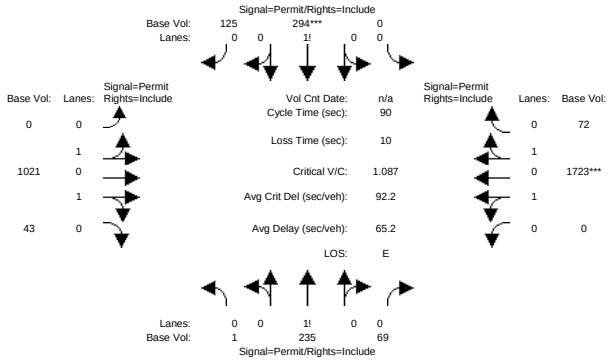
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #2: 9th Ave / Lincoln



Street Name:	9th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	28	28	28	28	28	28	52	52	52	52	52	52
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	1	235	69	0	294	125	0	1021	43	0	1723	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	235	69	0	294	125	0	1021	43	0	1723	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	1	250	73	0	313	133	0	1086	46	0	1833	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	250	73	0	313	133	0	1086	46	0	1833	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	250	73	0	313	133	0	1086	46	0	1833	77
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.70	1.00	0.80	0.79	0.95	0.75	0.75	0.95	0.75	0.75
Lanes:	0.01	0.77	0.22	0.00	0.70	0.30	0.00	1.92	0.08	0.00	1.92	0.08
Final Sat.:	4	1034	304	0	1065	453	0	2726	115	0	2726	114
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.00	0.29	0.29	0.00	0.40	0.40	0.00	0.67	0.67
Crit Moves:					****						****	
Green/Cycle:	0.31	0.31	0.31	0.00	0.31	0.31	0.00	0.58	0.58	0.00	0.58	0.58
Volume/Cap:	0.78	0.78	0.78	0.00	0.94	0.94	0.00	0.69	0.69	0.00	1.16	1.16
Uniform Del:	28.2	28.2	28.2	0.0	30.2	30.2	0.0	13.3	13.3	0.0	19.0	19.0
IncremntDel:	13.3	13.3	13.3	0.0	29.5	29.5	0.0	2.4	2.4	0.0	80.7	80.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	41.5	41.5	41.5	0.0	59.8	59.8	0.0	15.7	15.7	0.0	99.7	99.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.5	41.5	41.5	0.0	59.8	59.8	0.0	15.7	15.7	0.0	99.7	99.7
LOS by Move:	D	D	D	A	E	E	A	B	B	A	F	F
HCM2kAvgQ:	9	9	9	0	17	17	0	13	13	0	46	46

Note: Queue reported is the number of cars per lane.

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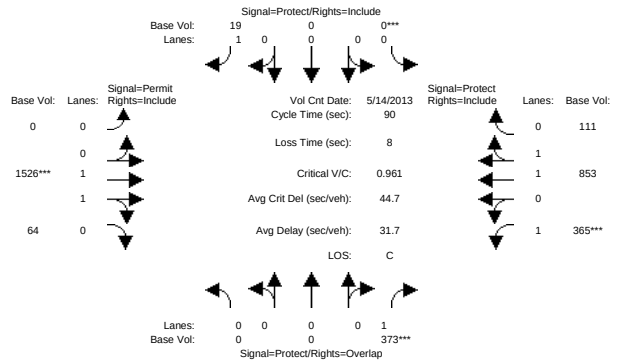
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #3: 7th Ave / Lincoln



Street Name:	7th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	29	0	0	24	52	52	52	29	58	58
Y+R:	4.0	4.0	5.0	4.0	4.0	4.0	4.5	4.5	4.5	5.0	4.5	4.5
Volume Module: >> Count Date: 14 May 2013 <<												
Base Vol:	0	0	373	0	0	19	0	1526	64	365	853	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	373	0	0	19	0	1526	64	365	853	111
User Adj:	1.00	1.00	0.70	1.00	1.00	1.00	1.00	0.70	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	272	0	0	20	0	1113	67	380	889	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	272	0	0	20	0	1113	67	380	889	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	272	0	0	20	0	1113	67	380	889	116
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.62	1.00	1.00	0.69	1.00	0.75	0.74	0.81	0.74	0.74
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.89	0.11	1.00	1.77	0.23
Final Sat.:	0	0	1187	0	0	1303	0	2671	160	1539	2484	323
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.23	0.00	0.00	0.02	0.00	0.42	0.42	0.25	0.36	0.36
Crit Moves:			****	****				****		****		
Green/Cycle:	0.00	0.00	0.47	0.00	0.00	0.21	0.00	0.46	0.46	0.26	0.72	0.72
Volume/Cap:	0.00	0.00	0.49	0.00	0.00	0.07	0.00	0.91	0.91	0.96	0.50	0.50
Uniform Del:	0.0	0.0	20.7	0.0	0.0	35.6	0.0	28.2	28.2	41.5	7.1	7.1
IncremntDel:	0.0	0.0	3.0	0.0	0.0	0.5	0.0	10.6	10.6	36.8	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	23.7	0.0	0.0	36.1	0.0	38.8	38.8	78.2	7.9	7.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	23.7	0.0	0.0	36.1	0.0	38.8	38.8	78.2	7.9	7.9
LOS by Move:	A	A	C	A	A	D	A	D	D	E	A	A
HCM2kAvgQ:	0	0	6	0	0	1	0	20	20	17	9	9

Note: Queue reported is the number of cars per lane.

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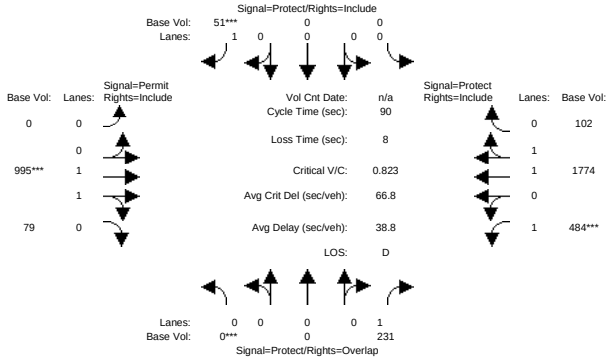
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #3: 7th Ave / Lincoln



Street Name:	7th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	38	0	0	24	43	43	43	38	58	58
Y+R:	4.0	4.0	5.0	4.0	4.0	4.0	4.5	4.5	4.5	5.0	4.5	4.5
Volume Module:												
Base Vol:	0	0	231	0	0	51	0	995	79	484	1774	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	231	0	0	51	0	995	79	484	1774	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	241	0	0	53	0	1036	82	504	1478	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	241	0	0	53	0	1036	82	504	1478	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	241	0	0	53	0	1036	82	504	1478	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.63	1.00	1.00	0.68	1.00	0.74	0.74	0.81	0.74	0.74
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.85	0.15	1.00	1.87	0.13
Final Sat.:	0	0	1192	0	0	1299	0	2617	208	1539	2639	190
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.20	0.00	0.00	0.04	0.00	0.40	0.40	0.33	0.56	0.56
Crit Moves:	****					****		****		****		
Green/Cycle:	0.00	0.00	0.54	0.00	0.00	0.20	0.00	0.39	0.39	0.34	0.73	0.73
Volume/Cap:	0.00	0.00	0.37	0.00	0.00	0.20	0.00	1.02	1.02	0.97	0.77	0.77
Uniform Del:	0.0	0.0	15.0	0.0	0.0	37.3	0.0	34.5	34.5	37.0	9.7	9.7
IncremntDel:	0.0	0.0	1.7	0.0	0.0	1.7	0.0	31.9	31.9	33.6	2.9	2.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	16.6	0.0	0.0	39.0	0.0	66.4	66.4	70.6	12.6	12.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	16.6	0.0	0.0	39.0	0.0	66.4	66.4	70.6	12.6	12.6
LOS by Move:	A	A	B	A	A	D	A	E	E	E	B	B
HCM2kAvgQ:	0	0	5	0	0	2	0	26	26	22	21	21

Note: Queue reported is the number of cars per lane.

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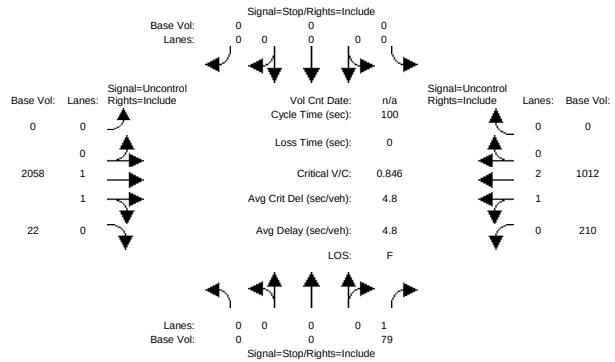
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #4: 4th Ave / Lincoln



Street Name:	4th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	79	0	0	0	2058	22	210	1012	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	79	0	0	0	2058	22	210	1012	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	81	0	0	0	2100	22	214	1033	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	81	0	0	0	2100	22	214	1033	0	
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	1061	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2122	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	220	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	253	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	220	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	253	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.37	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.85	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	1.6	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	6.9	xxxx	xxxxx
Control Del:	xxxxx	xxxx	30.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	65.9	xxxx	xxxxx
LOS by Move:	*	*	D	*	*	*	*	*	*	F	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.9	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	65.9	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	F	*	*
ApproachDel:		30.6			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		D			*			*			*	

Note: Queue reported is the number of cars per lane.

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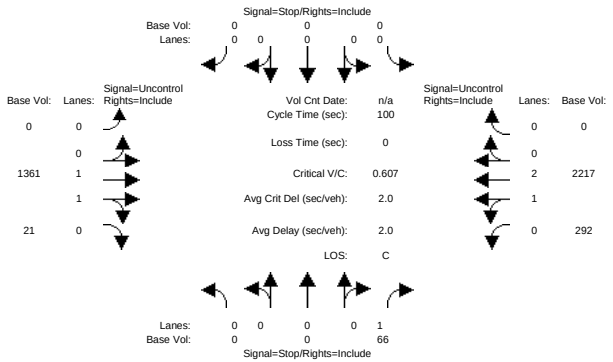
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #4: 4th Ave / Lincoln



Street Name:	4th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	66	0	0	0	1361	21	292	2217	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	66	0	0	0	1361	21	292	2217	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	0	0	67	0	0	0	1375	21	295	2239	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	67	0	0	0	1375	21	295	2239	0	
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	698	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1396	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	383	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	486	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	383	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	486	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.61	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.6	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	4.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	16.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	23.2	xxxx	xxxxx
LOS by Move:	*	*	C	*	*	*	*	*	*	C	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	23.2	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	C	*	*
ApproachDel:		16.4			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

Note: Queue reported is the number of cars per lane.

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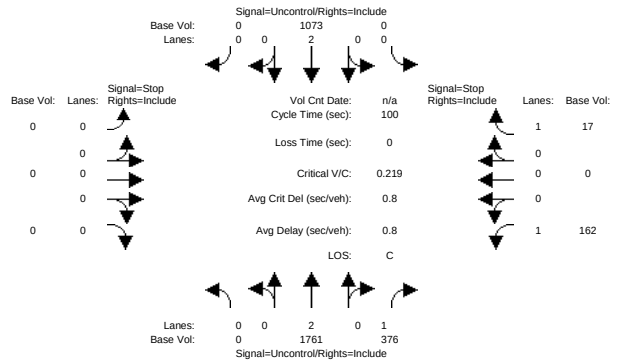
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #5: Lincoln Way-Kezar Drive-Third Avenue



Street Name:	Lincoln Way-Kezar Drive						Third Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	1761	376	0	1073	0	0	0	0	162	0	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1761	376	0	1073	0	0	0	0	162	0	17
User Adj:	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00	1.00	0.25	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	898	384	0	547	0	0	0	0	41	0	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	898	384	0	547	0	0	0	0	41	0	17
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1172	xxxx	449
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	188	xxxx	563
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	188	xxxx	563
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.22	xxxx	0.03
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.8	xxxx	0.1
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	29.4	xxxx	11.6
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			24.1		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

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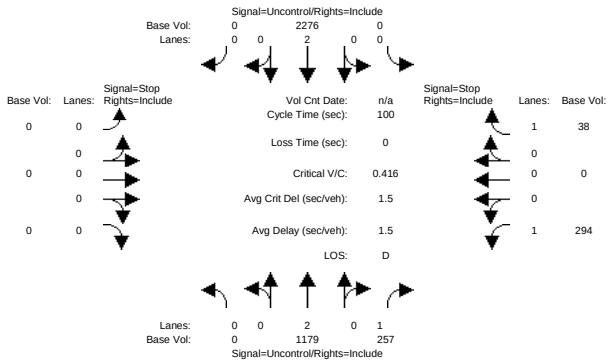
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #5: Lincoln Way-Kezar Drive-Third Avenue



Street Name:	Lincoln Way-Kezar Drive						Third Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	1179	257	0	2276	0	0	0	0	294	0	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1179	257	0	2276	0	0	0	0	294	0	38
User Adj:	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00	1.00	0.25	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	608	265	0	1173	0	0	0	0	76	0	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	608	265	0	1173	0	0	0	0	76	0	39
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1194	xxxx	304
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	182	xxxx	698
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	182	xxxx	698
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.42	xxxx	0.06
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.9	xxxx	0.2
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	38.2	xxxx	10.5
LOS by Move:	*	*	*	*	*	*	*	*	*	E	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			28.7		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the number of cars per lane.

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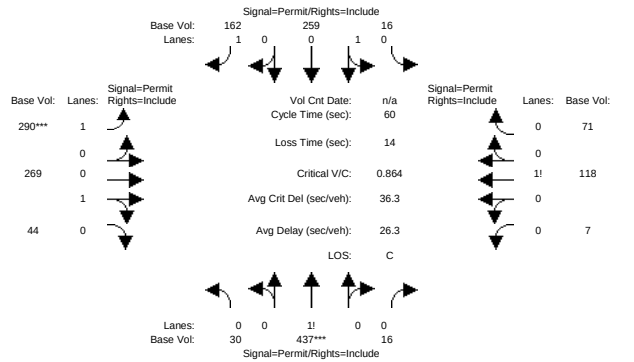
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #6: Stanyan / Frederick




```
Street Name:          Stanyan Street                Frederick Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    25   25   25    25   25   25    21   21   21    21   21   21
Y+R:          9.0  9.0  9.0   9.0  9.0  9.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30  437   16    16  259  162   290  269   44     7  118   71
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   30  437   16    16  259  162   290  269   44     7  118   71
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:    31  451   16    16  267  167   299  277   45     7  122   73
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   31  451   16    16  267  167   299  277   45     7  122   73
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   31  451   16    16  267  167   299  277   45     7  122   73
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.70 0.70  0.70  0.81 0.81  0.63  0.55 0.73  0.73  0.68 0.68  0.68
Lanes:       0.06 0.91  0.03  0.06 0.94  1.00  1.00 0.86  0.14  0.04 0.60  0.36
Final Sat.:    83 1205    44    90 1456  1205  1037 1193   195    46  782   471
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.37 0.37  0.37  0.18 0.18  0.14  0.29 0.23  0.23  0.16 0.16  0.16
Crit Moves:       ****                     ****
Green/Cycle: 0.42 0.42  0.42  0.42 0.42  0.42  0.35 0.35  0.35  0.35 0.35  0.35
Volume/Cap:  0.90 0.90  0.90  0.44 0.44  0.33  0.82 0.66  0.66  0.44 0.44  0.44
Uniform Del: 16.3 16.3  16.3  12.5 12.5  11.9  17.8 16.5  16.5  15.0 15.0  15.0
IncremntDel: 19.9 19.9  19.9   2.2  2.2   1.8  18.7  7.0   7.0   3.1  3.1   3.1
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   36.2 36.2  36.2  14.7 14.7  13.6  36.5 23.5  23.5  18.1 18.1  18.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  36.2 36.2  36.2  14.7 14.7  13.6  36.5 23.5  23.5  18.1 18.1  18.1
LOS by Move:    D    D     D     B    B     B     D    C     C     B    B     B
HCM2kAvgQ:     11   11    11     4    4     2     8    6     6     3    3     3
Note: Queue reported is the number of cars per lane.
```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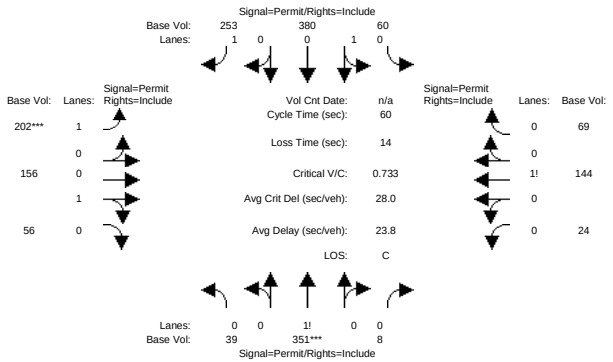
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #6: Stanyan / Frederick




```
Street Name:          Stanyan Street                Frederick Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    25   25   25    25   25   25    21   21   21    21   21   21
Y+R:          9.0  9.0  9.0   9.0  9.0  9.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  351    8    60  380  253   202  156   56    24  144   69
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   39  351    8    60  380  253   202  156   56    24  144   69
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.94 0.94 0.94  0.94 0.94 0.94  0.94 0.94 0.94  0.94 0.94 0.94
PHF Volume:    41  373    9    64  404  269   215  166   60    26  153   73
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   41  373    9    64  404  269   215  166   60    26  153   73
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   41  373    9    64  404  269   215  166   60    26  153   73
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.64 0.65 0.65  0.75 0.75 0.60  0.52 0.72 0.70  0.67 0.67 0.66
Lanes:       0.10 0.88 0.02  0.14 0.86 1.00  1.00 0.73 0.27  0.10 0.60 0.30
Final Sat.:   120 1083   25   195 1234 1133   989  997  358   128  768  368
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.34 0.34 0.34  0.33 0.33 0.24  0.22 0.17 0.17  0.20 0.20 0.20
Crit Moves:       ****                     ****
Green/Cycle: 0.42 0.42 0.42  0.42 0.42 0.42  0.35 0.35 0.35  0.35 0.35 0.35
Volume/Cap:  0.83 0.83 0.83  0.79 0.79 0.57  0.62 0.48 0.48  0.57 0.57 0.57
Uniform Del: 15.6 15.6 15.6  15.2 15.2 13.4  16.2 15.2 15.2  15.8 15.8 15.8
IncremntDel: 14.2 14.2 14.2  10.1 10.1  4.9   8.1  3.4  3.4   5.2  5.2  5.2
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   29.8 29.8 29.8  25.3 25.3 18.3  24.3 18.6 18.6  21.1 21.1 21.1
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  29.8 29.8 29.8  25.3 25.3 18.3  24.3 18.6 18.6  21.1 21.1 21.1
LOS by Move:    C    C    C     C    C    B     C    B    B     C    C    C
HCM2kAvgQ:      8    8    8     7    7    3     4    4    4     5    5    5
Note: Queue reported is the number of cars per lane.
```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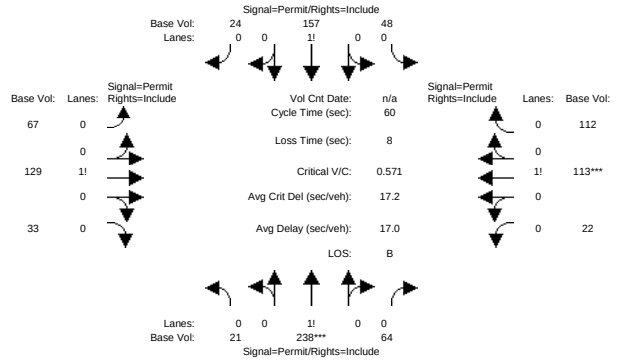
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #7: 9th Ave / Irving



Street Name:	9th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	21	238	64	48	157	24	67	129	33	22	113	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	238	64	48	157	24	67	129	33	22	113	112
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	23	264	71	53	174	27	74	143	37	24	126	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	264	71	53	174	27	74	143	37	24	126	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	264	71	53	174	27	74	143	37	24	126	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.69	0.69	0.63	0.63	0.63	0.62	0.63	0.62	0.66	0.66	0.64
Lanes:	0.06	0.74	0.20	0.21	0.68	0.11	0.29	0.57	0.14	0.09	0.45	0.46
Final Sat.:	86	969	261	252	825	126	347	667	171	110	565	560
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.53	0.53	0.53	0.41	0.41	0.41	0.61	0.61	0.61	0.64	0.64	0.64
Uniform Del:	9.6	9.6	9.6	8.9	8.9	8.9	16.1	16.1	16.1	16.3	16.3	16.3
IncremntDel:	2.9	2.9	2.9	2.0	2.0	2.0	6.6	6.6	6.6	7.0	7.0	7.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.6	12.6	12.6	10.9	10.9	10.9	22.8	22.8	22.8	23.3	23.3	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.6	12.6	12.6	10.9	10.9	10.9	22.8	22.8	22.8	23.3	23.3	23.3
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	5	5	5	3	3	3	4	4	4	5	5	5

Note: Queue reported is the number of cars per lane.

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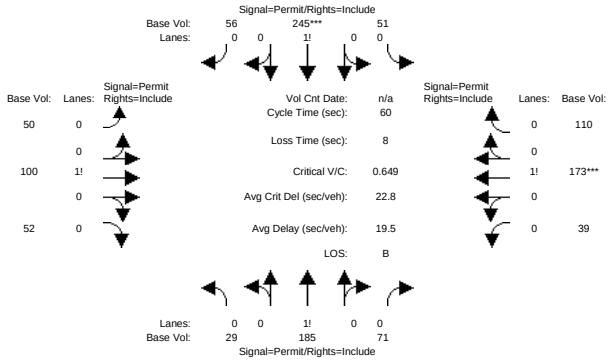
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #7: 9th Ave / Irving



Street Name:	9th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	32	32	32	32	32	32	20	20	20	20	20	20
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	29	185	71	51	245	56	50	100	52	39	173	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	185	71	51	245	56	50	100	52	39	173	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	30	193	74	53	255	58	52	104	54	41	180	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	193	74	53	255	58	52	104	54	41	180	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	193	74	53	255	58	52	104	54	41	180	115
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.66	0.66	0.66	0.66	0.62	0.63	0.62	0.66	0.66	0.64
Lanes:	0.10	0.65	0.25	0.15	0.69	0.16	0.25	0.49	0.26	0.12	0.53	0.35
Final Sat.:	129	823	316	182	872	199	293	586	305	150	667	424
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.23	0.29	0.29	0.29	0.18	0.18	0.18	0.27	0.27	0.27
Crit Moves:					****						****	
Green/Cycle:	0.53	0.53	0.53	0.53	0.53	0.53	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.44	0.44	0.44	0.55	0.55	0.55	0.53	0.53	0.53	0.81	0.81	0.81
Uniform Del:	8.5	8.5	8.5	9.2	9.2	9.2	16.2	16.2	16.2	18.3	18.3	18.3
IncremntDel:	2.1	2.1	2.1	3.2	3.2	3.2	5.1	5.1	5.1	15.8	15.8	15.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.6	10.6	10.6	12.5	12.5	12.5	21.3	21.3	21.3	34.0	34.0	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.6	10.6	10.6	12.5	12.5	12.5	21.3	21.3	21.3	34.0	34.0	34.0
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	4	4	3	4	4	4	3	3	3	6	6	6

Note: Queue reported is the number of cars per lane.

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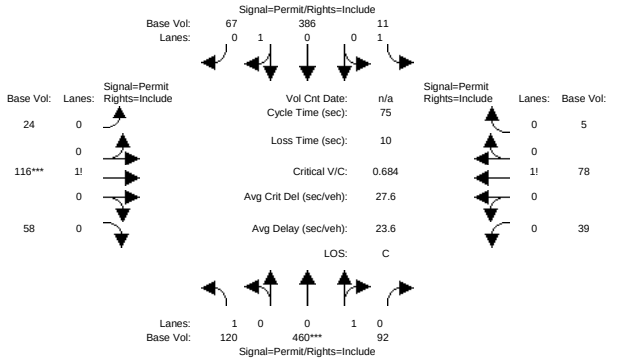
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #8: 7th Ave / Irving




```
Street Name:            7th Avenue                    Irving Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   38   38   38    38   38   38    28   28   28    28   28   28
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   4.5  4.5  4.5   4.5  4.5  4.5
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     120  460   92    11  386   67    24  116   58    39   78    5
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  120  460   92    11  386   67    24  116   58    39   78    5
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93
PHF Volume:   129  495   99    12  415   72    26  125   62    42   84    5
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  129  495   99    12  415   72    26  125   62    42   84    5
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  129  495   99    12  415   72    26  125   62    42   84    5
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.31 0.73 0.72  0.23 0.73 0.72  0.68 0.69 0.67  0.63 0.64 0.64
Lanes:       1.00 0.83 0.17  1.00 0.85 0.15  0.12 0.58 0.30  0.32 0.64 0.04
Final Sat.:   581 1150  230   444 1180  205   157  760  380   387  775   50
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.43 0.43  0.03 0.35 0.35  0.16 0.16 0.16  0.11 0.11 0.11
Crit Moves:       ****                          ****
Green/Cycle: 0.50 0.50 0.50  0.50 0.50 0.50  0.37 0.37 0.37  0.37 0.37 0.37
Volume/Cap:  0.44 0.86 0.86  0.05 0.70 0.70  0.45 0.45 0.45  0.29 0.29 0.29
Uniform Del: 12.2 16.7 16.7   9.8 14.7 14.7  18.1 18.1 18.1  17.0 17.0 17.0
IncremntDel:  4.8 13.2 13.2   0.5  5.9  5.9   3.0  3.0  3.0   1.7  1.7  1.7
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   17.1 29.9 29.9  10.2 20.6 20.6  21.1 21.1 21.1  18.7 18.7 18.7
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  17.1 29.9 29.9  10.2 20.6 20.6  21.1 21.1 21.1  18.7 18.7 18.7
LOS by Move:    B    C    C     B    C    C     C    C    C     B    B    B
HCM2kAvgQ:      2   11   11     0   10   10     4    4    4     2    2    2
Note: Queue reported is the number of cars per lane.
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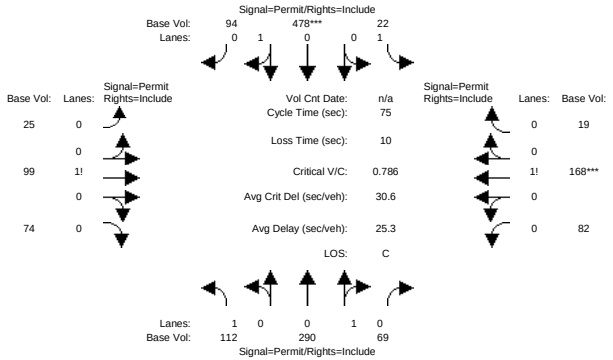
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #8: 7th Ave / Irving




```
Street Name:            7th Avenue                    Irving Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   38   38   38    38   38   38    28   28   28    28   28   28
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   4.5  4.5  4.5   4.5  4.5  4.5
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     112  290   69    22  478   94    25   99   74    82  168   19
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  112  290   69    22  478   94    25   99   74    82  168   19
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.94 0.94 0.94  0.94 0.94 0.94  0.94 0.94 0.94  0.94 0.94 0.94
PHF Volume:   119  309   73    23  509  100    27  105   79    87  179   20
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  119  309   73    23  509  100    27  105   79    87  179   20
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  119  309   73    23  509  100    27  105   79    87  179   20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.22 0.72 0.72  0.38 0.73 0.72  0.66 0.67 0.65  0.62 0.63 0.62
Lanes:       1.00 0.81 0.19  1.00 0.83 0.17  0.13 0.49 0.38  0.31 0.62 0.07
Final Sat.:   425 1110  264   725 1154  227   158  626  468   361  740   84
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.28 0.28 0.28  0.03 0.44 0.44  0.17 0.17 0.17  0.24 0.24 0.24
Crit Moves:                       ****                          ****
Green/Cycle: 0.50 0.50 0.50  0.50 0.50 0.50  0.37 0.37 0.37  0.37 0.37 0.37
Volume/Cap:  0.56 0.56 0.56  0.06 0.88 0.88  0.46 0.46 0.46  0.66 0.66 0.66
Uniform Del: 13.2 13.2 13.2   9.8 17.0 17.0  18.2 18.2 18.2  20.0 20.0 20.0
IncremntDel: 10.3  3.2  3.2   0.3 15.1 15.1   3.2  3.2  3.2   7.5  7.5  7.5
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   23.5 16.4 16.4  10.2 32.1 32.1  21.5 21.5 21.5  27.5 27.5 27.5
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  23.5 16.4 16.4  10.2 32.1 32.1  21.5 21.5 21.5  27.5 27.5 27.5
LOS by Move:    C    B    B     B    C    C     C    C    C     C    C    C
HCM2kAvgQ:      2    6    6     0   16   16     4    4    4     6    6    6
Note: Queue reported is the number of cars per lane.
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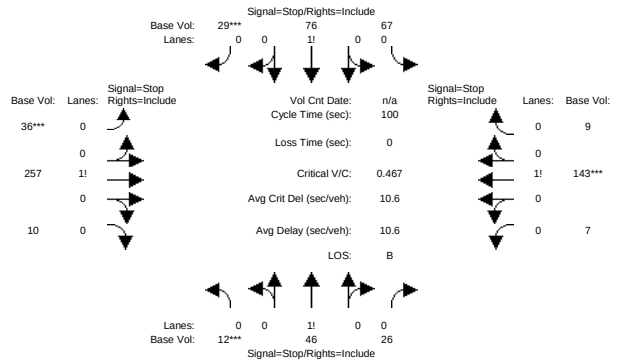
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #9: 4th Ave / Irving



Street Name:	4th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	12	46	26	67	76	29	36	257	10	7	143	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	46	26	67	76	29	36	257	10	7	143	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	13	51	29	74	84	32	40	282	11	8	157	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	51	29	74	84	32	40	282	11	8	157	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	51	29	74	84	32	40	282	11	8	157	10
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.14	0.55	0.31	0.39	0.44	0.17	0.12	0.85	0.03	0.04	0.90	0.06
Final Sat.:	89	340	192	249	283	108	85	605	24	30	607	38
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.30	0.30	0.30	0.47	0.47	0.47	0.26	0.26	0.26
Crit Moves:	****					****	****				****	
Delay/Veh:	9.1	9.1	9.1	10.2	10.2	10.2	11.8	11.8	11.8	9.6	9.6	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.1	9.1	9.1	10.2	10.2	10.2	11.8	11.8	11.8	9.6	9.6	9.6
LOS by Move:	A	A	A	B	B	B	B	B	B	A	A	A
ApproachDel:		9.1			10.2			11.8			9.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.1			10.2			11.8			9.6	
LOS by Appr:		A			B			B			A	
AllWayAvgQ:	0.1	0.1	0.1	0.3	0.3	0.3	0.8	0.8	0.8	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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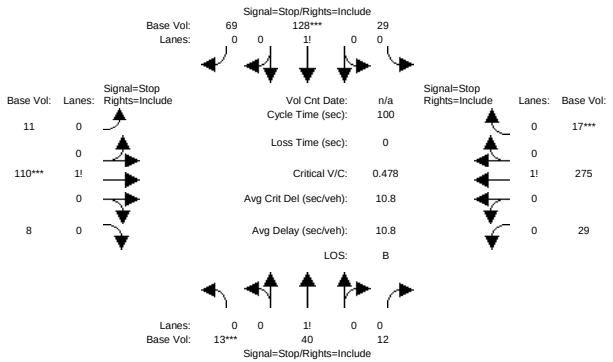
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #9: 4th Ave / Irving



Street Name:	4th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	13	40	12	29	128	69	11	110	8	29	275	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	40	12	29	128	69	11	110	8	29	275	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	14	43	13	31	136	73	12	117	9	31	293	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	43	13	31	136	73	12	117	9	31	293	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	43	13	31	136	73	12	117	9	31	293	18
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.20	0.62	0.18	0.13	0.57	0.30	0.09	0.85	0.06	0.09	0.86	0.05
Final Sat.:	122	375	112	87	383	206	56	563	41	64	611	38
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.36	0.36	0.36	0.21	0.21	0.21	0.48	0.48	0.48
Crit Moves:	****				****			****				****
Delay/Veh:	8.9	8.9	8.9	10.5	10.5	10.5	9.3	9.3	9.3	11.9	11.9	11.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.9	8.9	8.9	10.5	10.5	10.5	9.3	9.3	9.3	11.9	11.9	11.9
LOS by Move:	A	A	A	B	B	B	A	A	A	B	B	B
ApproachDel:		8.9			10.5			9.3			11.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.9			10.5			9.3			11.9	
LOS by Appr:		A			B			A			B	
AllWayAvgQ:	0.1	0.1	0.1	0.5	0.5	0.5	0.2	0.2	0.2	0.8	0.8	0.8

Note: Queue reported is the number of cars per lane.

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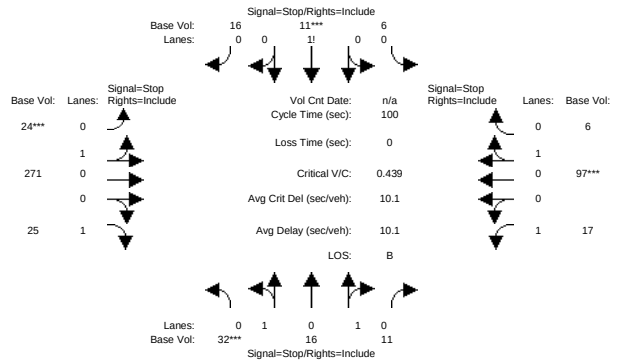
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #10: 2nd Avenue / Irving



Street Name:	2nd Avenue						Irving					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	32	16	11	6	11	16	24	271	25	17	97	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	16	11	6	11	16	24	271	25	17	97	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	34	17	12	6	12	17	26	291	27	18	104	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	17	12	6	12	17	26	291	27	18	104	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	17	12	6	12	17	26	291	27	18	104	6
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.63	0.37	0.18	0.33	0.49	0.08	0.92	1.00	1.00	0.94	0.06
Final Sat.:	548	389	231	111	204	297	59	663	843	634	661	41
Capacity Analysis Module:												
Vol/Sat:	0.06	0.04	0.05	0.06	0.06	0.06	0.44	0.44	0.03	0.03	0.16	0.16
Crit Moves:	****				****		****				****	
Delay/Veh:	9.2	8.3	8.3	8.8	8.8	8.8	11.4	11.4	7.0	8.4	8.6	8.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.2	8.3	8.3	8.8	8.8	8.8	11.4	11.4	7.0	8.4	8.6	8.6
LOS by Move:	A	A	A	A	A	A	B	B	A	A	A	A
ApproachDel:	8.8			8.8			11.0			8.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.8			8.8			11.0			8.6		
LOS by Appr:	A			A			B			A		
AllWayAvgQ:	0.1	0.0	0.0	0.1	0.1	0.1	0.7	0.7	0.0	0.0	0.2	0.2

Note: Queue reported is the number of cars per lane.

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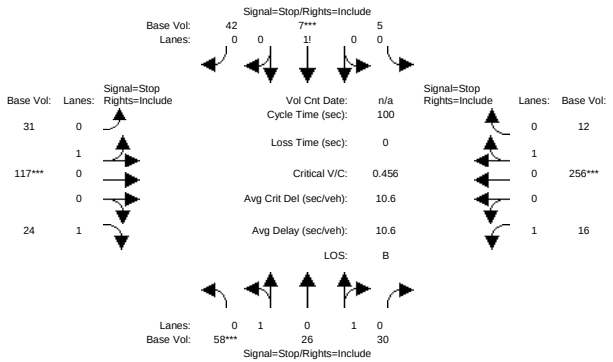
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #10: 2nd Avenue / Irving



Street Name:	2nd Avenue						Irving					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	58	26	30	5	7	42	31	117	24	16	256	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	26	30	5	7	42	31	117	24	16	256	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	67	30	34	6	8	48	36	134	28	18	294	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	30	34	6	8	48	36	134	28	18	294	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	30	34	6	8	48	36	134	28	18	294	14
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.47	0.53	0.09	0.13	0.78	0.21	0.79	1.00	1.00	0.96	0.04
Final Sat.:	529	287	319	55	77	461	134	504	740	611	645	30
Capacity Analysis Module:												
Vol/Sat:	0.13	0.10	0.11	0.10	0.10	0.10	0.27	0.27	0.04	0.03	0.46	0.46
Crit Moves:	****				****			****			****	
Delay/Veh:	9.9	8.8	8.8	9.2	9.2	9.2	10.1	10.1	7.5	8.6	12.1	12.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.9	8.8	8.8	9.2	9.2	9.2	10.1	10.1	7.5	8.6	12.1	12.1
LOS by Move:	A	A	A	A	A	A	B	B	A	A	B	B
ApproachDel:	9.4			9.2			9.7			11.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	9.4			9.2			9.7			11.9		
LOS by Appr:	A			A			A			B		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.0	0.0	0.8	0.8

Note: Queue reported is the number of cars per lane.

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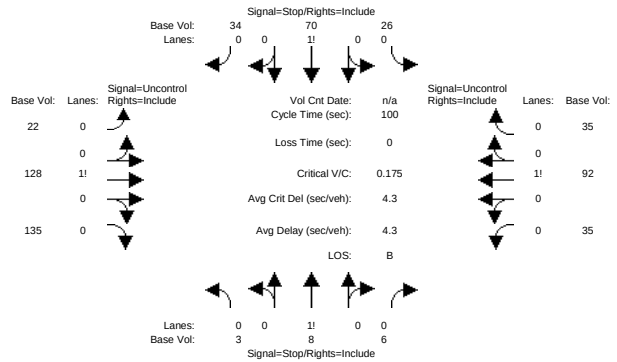
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #11: Arguello / Irving-Carl




```
Street Name:            Arguello                    Carl - Irving
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3    8     6    26   70    34    22  128   135    35   92    35
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3    8     6    26   70    34    22  128   135    35   92    35
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     3    9     7    28   76    37    24  139   147    38  100    38
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    3    9     7    28   76    37    24  139   147    38  100    38
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  512  474   213   463  529   119   138 xxxx xxxxx   286 xxxx xxxxx
Potent Cap.:  472  489   828   509  455   933  1446 xxxx xxxxx  1276 xxxx xxxxx
Move Cap.:    379  466   828   480  434   933  1446 xxxx xxxxx  1276 xxxx xxxxx
Volume/Cap:  0.01 0.02  0.01  0.06 0.18  0.04  0.02 xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx   7.9 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  526 xxxxx  xxxx  516 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx  1.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 12.1 xxxxx xxxxx 14.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    B     *     *    *     *     *    *     *
ApproachDel:       12.1            14.6           xxxxxx           xxxxxx
ApproachLOS:          B               B              *                *
Note: Queue reported is the number of cars per lane.
```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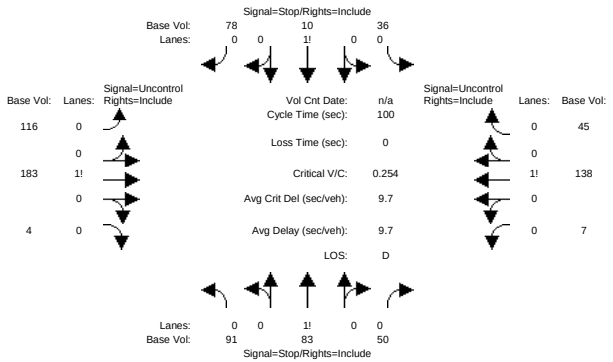
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #11: Arguello / Irving-Carl




```
Street Name:            Arguello                    Carl - Irving
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      91   83    50    36   10    78   116  183     4     7  138    45
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   91   83    50    36   10    78   116  183     4     7  138    45
User Adj:    0.60 0.70  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.84 0.84  0.84  0.84 0.84  0.84  0.84 0.84  0.84  0.84 0.84  0.84
PHF Volume:    65   69    60    43   12    93   138  218     5     8  164    54
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   65   69    60    43   12    93   138  218     5     8  164    54
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  757  731   220   769  707   191   218 xxxx xxxxx   223 xxxx xxxxx
Potent Cap.:  324  349   819   318  360   851  1352 xxxx xxxxx  1346 xxxx xxxxx
Move Cap.:    256  308   819   223  318   851  1352 xxxx xxxxx  1346 xxxx xxxxx
Volume/Cap:  0.25 0.22  0.07  0.19 0.04  0.11  0.10 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.3 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.0 xxxx xxxxx   7.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  351 xxxxx  xxxx  436 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  3.2 xxxxx xxxxx  1.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 27.1 xxxxx xxxxx 17.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    D     *     *    C     *     *    *     *     *    *     *
ApproachDel:       27.1            17.4           xxxxxx           xxxxxx
ApproachLOS:          D               C              *                *
Note: Queue reported is the number of cars per lane.
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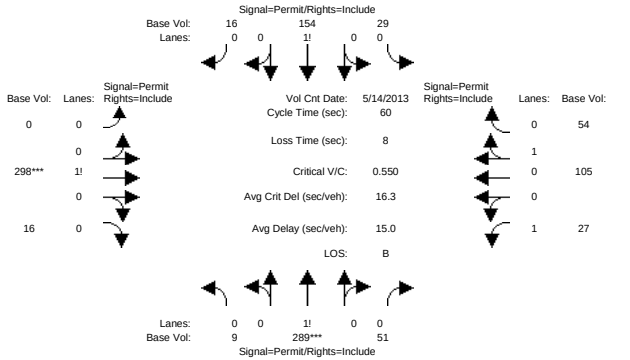
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #12: 9th Avenue / Judah Street



Street Name:	9th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 May 2013 <<												
Base Vol:	9	289	51	29	154	16	0	298	16	27	105	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	289	51	29	154	16	0	298	16	27	105	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	9	301	53	30	160	17	0	310	17	28	109	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	301	53	30	160	17	0	310	17	28	109	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	301	53	30	160	17	0	310	17	28	109	56
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.71	0.67	0.67	0.67	1.00	0.83	0.83	0.61	0.69	0.68
Lanes:	0.02	0.83	0.15	0.15	0.77	0.08	0.00	0.95	0.05	1.00	0.65	0.35
Final Sat.:	35	1119	197	185	985	102	0	1496	80	1153	864	444
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.16	0.16	0.16	0.00	0.21	0.21	0.02	0.13	0.13
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.00	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.52	0.52	0.52	0.32	0.32	0.32	0.00	0.59	0.59	0.07	0.36	0.36
Uniform Del:	9.6	9.6	9.6	8.4	8.4	8.4	0.0	16.0	16.0	13.0	14.5	14.5
IncremntDel:	2.8	2.8	2.8	1.3	1.3	1.3	0.0	4.6	4.6	0.3	2.2	2.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.4	12.4	12.4	9.6	9.6	9.6	0.0	20.6	20.6	13.3	16.7	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.4	12.4	12.4	9.6	9.6	9.6	0.0	20.6	20.6	13.3	16.7	16.7
LOS by Move:	B	B	B	A	A	A	A	C	C	B	B	B
HCM2kAvgQ:	5	5	5	2	2	2	0	5	5	0	3	3

Note: Queue reported is the number of cars per lane.

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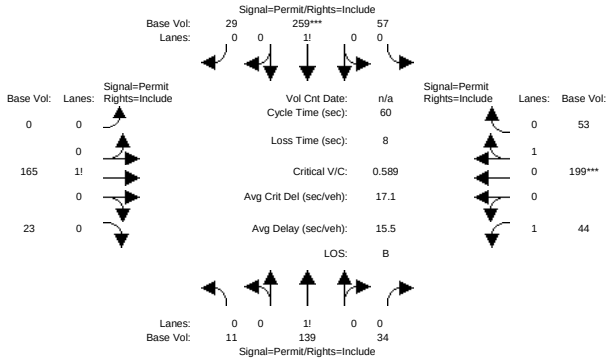
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #12: 9th Avenue / Judah Street



Street Name:	9th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	11	139	34	57	259	29	0	165	23	44	199	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	139	34	57	259	29	0	165	23	44	199	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	12	154	38	63	288	32	0	183	26	49	221	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	154	38	63	288	32	0	183	26	49	221	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	154	38	63	288	32	0	183	26	49	221	59
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.70	0.69	0.67	0.67	0.67	1.00	0.82	0.82	0.59	0.71	0.70
Lanes:	0.06	0.75	0.19	0.17	0.75	0.08	0.00	0.88	0.12	1.00	0.79	0.21
Final Sat.:	79	997	244	210	953	107	0	1370	191	1118	1060	282
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.30	0.30	0.30	0.00	0.13	0.13	0.04	0.21	0.21
Crit Moves:					****						****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.00	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.30	0.30	0.30	0.58	0.58	0.58	0.00	0.38	0.38	0.12	0.60	0.60
Uniform Del:	8.3	8.3	8.3	10.0	10.0	10.0	0.0	14.6	14.6	13.3	16.0	16.0
IncremntDel:	1.1	1.1	1.1	3.8	3.8	3.8	0.0	2.0	2.0	0.7	5.5	5.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	9.4	9.4	9.4	13.8	13.8	13.8	0.0	16.7	16.7	13.9	21.5	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.4	9.4	9.4	13.8	13.8	13.8	0.0	16.7	16.7	13.9	21.5	21.5
LOS by Move:	A	A	A	B	B	B	A	B	B	B	C	C
HCM2kAvgQ:	2	2	2	5	5	5	0	3	3	1	5	5

Note: Queue reported is the number of cars per lane.

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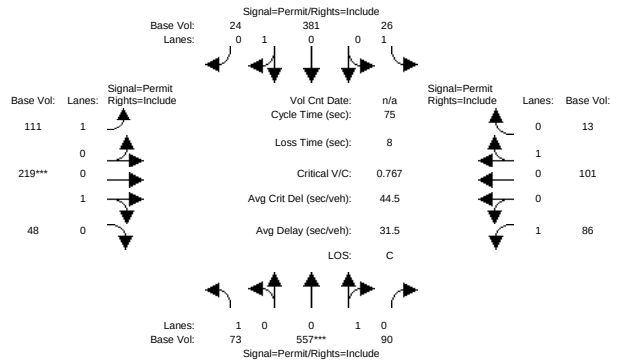
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #13: 7th Avenue / Judah Street



Street Name:	7th Avenue									Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Min. Green:	36	36	36	36	36	36	31	31	31	31	31	31			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Volume Module:															
Base Vol:	73	557	90	26	381	24	111	219	48	86	101	13			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	73	557	90	26	381	24	111	219	48	86	101	13			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
PHF Volume:	75	574	93	27	393	25	114	226	49	89	104	13			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	75	574	93	27	393	25	114	226	49	89	104	13			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	75	574	93	27	393	25	114	226	49	89	104	13			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.34	0.73	0.73	0.16	0.74	0.74	0.55	0.71	0.70	0.42	0.72	0.71			
Lanes:	1.00	0.86	0.14	1.00	0.94	0.06	1.00	0.82	0.18	1.00	0.89	0.11			
Final Sat.:	639	1194	193	306	1322	83	1041	1107	243	794	1209	156			
Capacity Analysis Module:															
Vol/Sat:	0.12	0.48	0.48	0.09	0.30	0.30	0.11	0.20	0.20	0.11	0.09	0.09			
Crit Moves:		****						****							
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41			
Volume/Cap:	0.25	1.00	1.00	0.18	0.62	0.62	0.27	0.49	0.49	0.27	0.21	0.21			
Uniform Del:	11.5	19.5	19.5	11.1	14.4	14.4	14.5	16.2	16.2	14.5	14.1	14.1			
IncremntDel:	1.9	35.4	35.4	2.7	4.2	4.2	1.5	3.1	3.1	2.0	0.8	0.8			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Delay/Veh:	13.4	54.9	54.9	13.8	18.7	18.7	16.0	19.3	19.3	16.5	15.0	15.0			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	13.4	54.9	54.9	13.8	18.7	18.7	16.0	19.3	19.3	16.5	15.0	15.0			
LOS by Move:	B	D	D	B	B	B	B	B	B	B	B	B			
HCM2kAvgQ:	1	16	16	0	7	7	2	5	5	2	2	2			

Note: Queue reported is the number of cars per lane.

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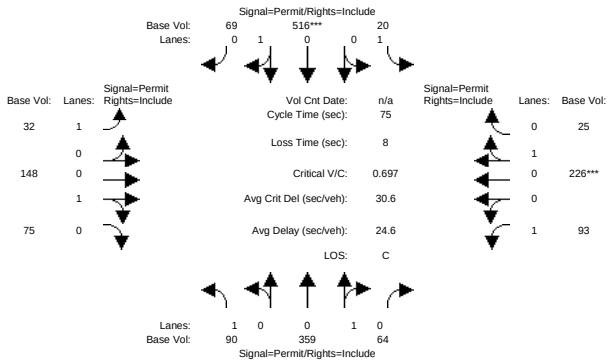
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #13: 7th Avenue / Judah Street



Street Name:	7th Avenue									Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Min. Green:	36	36	36	36	36	36	31	31	31	31	31	31			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Volume Module:															
Base Vol:	90	359	64	20	516	69	32	148	75	93	226	25			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	90	359	64	20	516	69	32	148	75	93	226	25			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
PHF Volume:	93	370	66	21	532	71	33	153	77	96	233	26			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	93	370	66	21	532	71	33	153	77	96	233	26			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	93	370	66	21	532	71	33	153	77	96	233	26			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.21	0.73	0.72	0.32	0.73	0.73	0.43	0.69	0.68	0.46	0.72	0.72			
Lanes:	1.00	0.85	0.15	1.00	0.88	0.12	1.00	0.66	0.34	1.00	0.90	0.10			
Final Sat.:	390	1174	209	613	1227	164	820	870	441	869	1232	136			
Capacity Analysis Module:															
Vol/Sat:	0.24	0.32	0.32	0.03	0.43	0.43	0.04	0.18	0.18	0.11	0.19	0.19			
Crit Moves:					****						****				
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41			
Volume/Cap:	0.50	0.66	0.66	0.07	0.90	0.90	0.10	0.42	0.42	0.27	0.46	0.46			
Uniform Del:	13.3	14.8	14.8	10.5	17.9	17.9	13.4	15.7	15.7	14.5	15.9	15.9			
IncremntDel:	9.1	5.0	5.0	0.5	17.8	17.8	0.6	2.4	2.4	1.8	2.7	2.7			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Delay/Veh:	22.4	19.8	19.8	11.0	35.7	35.7	14.0	18.1	18.1	16.3	18.6	18.6			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	22.4	19.8	19.8	11.0	35.7	35.7	14.0	18.1	18.1	16.3	18.6	18.6			
LOS by Move:	C	B	B	B	D	D	B	B	B	B	B	B			
HCM2kAvgQ:	1	7	7	0	14	13	1	4	4	2	5	5			

Note: Queue reported is the number of cars per lane.

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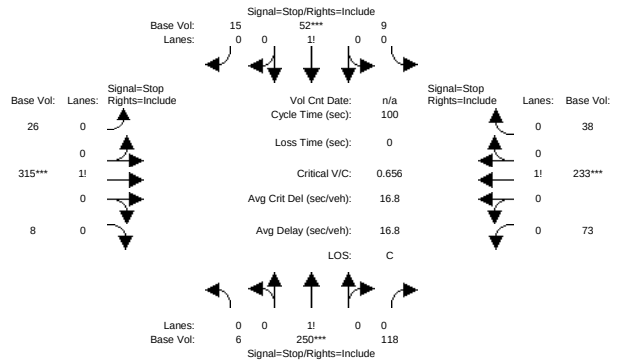
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #14: 6th Avenue / Judah Street




```
Street Name:            6th Avenue                    Judah Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       6   250   118     9    52    15    26   315     8    73   233    38
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    6   250   118     9    52    15    26   315     8    73   233    38
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.97  0.97  0.97  0.97  0.97  0.97  0.97  0.97  0.97  0.97  0.97  0.97
PHF Volume:     6   258   122     9    54    15    27   325     8    75   240    39
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    6   258   122     9    54    15    27   325     8    75   240    39
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    6   258   122     9    54    15    27   325     8    75   240    39
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.02  0.67  0.31  0.12  0.68  0.20  0.07  0.91  0.02  0.21  0.68  0.11
Final Sat.:     9   393   186    53   305    88    43   527    13   124   395    64
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.66  0.66  0.66  0.18  0.18  0.18  0.62  0.62  0.62  0.61  0.61  0.61
Crit Moves:       ****              ****              ****              ****
Delay/Veh:   18.0  18.0  18.0  10.7  10.7  10.7  17.0  17.0  17.0  16.7  16.7  16.7
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  18.0  18.0  18.0  10.7  10.7  10.7  17.0  17.0  17.0  16.7  16.7  16.7
LOS by Move:    C     C     C     B     B     B     C     C     C     C     C     C
ApproachDel:         18.0              10.7              17.0              16.7
Delay Adj:           1.00              1.00              1.00              1.00
ApprAdjDel:          18.0              10.7              17.0              16.7
LOS by Appr:            C                 B                 C                 C
AllWayAvgQ:   1.5   1.5   1.5   0.1   0.1   0.1   1.3   1.3   1.3   1.3   1.3   1.3
Note: Queue reported is the number of cars per lane.
```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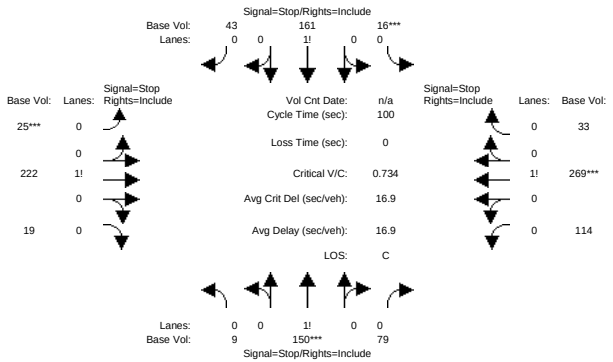
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #14: 6th Avenue / Judah Street




```
Street Name:            6th Avenue                    Judah Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       9   150    79    16   161    43    25   222    19   114   269    33
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    9   150    79    16   161    43    25   222    19   114   269    33
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.96  0.96  0.96  0.96  0.96  0.96  0.96  0.96  0.96  0.96  0.96  0.96
PHF Volume:     9   156    82    17   168    45    26   231    20   119   280    34
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    9   156    82    17   168    45    26   231    20   119   280    34
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    9   156    82    17   168    45    26   231    20   119   280    34
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.04  0.63  0.33  0.07  0.73  0.20  0.09  0.84  0.07  0.27  0.65  0.08
Final Sat.:    20   329   173    37   373   100    51   454    39   162   382    47
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.47  0.47  0.47  0.45  0.45  0.45  0.51  0.51  0.51  0.73  0.73  0.73
Crit Moves:       ****              ****              ****              ****
Delay/Veh:   13.8  13.8  13.8  13.6  13.6  13.6  14.5  14.5  14.5  21.8  21.8  21.8
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  13.8  13.8  13.8  13.6  13.6  13.6  14.5  14.5  14.5  21.8  21.8  21.8
LOS by Move:    B     B     B     B     B     B     B     B     B     C     C     C
ApproachDel:         13.8              13.6              14.5              21.8
Delay Adj:           1.00              1.00              1.00              1.00
ApprAdjDel:          13.8              13.6              14.5              21.8
LOS by Appr:            B                 B                 B                 C
AllWayAvgQ:   0.7   0.7   0.7   0.6   0.6   0.6   0.8   0.8   0.8   2.1   2.1   2.1
Note: Queue reported is the number of cars per lane.
```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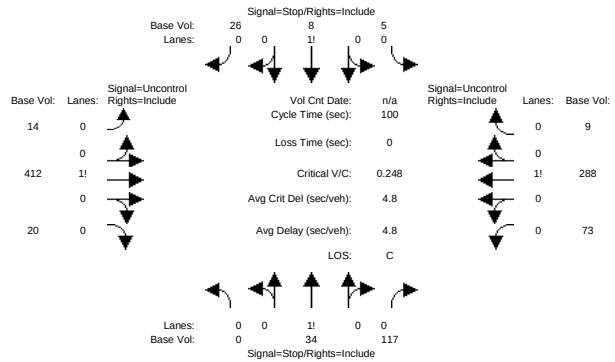
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #15: 5th Avenue / Judah Street




```
Street Name:            5th Avenue                    Judah Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   34   117     5    8    26    14  412    20    73  288     9
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   34   117     5    8    26    14  412    20    73  288     9
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.96 0.96  0.96  0.96 0.96  0.96  0.96 0.96  0.96  0.96 0.96  0.96
PHF Volume:     0   35   122     5    8    27    15  429    21    76  300     9
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   35   122     5    8    27    15  429    21    76  300     9
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx 1030   540  1104 1036   405   359 xxxx xxxxx   500 xxxx xxxxx
Potent Cap.: xxxx  233   542   188  232   646  1199 xxxx xxxxx  1064 xxxx xxxxx
Move Cap.:   xxxx  193   492   103  191   586  1142 xxxx xxxxx  1013 xxxx xxxxx
Volume/Cap:  xxxx 0.18  0.25  0.05 0.04  0.05  0.01 xxxx  xxxx  0.08 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.2 xxxx xxxxx   8.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx   364  xxxx  289 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx   2.1 xxxxx  0.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx  22.2 xxxxx 19.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     C     *    C     *     *    *     *     *    *     *
ApproachDel:      22.2             19.5           xxxxxx           xxxxxx
ApproachLOS:         C                C              *                *
Note: Queue reported is the number of cars per lane.
```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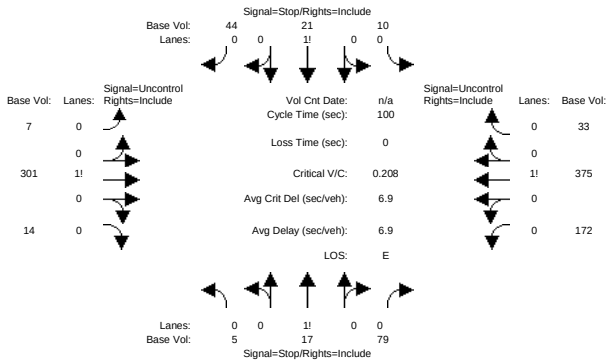
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #15: 5th Avenue / Judah Street




```
Street Name:            5th Avenue                    Judah Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       5   17    79    10   21    44     7  301    14   172  375    33
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    5   17    79    10   21    44     7  301    14   172  375    33
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.88 0.88  0.88  0.88 0.88  0.88  0.88 0.88  0.88  0.88 0.88  0.88
PHF Volume:     6   19    90    11   24    50     8  342    16   195  426    38
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    6   19    90    11   24    50     8  342    16   195  426    38
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1339 1320   450  1356 1310   545   514 xxxx xxxxx   408 xxxx xxxxx
Potent Cap.:  130  157   609   126  159   538  1052 xxxx xxxxx  1151 xxxx xxxxx
Move Cap.:     75  113   553    70  114   488  1002 xxxx xxxxx  1096 xxxx xxxxx
Volume/Cap:  0.08 0.17  0.16  0.16 0.21  0.10  0.01 xxxx  xxxx  0.18 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.6 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx   9.0 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  280 xxxxx  xxxx  181 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.9 xxxxx xxxxx  2.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 26.5 xxxxx xxxxx 41.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    D     *     *    E     *     *    *     *     *    *     *
ApproachDel:      26.5             41.6           xxxxxx           xxxxxx
ApproachLOS:         D                E              *                *
Note: Queue reported is the number of cars per lane.
```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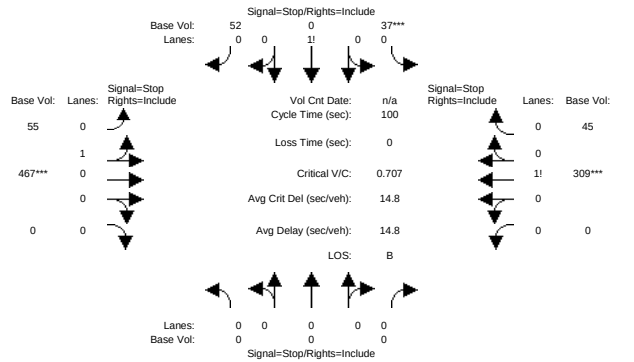
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #16: 4th Avenue / Parnassus



Street Name:	4th Avenue						Parnassus					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	37	0	52	55	467	0	0	309	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	37	0	52	55	467	0	0	309	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	39	0	55	58	492	0	0	325	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	39	0	55	58	492	0	0	325	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	39	0	55	58	492	0	0	325	47
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.41	0.01	0.58	0.11	0.89	0.00	0.00	0.87	0.13
Final Sat.:	0	0	0	243	0	341	82	695	0	0	659	96
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.16	0.00	0.16	0.71	0.71	xxxx	xxxx	0.49	0.49
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	9.4	9.4	9.4	17.6	17.6	0.0	0.0	12.0	12.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	9.4	9.4	9.4	17.6	17.6	0.0	0.0	12.0	12.0
LOS by Move:	*	*	*	A	A	A	C	C	*	*	B	B
ApproachDel:	xxxxxx			9.4			17.6			12.0		
Delay Adj:	xxxxx			1.00			1.00			1.00		
ApprAdjDel:	xxxxxx			9.4			17.6			12.0		
LOS by Appr:		*			A			C			B	
AllWayAvgQ:	0.0	0.0	0.0	0.1	0.1	0.1	2.2	2.2	2.2	0.9	0.9	0.9

Note: Queue reported is the number of cars per lane.

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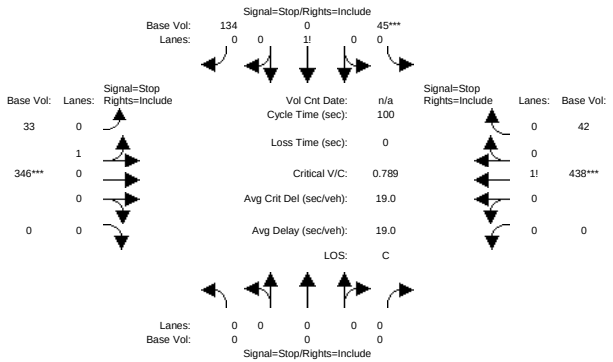
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #16: 4th Avenue / Parnassus



Street Name:	4th Avenue						Parnassus					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	45	0	134	33	346	0	0	438	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	45	0	134	33	346	0	0	438	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	0	0	0	52	0	156	38	402	0	0	509	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	52	0	156	38	402	0	0	509	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	52	0	156	38	402	0	0	509	49
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.25	0.00	0.75	0.09	0.91	0.00	0.00	0.91	0.09
Final Sat.:	0	0	0	146	0	435	59	616	0	0	646	62
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.36	xxxx	0.36	0.65	0.65	xxxx	xxxx	0.79	0.79
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	11.5	0.0	11.5	17.0	17.0	0.0	0.0	23.4	23.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	11.5	0.0	11.5	17.0	17.0	0.0	0.0	23.4	23.4
LOS by Move:	*	*	*	B	*	B	C	C	*	*	C	C
ApproachDel:	xxxxxx			11.5			17.0			23.4		
Delay Adj:	xxxxx			1.00			1.00			1.00		
ApprAdjDel:	xxxxxx			11.5			17.0			23.4		
LOS by Appr:		*			B			C			C	
AllWayAvgQ:	0.0	0.0	0.0	0.4	0.4	0.4	1.6	1.6	1.6	3.0	3.0	3.0

Note: Queue reported is the number of cars per lane.

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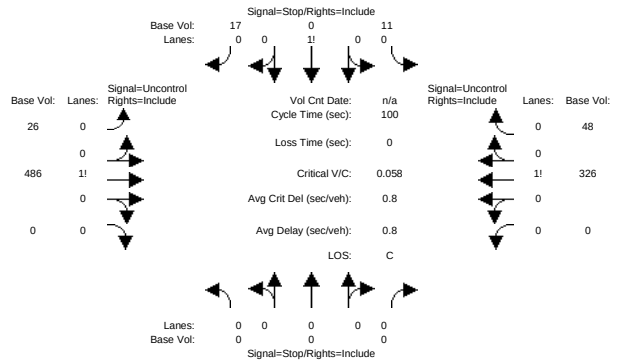
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #17: 3rd Avenue / Parnassus




```
Street Name:            3rd Avenue                    Parnassus
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    11    0    17    26  486     0     0  326    48
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    11    0    17    26  486     0     0  326    48
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91
PHF Volume:     0    0     0    12    0    19    29  534     0     0  358    53
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    12    0    19    29  534     0     0  358    53
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.4  6.5   6.2   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1076 1076   485   461 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   243  219   582  1100 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   208  193   511  1048 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.06 0.00  0.04  0.03 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.5 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *    *    *     *     A    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  325 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.3 xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 17.2 xxxxx   8.5 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *    *    C     *     A    *     *     *    *     *
ApproachDel:    xxxxxx           17.2           xxxxxx           xxxxxx
ApproachLOS:         *              C              *                *
Note: Queue reported is the number of cars per lane.
```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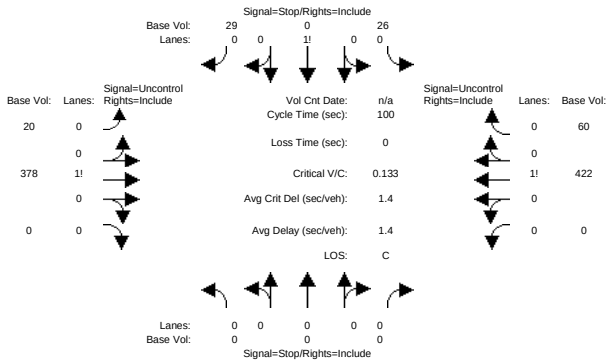
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #17: 3rd Avenue / Parnassus




```
Street Name:            3rd Avenue                    Parnassus
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    26    0    29    20  378     0     0  422    60
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    26    0    29    20  378     0     0  422    60
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91
PHF Volume:     0    0     0    29    0    32    22  415     0     0  464    66
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    29    0    32    22  415     0     0  464    66
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.4  6.5   6.2   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1056 1056   597   580 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   250  225   503   994 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   215  200   441   947 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.13 0.00  0.07  0.02 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.9 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *    *    *     *     A    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  294 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.8 xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 20.4 xxxxx   8.9 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *    *    C     *     A    *     *     *    *     *
ApproachDel:    xxxxxx           20.4           xxxxxx           xxxxxx
ApproachLOS:         *              C              *                *
Note: Queue reported is the number of cars per lane.
```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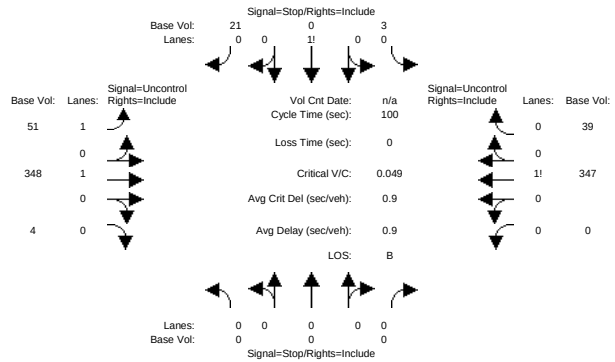
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #18: Hillway / Parnassus



Street Name: Hillway Parnassus Avenue

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	3	0	21	51	348	4	0	347	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	3	0	21	51	348	4	0	347	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	0	3	0	21	52	355	4	0	354	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	3	0	21	52	355	4	0	354	40
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	935	937	474	444	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	295	265	590	1116	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	257	228	536	1063	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	0.00	0.04	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	472	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			13.0			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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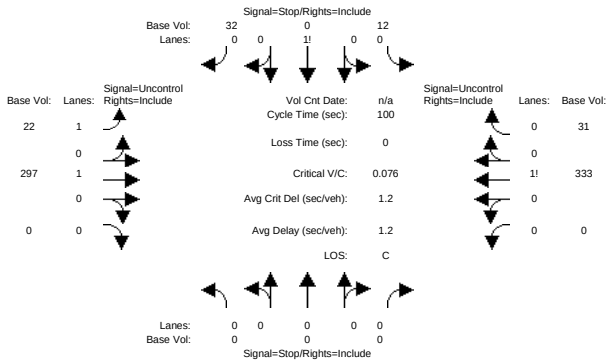
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #18: Hillway / Parnassus



Street Name: Hillway Parnassus Avenue

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	12	0	32	22	297	0	0	333	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	0	32	22	297	0	0	333	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
PHF Volume:	0	0	0	14	0	39	27	358	0	0	401	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	14	0	39	27	358	0	0	401	37
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	931	931	520	489	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	296	267	556	1075	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	263	236	504	1023	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.05	0.00	0.08	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	404	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	15.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			15.3			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

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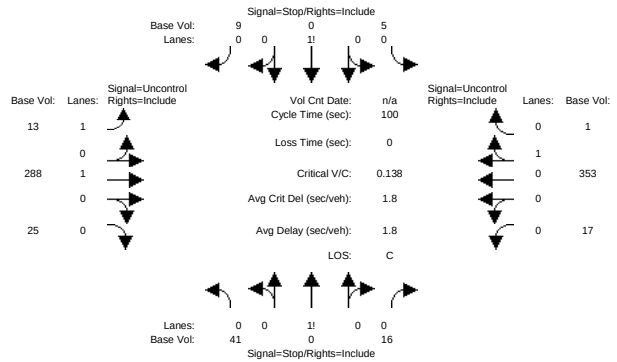
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #19: Hill Point / Parnassus




```
Street Name:            Hill Point                    Parnassus Ave
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      41    0    16     5    0     9    13  288    25    17  353     1
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   41    0    16     5    0     9    13  288    25    17  353     1
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    43    0    17     5    0     9    14  303    26    18  372     1
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   43    0    17     5    0     9    14  303    26    18  372     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  756  752   316   760  765   372   373 xxxx xxxxx   329 xxxx xxxxx
Potent Cap.:  324  339   724   323  333   674  1186 xxxx xxxxx  1230 xxxx xxxxx
Move Cap.:    313  330   724   309  325   674  1186 xxxx xxxxx  1230 xxxx xxxxx
Volume/Cap:  0.14 0.00  0.02  0.02 0.00  0.01  0.01 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.1 xxxx xxxxx   8.0 xxxx xxxxx
LOS by Move:     *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  373 xxxxx  xxxx  474 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.6 xxxxx xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 16.5 xxxxx xxxxx 12.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:      *    C     *     *    B     *     *    *     *     *    *     *
ApproachDel:      16.5            12.8           xxxxxx           xxxxxx
ApproachLOS:         C               B              *                *
Note: Queue reported is the number of cars per lane.
```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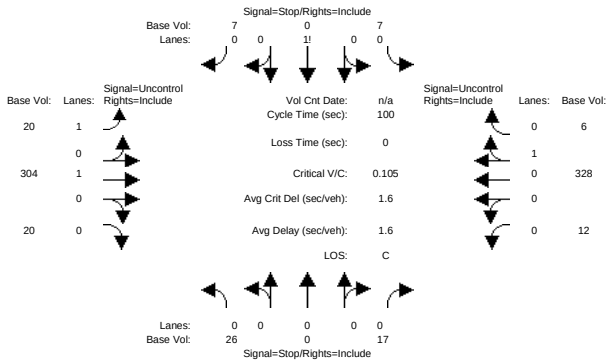
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #19: Hill Point / Parnassus




```
Street Name:            Hill Point                    Parnassus Ave
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      26    0    17     7    0     7    20  304    20    12  328     6
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   26    0    17     7    0     7    20  304    20    12  328     6
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87  0.87 0.87  0.87
PHF Volume:    30    0    20     8    0     8    23  349    23    14  377     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   30    0    20     8    0     8    23  349    23    14  377     7
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  819  818   361   825  826   380   384 xxxx xxxxx   372 xxxx xxxxx
Potent Cap.:  294  310   684   292  307   667  1175 xxxx xxxxx  1186 xxxx xxxxx
Move Cap.:    284  301   684   277  298   667  1175 xxxx xxxxx  1186 xxxx xxxxx
Volume/Cap:  0.11 0.00  0.03  0.03 0.00  0.01  0.02 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.1 xxxx xxxxx   8.1 xxxx xxxxx
LOS by Move:     *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  369 xxxxx  xxxx  391 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.5 xxxxx xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 16.3 xxxxx xxxxx 14.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:      *    C     *     *    B     *     *    *     *     *    *     *
ApproachDel:      16.3            14.6           xxxxxx           xxxxxx
ApproachLOS:         C               B              *                *
Note: Queue reported is the number of cars per lane.
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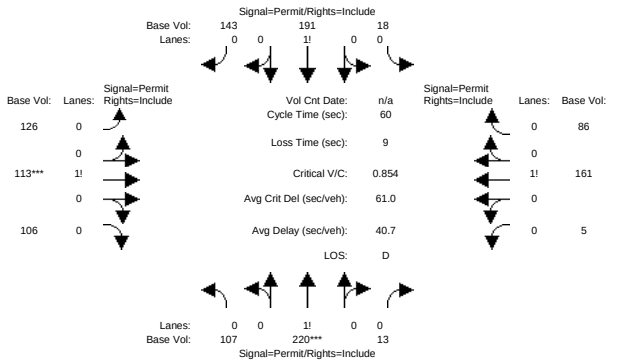
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #20: Stanyan / Parnassus



Street Name:	Stanyan						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	21	21	21	21	21	21
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	107	220	13	18	191	143	126	113	106	5	161	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	220	13	18	191	143	126	113	106	5	161	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	118	242	14	20	210	157	138	124	116	5	177	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	242	14	20	210	157	138	124	116	5	177	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	242	14	20	210	157	138	124	116	5	177	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.59	0.59	0.69	0.69	0.67	0.51	0.52	0.51	0.69	0.69	0.68
Lanes:	0.32	0.64	0.04	0.05	0.54	0.41	0.37	0.32	0.31	0.02	0.63	0.35
Final Sat.:	351	721	43	66	703	526	354	318	298	26	833	445
Capacity Analysis Module:												
Vol/Sat:	0.34	0.34	0.34	0.30	0.30	0.30	0.39	0.39	0.39	0.21	0.21	0.21
Crit Moves:		****						****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.67	0.67	0.67	0.60	0.60	0.60	1.12	1.12	1.12	0.61	0.61	0.61
Uniform Del:	11.3	11.3	11.3	10.7	10.7	10.7	19.5	19.5	19.5	16.1	16.1	16.1
IncremntDel:	6.3	6.3	6.3	4.0	4.0	4.0	84.2	84.2	84.2	5.9	5.9	5.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.6	17.6	17.6	14.7	14.7	14.7	103.7	104	103.7	22.0	22.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.6	17.6	17.6	14.7	14.7	14.7	103.7	104	103.7	22.0	22.0	22.0
LOS by Move:	B	B	B	B	B	B	F	F	F	C	C	C
HCM2kAvgQ:	7	7	7	6	6	5	14	14	14	5	5	5

Note: Queue reported is the number of cars per lane.

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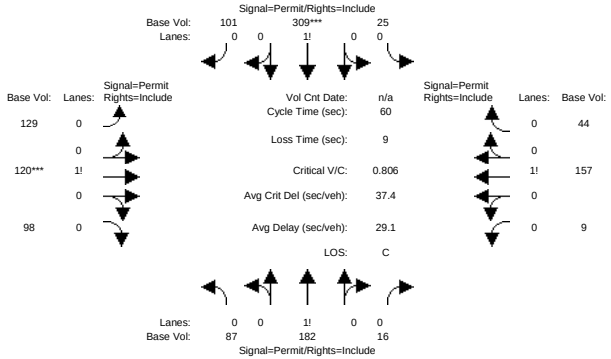
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #20: Stanyan / Parnassus



Street Name:	Stanyan						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	21	21	21	21	21	21
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	87	182	16	25	309	101	129	120	98	9	157	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	182	16	25	309	101	129	120	98	9	157	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	91	190	17	26	322	105	134	125	102	9	164	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	91	190	17	26	322	105	134	125	102	9	164	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	91	190	17	26	322	105	134	125	102	9	164	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.58	0.58	0.70	0.70	0.70	0.55	0.56	0.55	0.70	0.70	0.69
Lanes:	0.31	0.64	0.05	0.06	0.71	0.23	0.38	0.34	0.28	0.04	0.75	0.21
Final Sat.:	338	708	62	77	947	310	389	362	296	57	987	277
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.34	0.34	0.34	0.35	0.35	0.35	0.17	0.17	0.17
Crit Moves:					****			****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.54	0.54	0.54	0.68	0.68	0.68	0.99	0.99	0.99	0.47	0.47	0.47
Uniform Del:	10.2	10.2	10.2	11.4	11.4	11.4	19.4	19.4	19.4	15.2	15.2	15.2
IncremntDel:	3.7	3.7	3.7	5.5	5.5	5.5	43.7	43.7	43.7	3.4	3.4	3.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.9	13.9	13.9	16.9	16.9	16.9	63.1	63.1	63.1	18.6	18.6	18.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.9	13.9	13.9	16.9	16.9	16.9	63.1	63.1	63.1	18.6	18.6	18.6
LOS by Move:	B	B	B	B	B	B	E	E	E	B	B	B
HCM2kAvgQ:	4	5	4	7	7	7	10	10	10	4	4	4

Note: Queue reported is the number of cars per lane.

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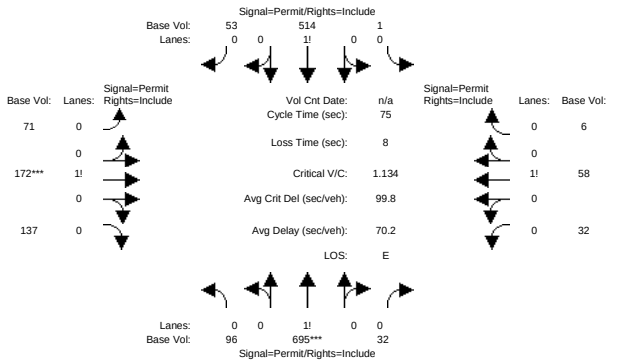
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #21: 7th Avenue / Kirkham Street



Street Name:	7th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	45	45	45	45	45	45	22	22	22	22	22	22
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	96	695	32	1	514	53	71	172	137	32	58	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	96	695	32	1	514	53	71	172	137	32	58	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	100	724	33	1	535	55	74	179	143	33	60	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	724	33	1	535	55	74	179	143	33	60	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	724	33	1	535	55	74	179	143	33	60	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.65	0.74	0.74	0.73	0.64	0.65	0.63	0.59	0.59	0.59
Lanes:	0.12	0.84	0.04	0.01	0.90	0.09	0.19	0.44	0.37	0.34	0.60	0.06
Final Sat.:	145	1049	48	2	1265	130	229	554	441	375	679	70
Capacity Analysis Module:												
Vol/Sat:	0.69	0.69	0.69	0.42	0.42	0.42	0.32	0.32	0.32	0.09	0.09	0.09
Crit Moves:		****						****				
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	1.15	1.15	1.15	0.71	0.71	0.71	1.10	1.10	1.10	0.30	0.30	0.30
Uniform Del:	15.0	15.0	15.0	10.4	10.4	10.4	26.5	26.5	26.5	20.6	20.6	20.6
IncremntDel:	82.6	82.6	82.6	5.0	5.0	5.0	78.2	78.2	78.2	2.4	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	97.6	97.6	97.6	15.4	15.4	15.4	104.7	105	104.7	22.9	22.9	22.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.6	97.6	97.6	15.4	15.4	15.4	104.7	105	104.7	22.9	22.9	22.9
LOS by Move:	F	F	F	B	B	B	F	F	F	C	C	C
HCM2kAvgQ:	37	37	37	10	10	10	18	18	18	2	2	2

Note: Queue reported is the number of cars per lane.

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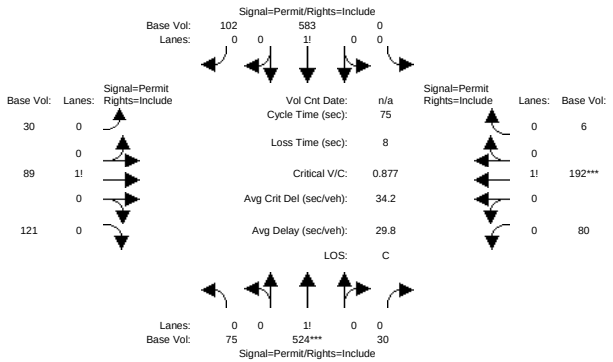
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #21: 7th Avenue / Kirkham Street



Street Name:	7th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	45	45	45	45	45	45	22	22	22	22	22	22
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	75	524	30	0	583	102	30	89	121	80	192	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	524	30	0	583	102	30	89	121	80	192	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	77	540	31	0	601	105	31	92	125	82	198	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	540	31	0	601	105	31	92	125	82	198	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	540	31	0	601	105	31	92	125	82	198	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	0.64	0.64	1.00	0.73	0.73	0.65	0.66	0.63	0.59	0.60	0.60
Lanes:	0.12	0.83	0.05	0.00	0.85	0.15	0.12	0.36	0.52	0.29	0.69	0.02
Final Sat.:	145	1014	58	0	1182	207	152	452	614	329	789	25
Capacity Analysis Module:												
Vol/Sat:	0.53	0.53	0.53	0.00	0.51	0.51	0.20	0.20	0.20	0.25	0.25	0.25
Crit Moves:		****									****	
Green/Cycle:	0.60	0.60	0.60	0.00	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.89	0.89	0.89	0.00	0.85	0.85	0.69	0.69	0.69	0.86	0.86	0.86
Uniform Del:	12.8	12.8	12.8	0.0	12.2	12.2	23.5	23.5	23.5	25.0	25.0	25.0
IncremntDel:	15.0	15.0	15.0	0.0	10.4	10.4	10.6	10.6	10.6	23.4	23.4	23.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	27.9	27.9	27.9	0.0	22.7	22.7	34.1	34.1	34.1	48.4	48.4	48.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.9	27.9	27.9	0.0	22.7	22.7	34.1	34.1	34.1	48.4	48.4	48.4
LOS by Move:	C	C	C	A	C	C	C	C	C	D	D	D
HCM2kAvgQ:	17	17	17	0	13	13	7	7	6	9	9	9

Note: Queue reported is the number of cars per lane.

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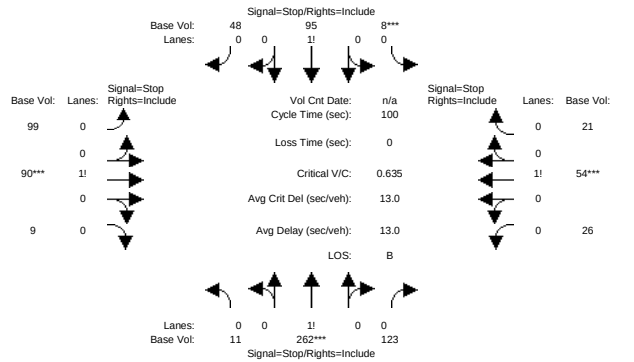
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #22: 6th Avenue / Kirkham Street



Street Name:	6th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	11	262	123	8	95	48	99	90	9	26	54	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	262	123	8	95	48	99	90	9	26	54	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	13	298	140	9	108	55	113	102	10	30	61	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	298	140	9	108	55	113	102	10	30	61	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	298	140	9	108	55	113	102	10	30	61	24
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.03	0.66	0.31	0.05	0.63	0.32	0.50	0.45	0.05	0.26	0.53	0.21
Final Sat.:	20	469	220	33	396	200	293	266	27	144	299	116
Capacity Analysis Module:												
Vol/Sat:	0.64	0.64	0.64	0.27	0.27	0.27	0.38	0.38	0.38	0.21	0.21	0.21
Crit Moves:		****		****				****			****	
Delay/Veh:	15.5	15.5	15.5	10.1	10.1	10.1	11.8	11.8	11.8	10.0	10.0	10.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.5	15.5	15.5	10.1	10.1	10.1	11.8	11.8	11.8	10.0	10.0	10.0
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:		15.5			10.1			11.8			10.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.5			10.1			11.8			10.0	
LOS by Appr:		C			B			B			B	
AllWayAvgQ:	1.5	1.5	1.5	0.3	0.3	0.3	0.5	0.5	0.5	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

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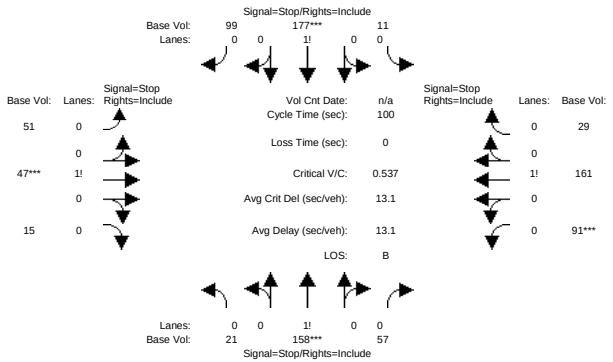
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #22: 6th Avenue / Kirkham Street



Street Name:	6th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	21	158	57	11	177	99	51	47	15	91	161	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	158	57	11	177	99	51	47	15	91	161	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	24	180	65	13	201	113	58	53	17	103	183	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	180	65	13	201	113	58	53	17	103	183	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	180	65	13	201	113	58	53	17	103	183	33
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.67	0.24	0.04	0.62	0.34	0.45	0.42	0.13	0.32	0.58	0.10
Final Sat.:	54	404	146	24	387	217	236	218	69	193	341	61
Capacity Analysis Module:												
Vol/Sat:	0.44	0.44	0.44	0.52	0.52	0.52	0.25	0.25	0.25	0.54	0.54	0.54
Crit Moves:		****			****			****			****	
Delay/Veh:	12.5	12.5	12.5	13.5	13.5	13.5	10.7	10.7	10.7	14.4	14.4	14.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	12.5	12.5	13.5	13.5	13.5	10.7	10.7	10.7	14.4	14.4	14.4
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
ApproachDel:		12.5			13.5			10.7			14.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.5			13.5			10.7			14.4	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.7	0.7	0.7	0.9	0.9	0.9	0.2	0.2	0.2	0.9	0.9	0.9

Note: Queue reported is the number of cars per lane.

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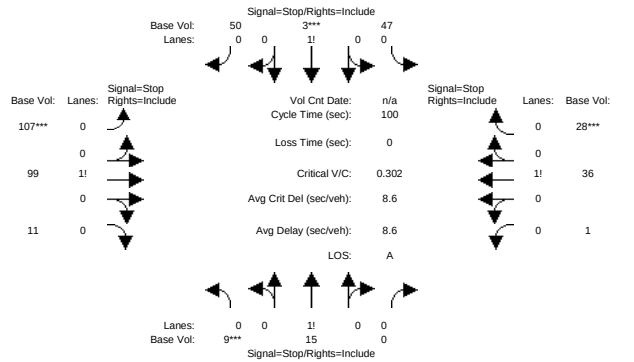
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #23: 5th Avenue / Kirkham Street



Street Name:	5th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	9	15	0	47	3	50	107	99	11	1	36	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	15	0	47	3	50	107	99	11	1	36	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	10	17	0	53	3	56	120	111	12	1	40	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	17	0	53	3	56	120	111	12	1	40	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	17	0	53	3	56	120	111	12	1	40	31
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.38	0.62	0.00	0.47	0.03	0.50	0.49	0.46	0.05	0.02	0.55	0.43
Final Sat.:	264	440	0	361	23	385	398	368	41	13	455	354
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	xxxx	0.15	0.15	0.15	0.30	0.30	0.30	0.09	0.09	0.09
Crit Moves:	****				****		****					****
Delay/Veh:	8.0	8.0	0.0	8.1	8.1	8.1	9.2	9.2	9.2	7.6	7.6	7.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.0	8.0	0.0	8.1	8.1	8.1	9.2	9.2	9.2	7.6	7.6	7.6
LOS by Move:	A	A	*	A	A	A	A	A	A	A	A	A
ApproachDel:		8.0			8.1			9.2			7.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.0			8.1			9.2			7.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.0	0.0	0.0	0.2	0.2	0.2	0.4	0.4	0.4	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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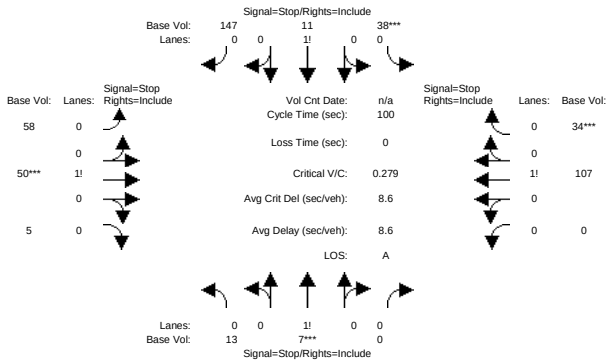
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #23: 5th Avenue / Kirkham Street



Street Name:	5th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	13	7	0	38	11	147	58	50	5	0	107	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	7	0	38	11	147	58	50	5	0	107	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	15	8	0	44	13	171	67	58	6	0	124	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	8	0	44	13	171	67	58	6	0	124	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	8	0	44	13	171	67	58	6	0	124	40
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.65	0.35	0.00	0.19	0.06	0.75	0.52	0.44	0.04	0.00	0.76	0.24
Final Sat.:	441	238	0	159	46	614	374	323	32	0	585	186
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	xxxx	0.28	0.28	0.28	0.18	0.18	0.18	xxxx	0.21	0.21
Crit Moves:		****			****				****			****
Delay/Veh:	8.1	8.1	0.0	8.7	8.7	8.7	8.7	8.7	8.7	0.0	8.6	8.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	0.0	8.7	8.7	8.7	8.7	8.7	8.7	0.0	8.6	8.6
LOS by Move:	A	A	*	A	A	A	A	A	A	*	A	A
ApproachDel:		8.1			8.7			8.7			8.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.1			8.7			8.7			8.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.0	0.0	0.0	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

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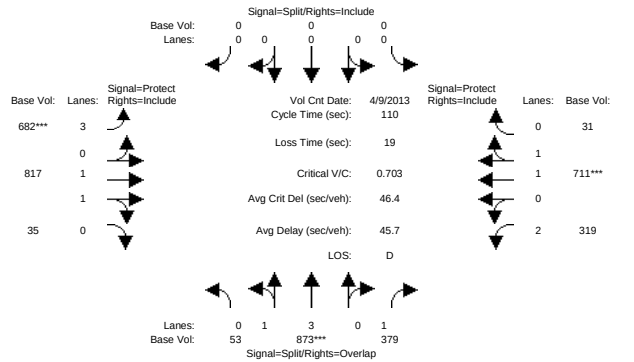
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #24: King/3rd

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Street Name:            3rd Street                    King Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   39   39   39     0    0    0     18   37   37     13   34   34
Y+R:         7.0  7.0  7.0   4.0  4.0  4.0    7.0  7.0  7.0    5.5  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 Apr 2013 << 7:00-8:45am
Base Vol:     53  873  379     0    0    0    682  817   35    319  711   31
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  53  873  379     0    0    0    682  817   35    319  711   31
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:   56  919  399     0    0    0    718  860   37    336  748   33
Reduct Vol:    0    0    0     0    0    0      0    0    0      0    0    0
Reduced Vol:  56  919  399     0    0    0    718  860   37    336  748   33
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  56  919  399     0    0    0    718  860   37    336  748   33
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.77 0.77 0.71  1.00 1.00 1.00  0.79 0.81 0.80  0.79 0.81 0.80
Lanes:       0.23 3.77 1.00  0.00 0.00 0.00  3.00 1.92 0.08  2.00 1.92 0.08
Final Sat.:   336 5528 1344     0    0    0  4480 2934  126  2987 2932  128
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.17 0.30  0.00 0.00 0.00  0.16 0.29 0.29  0.11 0.26 0.26
Crit Moves:       ****                        ****                   ****
Green/Cycle: 0.35 0.35 0.48  0.00 0.00 0.00  0.16 0.35 0.35  0.12 0.31 0.31
Volume/Cap:  0.47 0.47 0.62  0.00 0.00 0.00  0.98 0.84 0.84  0.91 0.83 0.83
Uniform Del: 27.5 27.5 21.4   0.0  0.0  0.0  45.8 32.9 32.9  47.7 35.3 35.3
IncremntDel:  0.8  0.8  4.5   0.0  0.0  0.0  28.6  7.8  7.8  29.7  8.2  8.2
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  0.00 0.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   28.2 28.2 25.8   0.0  0.0  0.0  74.4 40.7 40.7  77.3 43.4 43.4
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  28.2 28.2 25.8   0.0  0.0  0.0  74.4 40.7 40.7  77.3 43.4 43.4
LOS by Move:    C    C    C     A    A    A     E    D    D     E    D    D
HCM2kAvgQ:      7    7    9     0    0    0     9   14   14     9   15   15
Note: Queue reported is the number of cars per lane.
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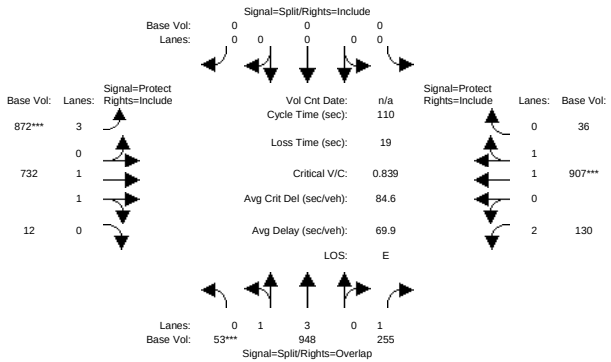
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #24: King/3rd




```
Street Name:            3rd Street                    King Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   39   39   39     0    0    0     18   37   37     13   34   34
Y+R:         7.0  7.0  7.0   4.0  4.0  4.0    7.0  7.0  7.0    5.5  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     53  948  255     0    0    0    872  732   12    130  907   36
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  53  948  255     0    0    0    872  732   12    130  907   36
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:   55  977  263     0    0    0    899  755   12    134  935   37
Reduct Vol:    0    0    0     0    0    0      0    0    0      0    0    0
Reduced Vol:  55  977  263     0    0    0    899  755   12    134  935   37
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  55  977  263     0    0    0    899  755   12    134  935   37
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.77 0.77 0.71  1.00 1.00 1.00  0.79 0.81 0.81  0.79 0.81 0.80
Lanes:       0.21 3.79 1.00  0.00 0.00 0.00  3.00 1.97 0.03  2.00 1.92 0.08
Final Sat.:   310 5553 1353     0    0    0  4480 3023   50  2987 2943  117
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.18 0.19  0.00 0.00 0.00  0.20 0.25 0.25  0.04 0.32 0.32
Crit Moves:  ****                           ****                   ****
Green/Cycle: 0.35 0.35 0.48  0.00 0.00 0.00  0.16 0.35 0.35  0.12 0.31 0.31
Volume/Cap:  0.50 0.50 0.41  0.00 0.00 0.00  1.23 0.71 0.71  0.37 1.03 1.03
Uniform Del: 27.8 27.8 18.6   0.0  0.0  0.0  46.0 31.0 31.0  44.3 38.0 38.0
IncremntDel:  0.9  0.9  1.9   0.0  0.0  0.0 113.8  4.0  4.0   2.8 36.6 36.6
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  0.00 0.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   28.7 28.7 20.5   0.0  0.0  0.0 159.8 35.0 35.0  47.1 74.6 74.6
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  28.7 28.7 20.5   0.0  0.0  0.0 159.8 35.0 35.0  47.1 74.6 74.6
LOS by Move:    C    C    C     A    A    A     F    D    D     D    E    E
HCM2kAvgQ:      7    7    6     0    0    0    17   11   11     2   25   24
Note: Queue reported is the number of cars per lane.
```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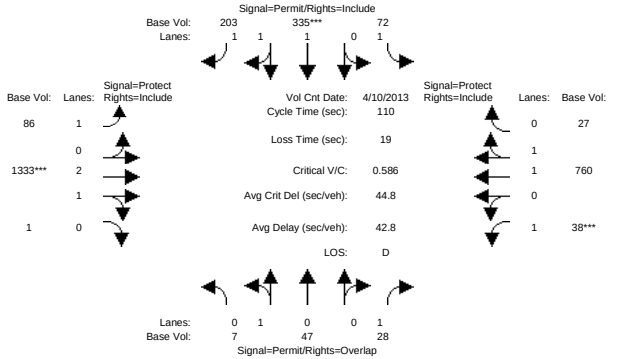
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #25: King/4th




```
Street Name:            4th Street                    King Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    39   39   39    39   39   39    15   37   37    15   37   37
Y+R:          6.0  6.0  6.0   6.0  6.0  6.0   7.0  7.0  7.0   7.0  7.0  7.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 10 Apr 2013 << 7:00-8:45am
Base Vol:       7   47   28    72  335  203    86 1333    1    38  760   27
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    7   47   28    72  335  203    86 1333    1    38  760   27
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.70  1.00 1.00 1.00
PHF Adj:     0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93
PHF Volume:     8   51   30    77  360  218    92 1433    1    41  817   29
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    8   51   30    77  360  218    92 1433    1    41  817   29
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    8   51   30    77  360  218    92 1433    1    41  817   29
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.81 0.69  0.59 0.76 0.74  0.81 0.78 0.78  0.81 0.81 0.80
Lanes:       0.13 0.87 1.00  1.00 1.85 1.15  1.00 2.99 0.01  1.00 1.93 0.07
Final Sat.:   200 1341 1319  1120 2684 1627  1539 4422    2  1539 2958  105
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.04 0.02  0.07 0.13 0.13  0.06 0.32 0.32  0.03 0.28 0.28
Crit Moves:                       ****           ****       ****
Green/Cycle: 0.35 0.35 0.49  0.35 0.35 0.35  0.14 0.34 0.34  0.14 0.34 0.34
Volume/Cap:  0.11 0.11 0.05  0.20 0.38 0.38  0.44 0.96 0.96  0.19 0.82 0.82
Uniform Del: 23.8 23.8 14.6  24.6 26.5 26.5  43.6 35.8 35.8  42.1 33.5 33.5
IncremntDel:  0.4  0.4  0.1   1.1  0.7  0.7   6.6 16.2 16.2   2.1  7.4  7.4
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   24.2 24.2 14.7  25.7 27.2 27.2  50.2 52.0 52.0  44.2 40.8 40.8
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  24.2 24.2 14.7  25.7 27.2 27.2  50.2 52.0 52.0  44.2 40.8 40.8
LOS by Move:    C    C     B     C    C    C     D    D    D     D    D    D
HCM2kAvgQ:      1    1     1     2    5    5     3   23   23     1   14   14
Note: Queue reported is the number of cars per lane.
```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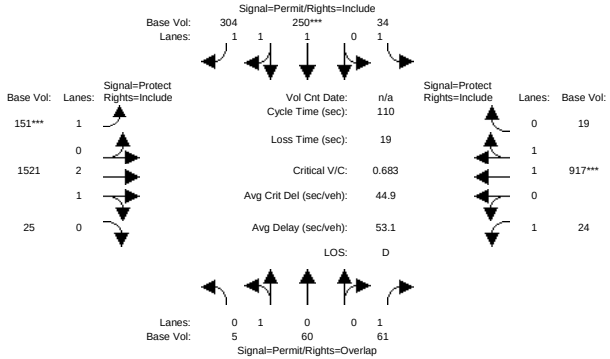
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #25: King/4th




```
Street Name:            4th Street                    King Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    39   39   39    39   39   39    15   37   37    15   37   37
Y+R:          6.0  6.0  6.0   6.0  6.0  6.0   7.0  7.0  7.0   7.0  7.0  7.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       5   60   61    34  250  304   151 1521   25    24  917   19
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    5   60   61    34  250  304   151 1521   25    24  917   19
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:     5   62   63    35  258  313   156 1568   26    25  945   20
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    5   62   63    35  258  313   156 1568   26    25  945   20
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    5   62   63    35  258  313   156 1568   26    25  945   20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.83 0.83 0.59  0.51 0.74 0.62  0.81 0.81 0.77  0.81 0.81 0.80
Lanes:       0.08 0.92 1.00  1.00 1.22 1.78  1.00 2.95 0.05  1.00 1.96 0.04
Final Sat.:   122 1462 1126   975 1724 2096  1539 4557   75  1539 3007   62
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.04 0.06  0.04 0.15 0.15  0.10 0.34 0.34  0.02 0.31 0.31
Crit Moves:                       ****           ****            ****
Green/Cycle: 0.35 0.35 0.49  0.35 0.35 0.35  0.14 0.34 0.34  0.14 0.34 0.34
Volume/Cap:  0.12 0.12 0.11  0.10 0.42 0.42  0.74 1.02 1.02  0.12 0.93 0.93
Uniform Del: 23.9 23.9 15.1  23.8 26.9 26.9  45.6 36.5 36.5  41.7 35.3 35.3
IncremntDel:  0.4  0.4  0.4   0.6  1.0  1.0  20.9 28.8 28.8   1.1 16.1 16.1
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   24.4 24.4 15.5  24.4 27.9 27.9  66.5 65.3 65.3  42.8 51.4 51.4
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  24.4 24.4 15.5  24.4 27.9 27.9  66.5 65.3 65.3  42.8 51.4 51.4
LOS by Move:    C    C     B     C    C    C     E    E     E     D    D    D
HCM2kAvgQ:      1    1     1     1    6    5     7   27    26     1   16   16
Note: Queue reported is the number of cars per lane.
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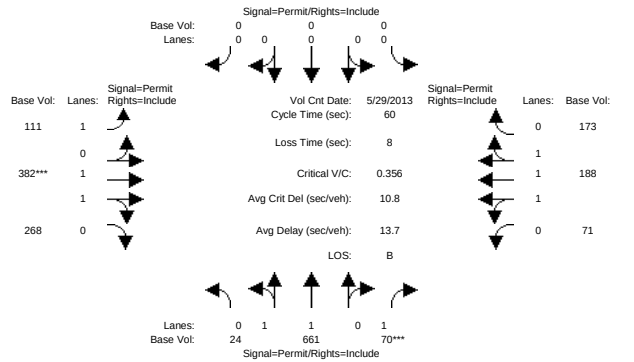
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	21	0	21	0	0	31	31	0	31	31
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am												
Base Vol:	24	661	70	0	0	0	111	382	268	71	188	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	661	70	0	0	0	111	382	268	71	188	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	715	76	0	0	0	120	413	290	77	203	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	715	76	0	0	0	120	413	290	77	203	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	715	76	0	0	0	120	413	290	77	203	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.40	0.76	0.74	0.55	0.55	0.54
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.17	0.83	0.55	1.45	1.00
Final Sat.:	107	2956	1200	0	0	0	764	1683	1181	573	1518	1035
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.06	0.00	0.00	0.00	0.16	0.25	0.25	0.13	0.13	0.18
Crit Moves:			****					****				
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.69	0.69	0.18	0.00	0.00	0.00	0.30	0.48	0.48	0.26	0.26	0.35
Uniform Del:	16.7	16.7	13.5	0.0	0.0	0.0	8.3	9.3	9.3	8.1	8.1	8.6
IncremntDel:	3.7	3.7	0.9	0.0	0.0	0.0	2.0	1.1	1.1	0.3	0.3	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.4	20.4	14.5	0.0	0.0	0.0	10.3	10.4	10.4	8.4	8.4	9.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.4	20.4	14.5	0.0	0.0	0.0	10.3	10.4	10.4	8.4	8.4	9.3
LOS by Move:	C	C	B	A	A	A	B	B	B	A	A	A
HCM2kAvgQ:	8	8	1	0	0	0	2	5	5	2	2	3

Note: Queue reported is the number of cars per lane.

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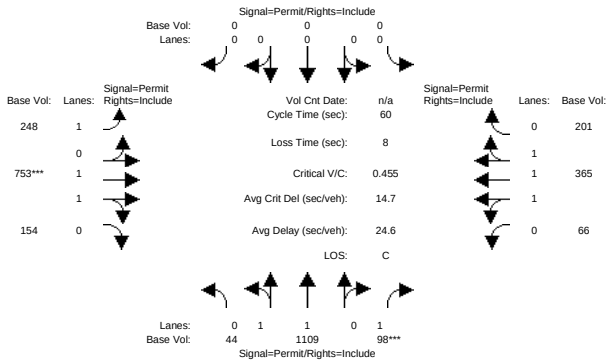
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	44	1109	98	0	0	0	248	753	154	66	365	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	1109	98	0	0	0	248	753	154	66	365	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	45	1139	101	0	0	0	255	773	158	68	375	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	1139	101	0	0	0	255	773	158	68	375	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	1139	101	0	0	0	255	773	158	68	375	206
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.33	0.79	0.78	0.56	0.56	0.55
Lanes:	0.08	1.92	1.00	0.00	0.00	0.00	1.00	1.66	0.34	0.31	1.73	0.96
Final Sat.:	117	2946	1202	0	0	0	624	2488	509	330	1826	1006
Capacity Analysis Module:												
Vol/Sat:	0.39	0.39	0.08	0.00	0.00	0.00	0.41	0.31	0.31	0.21	0.21	0.21
Crit Moves:			****					****				
Green/Cycle:	0.40	0.40	0.40	0.00	0.00	0.00	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.97	0.97	0.21	0.00	0.00	0.00	0.87	0.67	0.67	0.44	0.44	0.44
Uniform Del:	17.6	17.6	11.8	0.0	0.0	0.0	14.4	12.4	12.4	10.7	10.7	10.7
IncremntDel:	18.8	18.8	1.0	0.0	0.0	0.0	28.6	2.5	2.5	1.0	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.4	36.4	12.8	0.0	0.0	0.0	43.0	14.9	14.9	11.7	11.7	11.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.4	36.4	12.8	0.0	0.0	0.0	43.0	14.9	14.9	11.7	11.7	11.7
LOS by Move:	D	D	B	A	A	A	D	B	B	B	B	B
HCM2kAvgQ:	18	18	1	0	0	0	8	8	8	3	3	3

Note: Queue reported is the number of cars per lane.

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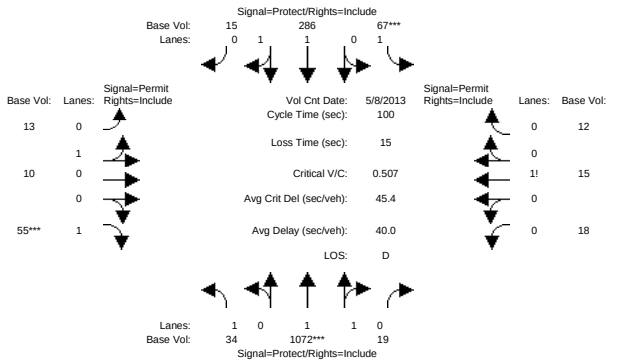
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	36	36	17	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	34	1072	19	67	286	15	13	10	55	18	15	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	1072	19	67	286	15	13	10	55	18	15	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	36	1128	20	71	301	16	14	11	58	19	16	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1128	20	71	301	16	14	11	58	19	16	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	1128	20	71	301	16	14	11	58	19	16	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.74	0.76	0.69	0.74	0.75	0.74
Lanes:	1.00	1.96	0.04	1.00	1.90	0.10	0.57	0.43	1.00	0.40	0.33	0.27
Final Sat.:	1539	3312	59	1539	2905	152	806	620	1313	564	470	376
Capacity Analysis Module:												
Vol/Sat:	0.02	0.34	0.34	0.05	0.10	0.10	0.02	0.02	0.04	0.03	0.03	0.03
Crit Moves:		****		****					****			
Green/Cycle:	0.15	0.36	0.36	0.17	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.15	0.95	0.95	0.27	0.27	0.27	0.05	0.05	0.14	0.11	0.11	0.11
Uniform Del:	37.0	31.1	31.1	36.1	21.4	21.4	23.5	23.5	24.2	23.9	23.9	23.9
IncremntDel:	1.4	15.8	15.8	2.5	0.6	0.6	0.2	0.2	0.7	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	46.9	46.9	38.6	22.0	22.0	23.7	23.7	24.9	24.4	24.4	24.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	46.9	46.9	38.6	22.0	22.0	23.7	23.7	24.9	24.4	24.4	24.4
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	19	17	2	4	4	0	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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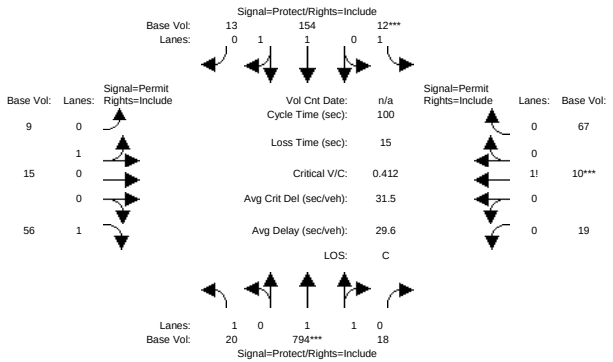
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	36	36	17	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	794	18	12	154	13	9	15	56	19	10	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	794	18	12	154	13	9	15	56	19	10	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	836	19	13	162	14	9	16	59	20	11	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	836	19	13	162	14	9	16	59	20	11	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	836	19	13	162	14	9	16	59	20	11	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.80	0.81	0.80	0.79	0.76	0.79	0.65	0.72	0.73	0.68
Lanes:	1.00	1.95	0.05	1.00	1.84	0.16	0.38	0.62	1.00	0.19	0.10	0.71
Final Sat.:	1539	3148	71	1539	2802	237	555	924	1226	260	137	918
Capacity Analysis Module:												
Vol/Sat:	0.01	0.27	0.27	0.01	0.06	0.06	0.02	0.02	0.05	0.08	0.08	0.08
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.36	0.36	0.17	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.09	0.74	0.74	0.05	0.15	0.15	0.05	0.05	0.15	0.24	0.24	0.24
Uniform Del:	36.6	27.9	27.9	34.7	20.4	20.4	23.5	23.5	24.3	25.0	25.0	25.0
IncremntDel:	0.8	4.2	4.2	0.3	0.3	0.3	0.2	0.2	0.8	1.3	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.4	32.1	32.1	35.1	20.7	20.7	23.7	23.7	25.1	26.4	26.4	26.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	32.1	32.1	35.1	20.7	20.7	23.7	23.7	25.1	26.4	26.4	26.4
LOS by Move:	D	C	C	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	12	12	0	2	2	1	1	1	2	3	2

Note: Queue reported is the number of cars per lane.

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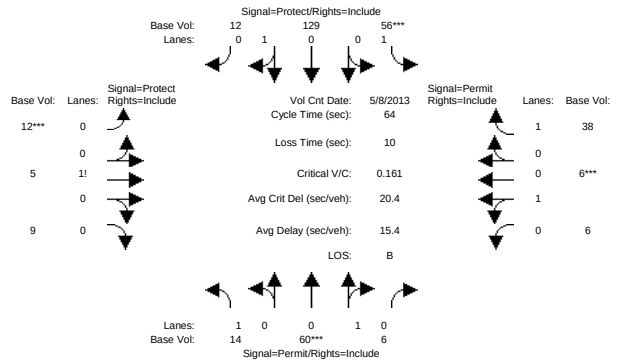
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	21	21	14	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	14	60	6	56	129	12	12	5	9	6	6	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	60	6	56	129	12	12	5	9	6	6	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	16	71	7	66	152	14	14	6	11	7	7	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	71	7	66	152	14	14	6	11	7	7	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	71	7	66	152	14	14	6	11	7	7	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.51	0.67	0.67	0.81	0.84	0.84	0.69	0.69	0.67	0.80	0.84	0.66
Lanes:	1.00	0.91	0.09	1.00	0.91	0.09	0.46	0.19	0.35	0.51	0.49	1.00
Final Sat.:	963	1161	116	1539	1463	136	603	251	452	779	779	1260
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.06	0.04	0.10	0.10	0.02	0.02	0.02	0.01	0.01	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.05	0.19	0.19	0.20	0.19	0.19	0.17	0.08	0.08	0.06	0.06	0.23
Uniform Del:	14.7	15.4	15.4	20.4	7.3	7.3	24.2	16.2	16.2	23.0	23.0	23.6
IncremntDel:	0.3	1.0	1.0	1.3	0.5	0.5	1.9	0.4	0.4	0.5	0.5	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.0	16.4	16.4	21.7	7.8	7.8	26.2	16.6	16.6	23.4	23.4	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.0	16.4	16.4	21.7	7.8	7.8	26.2	16.6	16.6	23.4	23.4	26.3
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	1	1	1	2	2	0	0	0	0	0	1

Note: Queue reported is the number of cars per lane.

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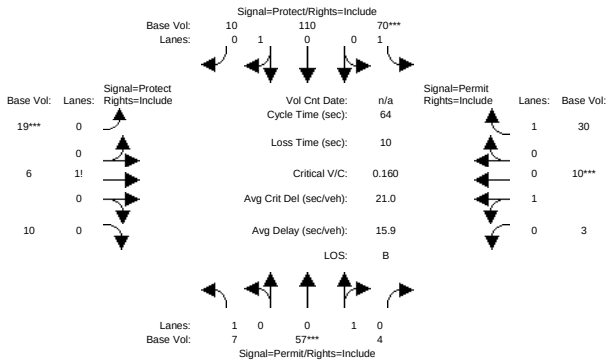
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	21	21	14	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	7	57	4	70	110	10	19	6	10	3	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	57	4	70	110	10	19	6	10	3	10	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	7	60	4	74	116	11	20	6	11	3	11	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	60	4	74	116	11	20	6	11	3	11	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	60	4	74	116	11	20	6	11	3	11	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.43	0.68	0.66	0.81	0.84	0.83	0.70	0.70	0.63	0.78	0.84	0.64
Lanes:	1.00	0.93	0.07	1.00	0.92	0.08	0.52	0.17	0.31	0.24	0.76	1.00
Final Sat.:	810	1198	84	1539	1466	133	698	220	367	364	1212	1220
Capacity Analysis Module:												
Vol/Sat:	0.01	0.05	0.05	0.05	0.08	0.08	0.03	0.03	0.03	0.01	0.01	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.03	0.15	0.15	0.22	0.14	0.14	0.20	0.10	0.10	0.06	0.06	0.17
Uniform Del:	14.6	15.2	15.2	20.5	7.1	7.1	24.3	16.3	16.3	23.0	23.0	23.4
IncremntDel:	0.2	0.8	0.8	1.5	0.3	0.3	2.5	0.5	0.5	0.4	0.4	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.8	16.0	16.0	22.0	7.5	7.5	26.9	16.8	16.8	23.4	23.4	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	16.0	16.0	22.0	7.5	7.5	26.9	16.8	16.8	23.4	23.4	25.2
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	1	1	1	1	1	1	0	0	0	0	1

Note: Queue reported is the number of cars per lane.

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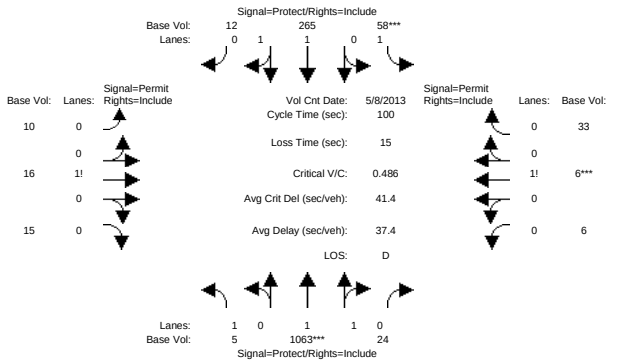
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #29: Mission Rock/3rd

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Street Name:            3rd Street                      Mission Rock
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   37   37    15   37   37    33   33   33    33   33   33
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am
Base Vol:      5 1063   24    58  265   12    10   16   15     6    6   33
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   5 1063   24    58  265   12    10   16   15     6    6   33
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:    5 1119   25    61  279   13    11   17   16     6    6   35
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   5 1119   25    61  279   13    11   17   16     6    6   35
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   5 1119   25    61  279   13    11   17   16     6    6   35
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.89 0.81  0.81 0.81 0.80  0.67 0.67 0.66  0.75 0.75 0.73
Lanes:       1.00 1.95 0.05  1.00 1.91 0.09  0.24 0.39 0.37  0.13 0.13 0.74
Final Sat.:  1539 3295   74  1539 2928  133   310  496  465   185  185 1020
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.34 0.34  0.04 0.10 0.10  0.03 0.03 0.03  0.03 0.03 0.03
Crit Moves:       ****       ****                          ****
Green/Cycle: 0.15 0.37 0.37  0.15 0.37 0.37  0.33 0.33 0.33  0.33 0.33 0.33
Volume/Cap:  0.02 0.92 0.92  0.26 0.26 0.26  0.10 0.10 0.10  0.10 0.10 0.10
Uniform Del: 36.2 30.1 30.1  37.6 21.9 21.9  23.2 23.2 23.2  23.2 23.2 23.2
IncremntDel:  0.2 12.1 12.1   2.8  0.6  0.6   0.5  0.5  0.5   0.5  0.5  0.5
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   36.4 42.2 42.2  40.4 22.5 22.5  23.7 23.7 23.7  23.7 23.7 23.7
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  36.4 42.2 42.2  40.4 22.5 22.5  23.7 23.7 23.7  23.7 23.7 23.7
LOS by Move:    D    D    D     D    C    C     C    C    C     C    C    C
HCM2kAvgQ:      0   22   20     2    3    3     1    1    1     1    1    1
Note: Queue reported is the number of cars per lane.
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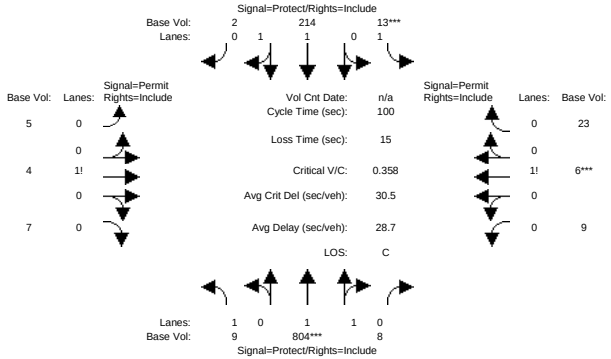
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #29: Mission Rock/3rd

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Street Name:            3rd Street                      Mission Rock
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   37   37    15   37   37    33   33   33    33   33   33
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      9  804    8    13  214    2     5    4    7     9    6   23
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   9  804    8    13  214    2     5    4    7     9    6   23
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:    9  846    8    14  225    2     5    4    7     9    6   24
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   9  846    8    14  225    2     5    4    7     9    6   24
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   9  846    8    14  225    2     5    4    7     9    6   24
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.85 0.81  0.81 0.81 0.81  0.63 0.67 0.61  0.72 0.75 0.66
Lanes:       1.00 1.98 0.02  1.00 1.98 0.02  0.31 0.24 0.45  0.23 0.14 0.63
Final Sat.:  1539 3196   32  1539 3047   28   375  300  525   309  206  790
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.26 0.26  0.01 0.07 0.07  0.01 0.01 0.01  0.03 0.03 0.03
Crit Moves:       ****       ****                          ****
Green/Cycle: 0.15 0.37 0.37  0.15 0.37 0.37  0.33 0.33 0.33  0.33 0.33 0.33
Volume/Cap:  0.04 0.72 0.72  0.06 0.20 0.20  0.04 0.04 0.04  0.09 0.09 0.09
Uniform Del: 36.3 27.0 27.0  36.4 21.4 21.4  22.8 22.8 22.8  23.2 23.2 23.2
IncremntDel:  0.3  3.7  3.7   0.5  0.4  0.4   0.2  0.2  0.2   0.4  0.4  0.4
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   36.7 30.7 30.7  36.9 21.8 21.8  23.0 23.0 23.0  23.6 23.6 23.6
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  36.7 30.7 30.7  36.9 21.8 21.8  23.0 23.0 23.0  23.6 23.6 23.6
LOS by Move:    D    C    C     D    C    C     C    C    C     C    C    C
HCM2kAvgQ:      0   13   12     0    2    2     0    0    0     1    1    1
Note: Queue reported is the number of cars per lane.
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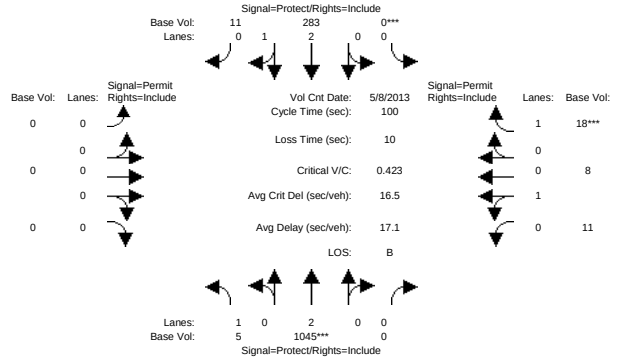
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	5	1045	0	0	283	11	0	0	0	11	8	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1045	0	0	283	11	0	0	0	11	8	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	5	1122	0	0	304	12	0	0	0	12	9	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1122	0	0	304	12	0	0	0	12	9	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1122	0	0	304	12	0	0	0	12	9	19
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.79	0.81	0.62
Lanes:	1.00	2.00	0.00	0.00	2.89	0.11	0.00	0.00	0.00	0.59	0.41	1.00
Final Sat.:	1539	3079	0	0	4233	165	0	0	0	882	642	1179
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.01	0.01	0.02
Crit Moves:		****		****								****
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.02	0.64	0.00	0.00	0.17	0.17	0.00	0.00	0.00	0.04	0.04	0.05
Uniform Del:	36.0	14.5	0.0	0.0	18.3	18.3	0.0	0.0	0.0	22.7	22.7	22.8
IncremntDel:	0.2	1.8	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	36.1	16.3	0.0	0.0	18.5	18.5	0.0	0.0	0.0	22.9	22.9	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.1	16.3	0.0	0.0	18.5	18.5	0.0	0.0	0.0	22.9	22.9	23.1
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	0	13	0	0	2	2	0	0	0	0	0	0

Note: Queue reported as the number of cars per lane.

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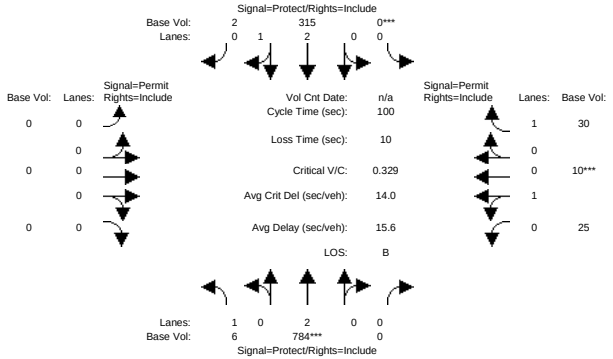
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	6	784	0	0	315	2	0	0	0	25	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	784	0	0	315	2	0	0	0	25	10	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	6	834	0	0	335	2	0	0	0	27	11	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	834	0	0	335	2	0	0	0	27	11	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	834	0	0	335	2	0	0	0	27	11	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.78	0.77	1.00	1.00	1.00	0.75	0.80	0.60
Lanes:	1.00	2.00	0.00	0.00	2.98	0.02	0.00	0.00	0.00	0.73	0.27	1.00
Final Sat.:	1539	3079	0	0	4392	28	0	0	0	1039	416	1147
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.03	0.03	0.03
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.03	0.48	0.00	0.00	0.18	0.18	0.00	0.00	0.00	0.08	0.08	0.08
Uniform Del:	36.0	12.7	0.0	0.0	18.4	18.4	0.0	0.0	0.0	23.0	23.0	23.1
IncremntDel:	0.2	0.9	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	36.2	13.6	0.0	0.0	18.6	18.6	0.0	0.0	0.0	23.3	23.3	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.2	13.6	0.0	0.0	18.6	18.6	0.0	0.0	0.0	23.3	23.3	23.5
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	0	8	0	0	2	2	0	0	0	1	1	1

Note: Queue reported as the number of cars per lane.

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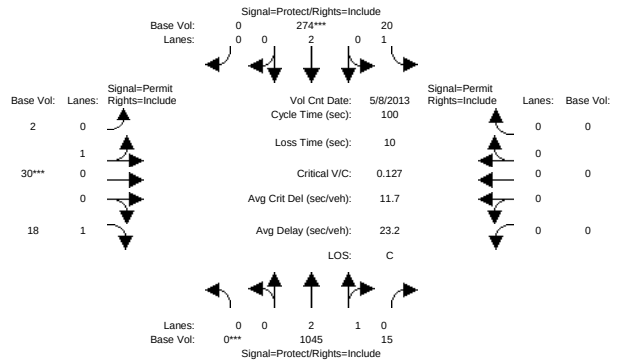
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	0	1045	15	20	274	0	2	30	18	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1045	15	20	274	0	2	30	18	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1098	16	21	288	0	2	32	19	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1098	16	21	288	0	2	32	19	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1098	16	21	288	0	2	32	19	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.85	0.85	0.62	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.06	0.94	1.00	0.00	0.00	0.00
Final Sat.:	0	4353	62	1539	3079	0	101	1510	1186	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.25	0.01	0.09	0.00	0.02	0.02	0.02	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.64	0.64	0.08	0.16	0.00	0.06	0.06	0.05	0.00	0.00	0.00
Uniform Del:	0.0	24.4	24.4	34.5	10.2	0.0	22.9	22.9	22.8	0.0	0.0	0.0
IncremntDel:	0.0	1.8	1.8	0.6	0.2	0.0	0.2	0.2	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	26.2	26.2	35.1	10.4	0.0	23.2	23.2	23.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.2	26.2	35.1	10.4	0.0	23.2	23.2	23.0	0.0	0.0	0.0
LOS by Move:	A	C	C	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	11	11	1	2	0	1	1	0	0	0	0

Note: Queue reported is the number of cars per lane.

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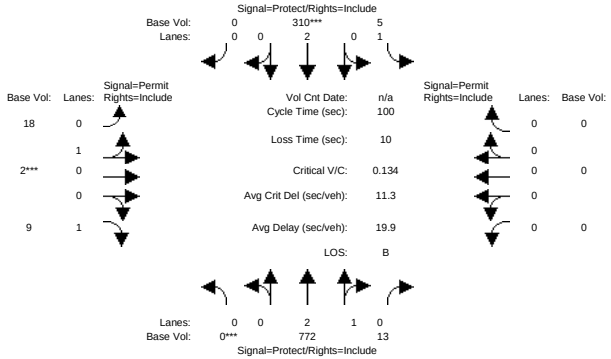
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	772	13	5	310	0	18	2	9	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	772	13	5	310	0	18	2	9	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	813	14	5	326	0	19	2	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	813	14	5	326	0	19	2	9	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	813	14	5	326	0	19	2	9	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.74	0.77	0.63	1.00	1.00	1.00
Lanes:	0.00	2.95	0.05	1.00	2.00	0.00	0.90	0.10	1.00	0.00	0.00	0.00
Final Sat.:	0	4338	73	1539	3079	0	1274	142	1188	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.19	0.00	0.11	0.00	0.01	0.01	0.01	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.47	0.47	0.02	0.19	0.00	0.05	0.05	0.02	0.00	0.00	0.00
Uniform Del:	0.0	22.5	22.5	34.2	10.3	0.0	22.8	22.8	22.6	0.0	0.0	0.0
IncremntDel:	0.0	0.9	0.9	0.1	0.2	0.0	0.2	0.2	0.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	23.4	23.4	34.3	10.6	0.0	23.0	23.0	22.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	23.4	23.4	34.3	10.6	0.0	23.0	23.0	22.7	0.0	0.0	0.0
LOS by Move:	A	C	C	C	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	7	7	0	3	0	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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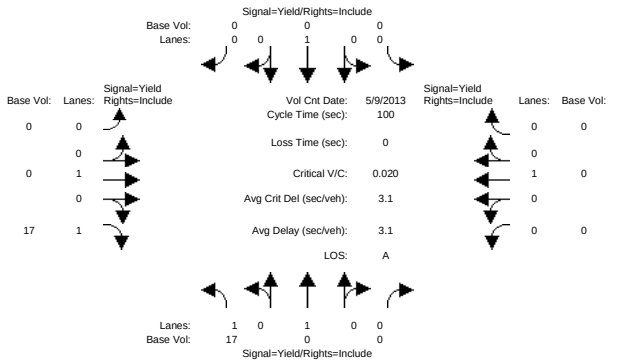
Level Of Service Computation Report
FHWA Roundabout (Base Volume Alternative)
Existing AM

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	17	0	0	0	0	0	17	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	0	0	0	0	0	0	17	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	24	0	0	0	0	0	0	0	24	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	0	0	0	0	0	0	0	24	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	0	0	0	0	0	0	0	24	0	0	0
PCE Module:												
AutoPCE:	24	0	0	0	0	0	0	0	24	0	0	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	24	0	0	0	0	0	0	0	24	0	0	0
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	0			24			0			24		
MaxVolume:	1200			xxxxxx			1200			xxxxxx		
PedVolume:	0			0			0			0		
AdjMaxVol:	1200			xxxxxx			1200			xxxxxx		
ApproachVol:	24			xxxxxx			24			xxxxxx		
ApproachV/C:	0.02			1.00			0.02			1.00		
ApproachDel:	3.1			xxxxxx			3.1			xxxxxx		
ApproachLOS:	A			*			A			*		
Queue:	0.1			xxxx			0.1			xxxx		

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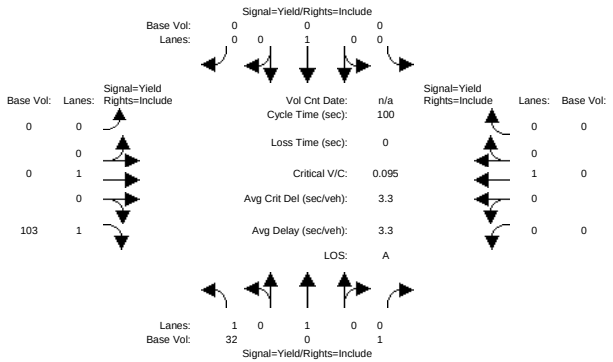
Level Of Service Computation Report
FHWA Roundabout (Base Volume Alternative)
Existing PM

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	32	0	1	0	0	0	0	0	103	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	0	1	0	0	0	0	0	103	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	36	0	1	0	0	0	0	0	114	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	0	1	0	0	0	0	0	114	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	0	1	0	0	0	0	0	114	0	0	0
PCE Module:												
AutoPCE:	36	0	1	0	0	0	0	0	114	0	0	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	36	0	1	0	0	0	0	0	114	0	0	0
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	0			36			0			36		
MaxVolume:	1200			xxxxxx			1200			xxxxxx		
PedVolume:	0			0			0			0		
AdjMaxVol:	1200			xxxxxx			1200			xxxxxx		
ApproachVol:	37			xxxxxx			114			xxxxxx		
ApproachV/C:	0.03			1.00			0.10			1.00		
ApproachDel:	3.1			xxxxxx			3.3			xxxxxx		
ApproachLOS:	A			*			A			*		
Queue:	0.1			xxxx			0.3			xxxx		

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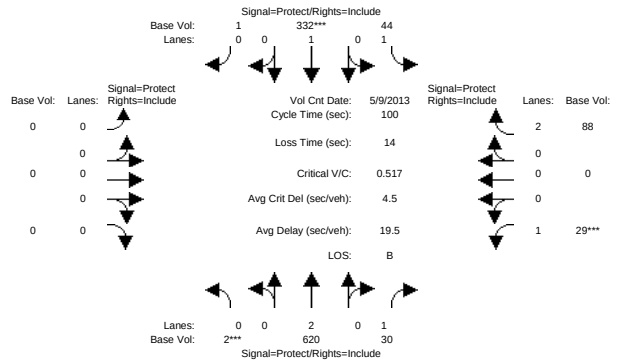
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #33: Mission Bay/7th




```
Street Name:            7th Street                    Mission Bay
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   36   36    14   61    0     0    0    0     25   0    25
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:       2  620   30    44  332    1     0    0    0     29   0    88
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    2  620   30    44  332    1     0    0    0     29   0    88
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96
PHF Volume:     2  647   31    46  347    1     0    0    0     30   0    92
Reduct Vol:     0    0    0     0    0    0     0    0    0      0   0     0
Reduced Vol:    2  647   31    46  347    1     0    0    0     30   0    92
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    2  647   31    46  347    1     0    0    0     30   0    92
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.81 0.81  0.57  0.81 0.85  0.85  1.00 1.00  1.00  0.81 1.00  0.53
Lanes:       0.01 1.99  1.00  1.00 0.99  0.01  0.00 0.00  0.00  1.00 0.00  2.00
Final Sat.:    10 3069  1079  1539 1616     5     0    0     0  1539    0  2000
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.21  0.03  0.03 0.21  0.21  0.00 0.00  0.00  0.02 0.00  0.05
Crit Moves:  ****                ****                          ****
Green/Cycle: 0.00 0.44  0.44  0.17 0.61  0.61  0.00 0.00  0.00  0.25 0.00  0.25
Volume/Cap:  xxxx 0.48  0.07  0.17 0.35  0.35  0.00 0.00  0.00  0.08 0.00  0.18
Uniform Del:  0.0 19.9  16.2  35.4  9.7   9.7   0.0  0.0   0.0  28.7  0.0  29.5
IncremntDel:  0.0  1.2   0.3   1.4  1.0   1.0   0.0  0.0   0.0   0.4  0.0   0.8
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  1.00  1.00 1.00  1.00  0.00 0.00  0.00  1.00 0.00  1.00
Delay/Veh:    0.0 21.1  16.5  36.9 10.7  10.7   0.0  0.0   0.0  29.1  0.0  30.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 21.1  16.5  36.9 10.7  10.7   0.0  0.0   0.0  29.1  0.0  30.3
LOS by Move:    A    C     B     D    B     B     A    A     A     C    A     C
HCM2kAvgQ:      9    8     1     1    5     5     0    0     0     1    0     1
Note: Queue reported is the number of cars per lane.
```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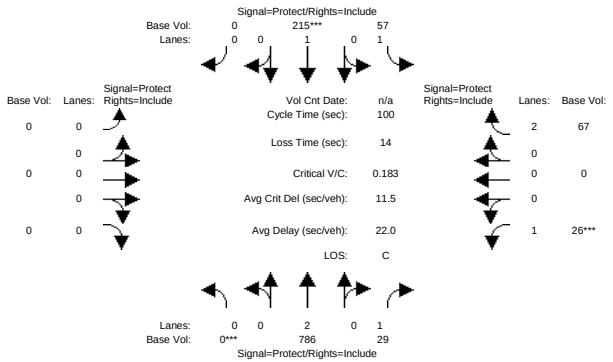
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #33: Mission Bay/7th




```
Street Name:            7th Street                    Mission Bay
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   36   36    14   61    0     0    0    0     25   0    25
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  786   29    57  215    0     0    0    0     26   0    67
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  786   29    57  215    0     0    0    0     26   0    67
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:     0  827   31    60  226    0     0    0    0     27   0    71
Reduct Vol:     0    0    0     0    0    0     0    0    0      0   0     0
Reduced Vol:    0  827   31    60  226    0     0    0    0     27   0    71
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  827   31    60  226    0     0    0    0     27   0    71
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.81  0.41  0.81 0.85  1.00  1.00 1.00  1.00  0.81 1.00  0.42
Lanes:       0.00 2.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  2.00
Final Sat.:     0 3079   784  1539 1620     0     0    0     0  1539    0  1580
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.27  0.04  0.04 0.14  0.00  0.00 0.00  0.00  0.02 0.00  0.04
Crit Moves:  ****                ****                          ****
Green/Cycle: 0.00 0.44  0.44  0.17 0.61  0.00  0.00 0.00  0.00  0.25 0.00  0.25
Volume/Cap:  0.00 0.61  0.09  0.23 0.23  0.00  0.00 0.00  0.00  0.07 0.00  0.18
Uniform Del:  0.0 21.5  16.4  35.8  8.8   0.0   0.0  0.0   0.0  28.6  0.0  29.4
IncremntDel:  0.0  2.1   0.5   2.0  0.5   0.0   0.0  0.0   0.0   0.4  0.0   1.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Delay/Veh:    0.0 23.6  16.9  37.8  9.4   0.0   0.0  0.0   0.0  29.0  0.0  30.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 23.6  16.9  37.8  9.4   0.0   0.0  0.0   0.0  29.0  0.0  30.4
LOS by Move:    A    C     B     D    A     A     A    A     A     C    A     C
HCM2kAvgQ:      0   11     1     2    3     0     0    0     0     1    0     1
Note: Queue reported is the number of cars per lane.
```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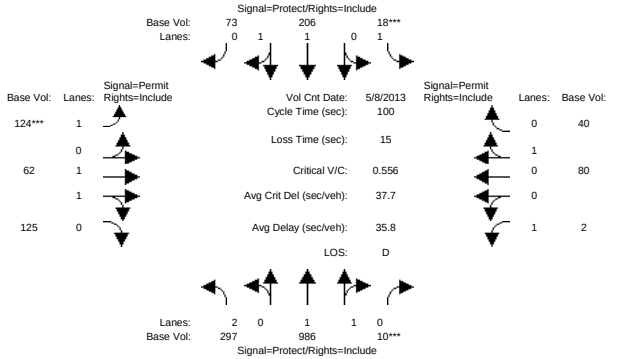
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	297	986	10	18	206	73	124	62	125	2	80	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	297	986	10	18	206	73	124	62	125	2	80	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	309	1025	10	19	214	76	129	64	130	2	83	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	309	1025	10	19	214	76	129	64	130	2	83	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	309	1025	10	19	214	76	129	64	130	2	83	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.78	0.76	0.55	0.68	0.66	0.52	0.71	0.70
Lanes:	2.00	1.98	0.02	1.00	1.47	0.53	1.00	1.00	1.00	1.00	0.66	0.34
Final Sat.:	2987	3045	31	1539	2174	770	1039	1299	1262	986	894	447
Capacity Analysis Module:												
Vol/Sat:	0.10	0.34	0.34	0.01	0.10	0.10	0.12	0.05	0.10	0.00	0.09	0.09
Crit Moves:			****	****			****					
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.74	0.89	0.89	0.10	0.27	0.27	0.35	0.14	0.29	0.01	0.27	0.27
Uniform Del:	41.2	29.0	29.0	39.2	22.7	22.7	24.1	22.2	23.6	21.2	23.3	23.3
IncremntDel:	11.1	10.0	10.0	1.1	0.6	0.6	2.7	0.2	1.1	0.0	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.3	39.0	39.0	40.3	23.4	23.4	26.8	22.4	24.7	21.2	24.7	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.3	39.0	39.0	40.3	23.4	23.4	26.8	22.4	24.7	21.2	24.7	24.7
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	5	17	17	1	3	3	3	1	3	0	3	3

Note: Queue reported is the number of cars per lane.

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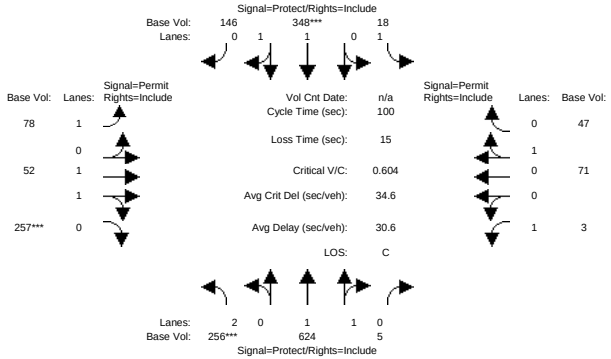
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	256	624	5	18	348	146	78	52	257	3	71	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	256	624	5	18	348	146	78	52	257	3	71	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	275	671	5	19	374	157	84	56	276	3	76	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	671	5	19	374	157	84	56	276	3	76	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	671	5	19	374	157	84	56	276	3	76	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.77	0.74	0.52	0.66	0.61	0.43	0.70	0.67
Lanes:	2.00	1.98	0.02	1.00	1.39	0.61	1.00	1.00	1.00	1.00	0.59	0.41
Final Sat.:	2987	3051	24	1539	2043	857	996	1263	1159	815	789	522
Capacity Analysis Module:												
Vol/Sat:	0.09	0.22	0.22	0.01	0.18	0.18	0.08	0.04	0.24	0.00	0.10	0.10
Crit Moves:	****				****				****			
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.66	0.58	0.58	0.10	0.51	0.51	0.24	0.13	0.68	0.01	0.28	0.28
Uniform Del:	40.7	24.6	24.6	39.2	25.1	25.1	23.1	22.1	27.7	21.2	23.4	23.4
IncremntDel:	7.9	2.1	2.1	1.1	1.8	1.8	1.6	0.1	7.5	0.1	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.6	26.7	26.7	40.4	26.8	26.8	24.7	22.2	35.2	21.3	24.9	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.6	26.7	26.7	40.4	26.8	26.8	24.7	22.2	35.2	21.3	24.9	24.9
LOS by Move:	D	C	C	D	C	C	C	C	D	C	C	C
HCM2kAvgQ:	4	9	9	1	7	7	2	1	8	0	3	3

Note: Queue reported is the number of cars per lane.

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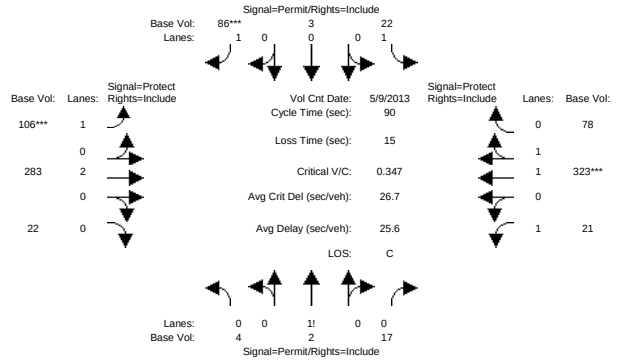
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	30	30	30	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	4	2	17	22	3	86	106	283	22	21	323	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	2	17	22	3	86	106	283	22	21	323	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	4	2	18	23	3	90	111	297	23	22	339	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	2	18	23	3	90	111	297	23	22	339	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	2	18	23	3	90	111	297	23	22	339	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	0.74	0.72	0.64	0.65	0.63	0.81	0.75	0.75	0.81	0.79	0.78
Lanes:	0.17	0.08	0.75	0.88	0.12	1.00	1.00	1.86	0.14	1.00	1.61	0.39
Final Sat.:	239	120	1016	1079	147	1193	1539	2648	206	1539	2401	580
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.02	0.02	0.08	0.07	0.11	0.11	0.01	0.14	0.14
Crit Moves:						****	****				****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.17	0.33	0.33	0.17	0.33	0.33
Volume/Cap:	0.05	0.05	0.05	0.06	0.06	0.23	0.43	0.34	0.34	0.09	0.42	0.42
Uniform Del:	20.4	20.4	20.4	20.4	20.4	21.6	33.7	22.5	22.5	31.7	23.3	23.3
IncremntDel:	0.2	0.2	0.2	0.1	0.1	1.0	5.3	1.0	1.0	0.7	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.6	20.6	20.6	20.5	20.5	22.7	39.0	23.5	23.5	32.4	24.6	24.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.6	20.6	20.6	20.5	20.5	22.7	39.0	23.5	23.5	32.4	24.6	24.6
LOS by Move:	C	C	C	C	C	C	D	C	C	C	C	C
HCM2kAvgQ:	0	0	0	1	1	2	3	4	4	1	5	5

Note: Queue reported is the number of cars per lane.

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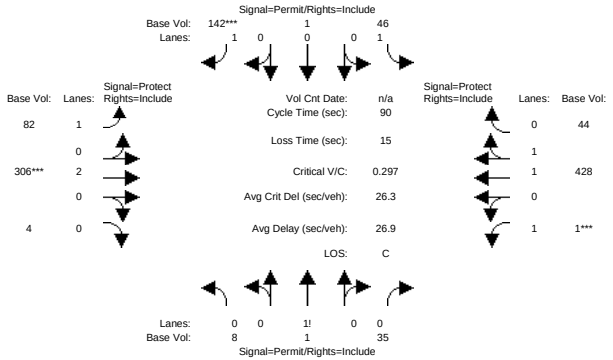
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	30	30	30	15	50	50	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	8	1	35	46	1	142	82	306	4	1	428	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	1	35	46	1	142	82	306	4	1	428	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	9	1	38	51	1	156	90	336	4	1	470	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1	38	51	1	156	90	336	4	1	470	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1	38	51	1	156	90	336	4	1	470	48
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.72	0.69	0.62	0.62	0.60	0.81	0.76	0.76	0.81	0.80	0.79
Lanes:	0.18	0.02	0.80	0.98	0.02	1.00	1.00	1.97	0.03	1.00	1.81	0.19
Final Sat.:	240	30	1048	1146	25	1136	1539	2844	37	1539	2751	283
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.04	0.04	0.14	0.06	0.12	0.12	0.00	0.17	0.17
Crit Moves:						****		****		****		
Green/Cycle:	0.27	0.27	0.27	0.27	0.27	0.27	0.20	0.45	0.45	0.14	0.39	0.39
Volume/Cap:	0.13	0.13	0.13	0.16	0.16	0.50	0.30	0.26	0.26	0.01	0.43	0.43
Uniform Del:	30.2	30.2	30.2	30.4	30.4	33.7	37.7	18.6	18.6	41.1	24.4	24.4
IncremntDel:	0.8	0.8	0.8	0.3	0.3	4.3	2.5	0.5	0.5	0.0	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.0	31.0	31.0	30.7	30.7	38.1	40.2	19.0	19.0	41.1	25.5	25.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.0	31.0	31.0	30.7	30.7	38.1	40.2	19.0	19.0	41.1	25.5	25.5
LOS by Move:	C	C	C	C	C	D	D	B	B	D	C	C
HCM2kAvgQ:	1	1	1	1	1	5	3	4	4	0	7	7

Note: Queue reported is the number of cars per lane.

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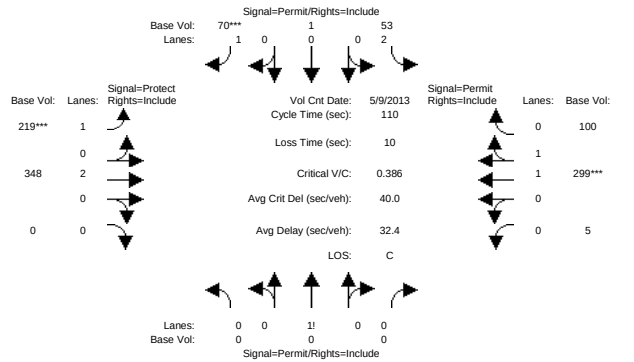
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #36: 16th/Owens




```
Street Name:            Owens St                        16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0    0    45   45   45    20   55   55    35   35   35
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:       0    0    0    53    1   70   219  348    0     5  299  100
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    0    53    1   70   219  348    0     5  299  100
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:     0    0    0    56    1   74   231  366    0     5  315  105
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    0    56    1   74   231  366    0     5  315  105
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0    0    0    56    1   74   231  366    0     5  315  105
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 1.00 1.00  0.68 0.69 0.68  0.81 0.76 1.00  0.78 0.78 0.76
Lanes:       0.00 1.00 0.00  1.96 0.04 1.00  1.00 2.00 0.00  0.02 1.48 0.50
Final Sat.:     0 1900    0  2522   48 1291  1539 2887    0    36 2179  729
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.02 0.02 0.06  0.15 0.13 0.00  0.14 0.14 0.14
Crit Moves:                          ****  ****                ****
Green/Cycle: 0.00 0.00 0.00  0.41 0.41 0.41  0.18 0.50 0.00  0.32 0.32 0.32
Volume/Cap:  0.00 0.00 0.00  0.05 0.05 0.14  0.82 0.25 0.00  0.45 0.45 0.45
Uniform Del:  0.0  0.0  0.0  19.6 19.6 20.4  43.3 15.7  0.0  29.9 29.9 29.9
IncremntDel:  0.0  0.0  0.0   0.0  0.0  0.3  23.2  0.4  0.0   1.6  1.6  1.6
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 0.00 0.00  1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00
Delay/Veh:    0.0  0.0  0.0  19.7 19.7 20.7  66.5 16.2  0.0  31.5 31.5 31.5
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0  19.7 19.7 20.7  66.5 16.2  0.0  31.5 31.5 31.5
LOS by Move:    A    A    A     B    B    C     E    B    A     C    C    C
HCM2kAvgQ:      0    0    0     1    1    2     8    4    0     6    6    6
Note: Queue reported as the number of cars per lane.
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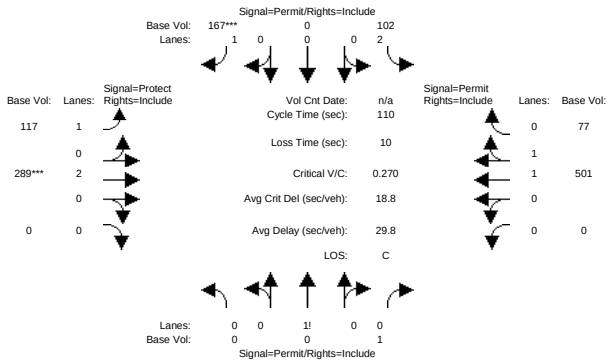
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #36: 16th/Owens




```
Street Name:            Owens St                        16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0    0    45   45   45    15   55   55    35   35   35
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    1   102    0  167   117  289    0     0  501   77
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    1   102    0  167   117  289    0     0  501   77
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:     0    0    1   107    0  176   123  304    0     0  527   81
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    1   107    0  176   123  304    0     0  527   81
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0    0    1   107    0  176   123  304    0     0  527   81
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 1.00 0.67  0.45 1.00 0.66  0.81 0.76 1.00  1.00 0.79 0.78
Lanes:       0.00 0.00 1.00  2.00 0.00 1.00  1.00 2.00 0.00  0.00 1.73 0.27
Final Sat.:     0    0 1281  1694    0 1259  1539 2887    0     0 2609  401
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.06 0.00 0.14  0.08 0.11 0.00  0.00 0.20 0.20
Crit Moves:                          ****        ****
Green/Cycle: 0.00 0.00 0.41  0.41 0.00 0.41  0.09 0.50 0.00  0.00 0.41 0.41
Volume/Cap:  0.00 0.00 0.00  0.15 0.00 0.34  0.90 0.21 0.00  0.00 0.49 0.49
Uniform Del:  0.0  0.0 19.2  20.5  0.0 22.3  49.6 15.4  0.0   0.0 23.9 23.9
IncremntDel:  0.0  0.0  0.0   0.5  0.0  1.8  53.4  0.3  0.0   0.0  1.4  1.4
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 0.00 1.00  1.00 0.00 1.00  1.00 1.00 0.00  0.00 1.00 1.00
Delay/Veh:    0.0  0.0 19.2  21.0  0.0 24.1 103.0 15.7  0.0   0.0 25.3 25.3
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0 19.2  21.0  0.0 24.1 103.0 15.7  0.0   0.0 25.3 25.3
LOS by Move:    A    A    B     C    A    C     F    B    A     A    C    C
HCM2kAvgQ:      0    0    0     1    0    4     5    3    0     0    8    8
Note: Queue reported as the number of cars per lane.
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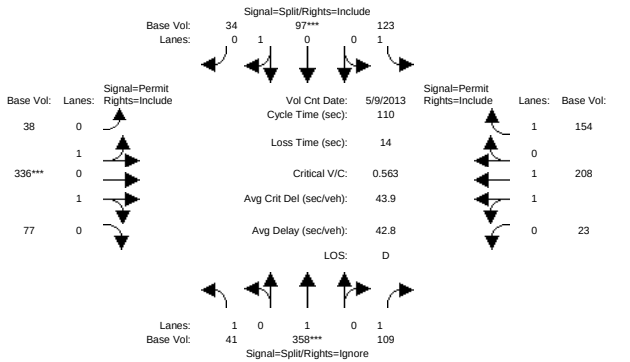
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0			
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am															
Base Vol:	41	358	109	123	97	34	38	336	77	23	208	154			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	41	358	109	123	97	34	38	336	77	23	208	154			
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
PHF Volume:	42	365	0	126	99	35	39	343	79	23	212	157			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	42	365	0	126	99	35	39	343	79	23	212	157			
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	42	365	0	126	99	35	39	343	79	23	212	157			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.81	0.85	1.00	0.81	0.72	0.70	0.66	0.67	0.66	0.70	0.71	0.67			
Lanes:	1.00	1.00	1.00	1.00	0.74	0.26	0.17	1.49	0.34	0.20	1.80	1.00			
Final Sat.:	1539	1620	1900	1539	1004	352	213	1880	431	267	2414	1264			
Capacity Analysis Module:															
Vol/Sat:	0.03	0.23	0.00	0.08	0.10	0.10	0.18	0.18	0.18	0.09	0.09	0.12			
Crit Moves:		****			****			****							
Green/Cycle:	0.38	0.38	0.00	0.22	0.22	0.22	0.30	0.30	0.30	0.30	0.30	0.30			
Volume/Cap:	0.07	0.60	0.00	0.37	0.45	0.45	0.60	0.60	0.60	0.29	0.29	0.41			
Uniform Del:	28.1	35.3	0.0	46.2	47.1	47.1	41.5	41.5	41.5	37.2	37.2	38.8			
IncremntDel:	0.2	4.4	0.0	3.0	4.7	4.7	3.5	3.5	3.5	0.9	0.9	3.2			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Delay/Veh:	28.3	39.6	0.0	49.2	51.8	51.8	45.0	45.0	45.0	38.1	38.1	42.0			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	28.3	39.6	0.0	49.2	51.8	51.8	45.0	45.0	45.0	38.1	38.1	42.0			
LOS by Move:	C	D	A	D	D	D	D	D	D	D	D	D			
HCM2kAvgQ:	1	13	0	5	5	5	9	9	9	4	4	5			

Note: Queue reported is the number of cars per lane.

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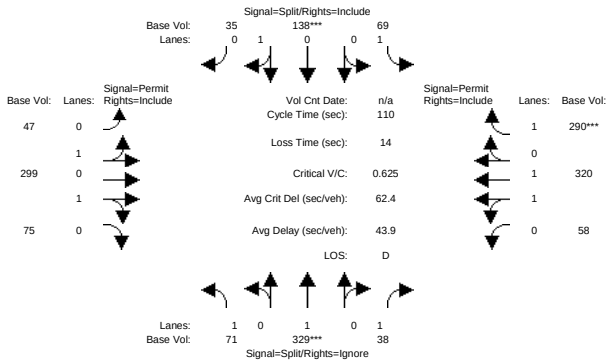
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0			
Volume Module:															
Base Vol:	71	329	38	69	138	35	47	299	75	58	320	290			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	71	329	38	69	138	35	47	299	75	58	320	290			
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
PHF Volume:	72	336	0	70	141	36	48	305	77	59	327	296			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	72	336	0	70	141	36	48	305	77	59	327	296			
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	72	336	0	70	141	36	48	305	77	59	327	296			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.81	0.85	1.00	0.81	0.72	0.71	0.63	0.63	0.63	0.65	0.65	0.69			
Lanes:	1.00	1.00	1.00	1.00	0.80	0.20	0.22	1.42	0.36	0.31	1.69	1.00			
Final Sat.:	1539	1620	1900	1539	1094	277	268	1702	427	381	2099	1303			
Capacity Analysis Module:															
Vol/Sat:	0.05	0.21	0.00	0.05	0.13	0.13	0.18	0.18	0.18	0.16	0.16	0.23			
Crit Moves:		****			****							****			
Green/Cycle:	0.21	0.21	0.00	0.22	0.22	0.22	0.46	0.46	0.46	0.46	0.46	0.46			
Volume/Cap:	0.22	0.97	0.00	0.21	0.58	0.58	0.39	0.39	0.39	0.33	0.33	0.49			
Uniform Del:	45.3	54.5	0.0	44.5	48.7	48.7	24.5	24.5	24.5	23.8	23.8	26.0			
IncremntDel:	1.5	40.6	0.0	1.4	7.9	7.9	1.0	1.0	1.0	0.8	0.8	2.8			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Delay/Veh:	46.9	95.1	0.0	45.8	56.6	56.6	25.5	25.5	25.5	24.6	24.6	28.8			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	46.9	95.1	0.0	45.8	56.6	56.6	25.5	25.5	25.5	24.6	24.6	28.8			
LOS by Move:	D	F	A	D	E	E	C	C	C	C	C	C			
HCM2kAvgQ:	3	19	0	2	7	7	6	6	6	5	5	9			

Note: Queue reported is the number of cars per lane.

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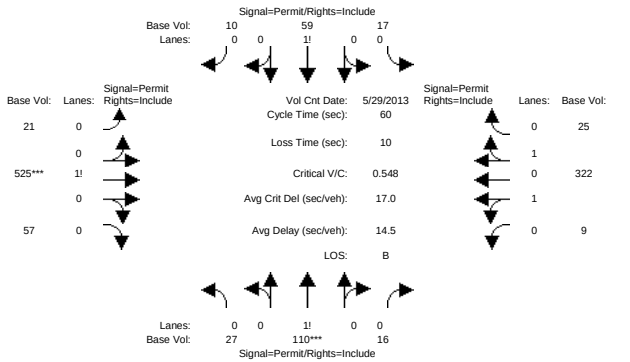
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am												
Base Vol:	27	110	16	17	59	10	21	525	57	9	322	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	110	16	17	59	10	21	525	57	9	322	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	30	121	18	19	65	11	23	577	63	10	354	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	121	18	19	65	11	23	577	63	10	354	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	121	18	19	65	11	23	577	63	10	354	27
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.92	0.92	0.92	0.96	0.96	0.96	0.88	0.88	0.88
Lanes:	0.18	0.72	0.10	0.20	0.68	0.12	0.03	0.88	0.09	0.05	1.81	0.14
Final Sat.:	312	1270	185	346	1199	203	64	1595	173	85	3035	236
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.05	0.05	0.05	0.36	0.36	0.36	0.12	0.12	0.12
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.26	0.26	0.26	0.15	0.15	0.15	0.78	0.78	0.78	0.25	0.25	0.25
Uniform Del:	13.3	13.3	13.3	12.7	12.7	12.7	13.4	13.4	13.4	9.7	9.7	9.7
IncremntDel:	0.2	0.2	0.2	0.1	0.1	0.1	4.5	4.5	4.5	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.5	13.5	13.5	12.8	12.8	12.8	17.8	17.8	17.8	9.7	9.7	9.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.5	13.5	13.5	12.8	12.8	12.8	17.8	17.8	17.8	9.7	9.7	9.7
LOS by Move:	B	B	B	B	B	B	B	B	B	A	A	A
HCM2kAvgQ:	2	2	2	1	1	1	10	10	10	2	2	2

Note: Queue reported is the number of cars per lane.

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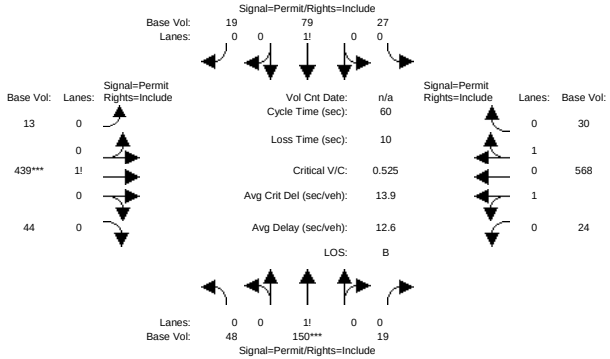
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	48	150	19	27	79	19	13	439	44	24	568	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	150	19	27	79	19	13	439	44	24	568	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	53	165	21	30	87	21	14	482	48	26	624	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	165	21	30	87	21	14	482	48	26	624	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	165	21	30	87	21	14	482	48	26	624	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.89	0.89	0.89	0.96	0.96	0.96	0.87	0.87	0.87
Lanes:	0.22	0.69	0.09	0.22	0.63	0.15	0.03	0.88	0.09	0.08	1.82	0.10
Final Sat.:	377	1180	149	364	1065	256	48	1622	163	128	3018	159
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.08	0.08	0.08	0.30	0.30	0.30	0.21	0.21	0.21
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.38	0.38	0.38	0.22	0.22	0.22	0.64	0.64	0.64	0.44	0.44	0.44
Uniform Del:	14.0	14.0	14.0	13.1	13.1	13.1	12.1	12.1	12.1	10.8	10.8	10.8
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	1.6	1.6	1.6	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.4	14.4	14.4	13.3	13.3	13.3	13.8	13.8	13.8	11.0	11.0	11.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.4	14.4	14.4	13.3	13.3	13.3	13.8	13.8	13.8	11.0	11.0	11.0
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	2	2	2	7	7	7	5	5	5

Note: Queue reported is the number of cars per lane.

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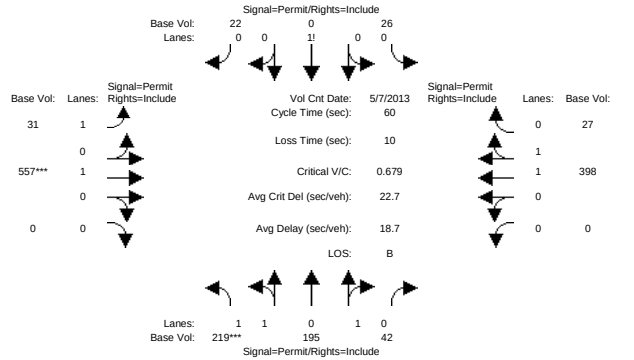
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	219	195	42	26	0	22	31	557	0	0	398	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	219	195	42	26	0	22	31	557	0	0	398	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	235	210	45	28	0	24	33	599	0	0	428	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	210	45	28	0	24	33	599	0	0	428	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	210	45	28	0	24	33	599	0	0	428	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.61	0.61	0.55	1.00	0.55	0.42	0.75	1.00	1.00	0.75	0.75
Lanes:	1.47	1.26	0.27	0.54	0.00	0.46	1.00	1.00	0.00	0.00	1.87	0.13
Final Sat.:	1641	1461	315	564	0	477	792	1418	0	0	2676	182
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.05	0.00	0.05	0.04	0.42	0.00	0.00	0.16	0.16
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.41	0.41	0.41	0.14	0.00	0.14	0.09	0.87	0.00	0.00	0.33	0.33
Uniform Del:	14.8	14.8	14.8	13.3	0.0	13.3	8.4	13.9	0.0	0.0	9.5	9.5
IncremntDel:	1.0	1.0	1.0	0.8	0.0	0.8	0.4	14.5	0.0	0.0	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.8	15.8	15.8	14.1	0.0	14.1	8.8	28.4	0.0	0.0	10.2	10.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.8	15.8	15.8	14.1	0.0	14.1	8.8	28.4	0.0	0.0	10.2	10.2
LOS by Move:	B	B	B	B	A	B	A	C	A	A	B	B
HCM2kAvgQ:	3	3	3	1	0	1	0	10	0	0	3	3

Note: Queue reported is the number of cars per lane.

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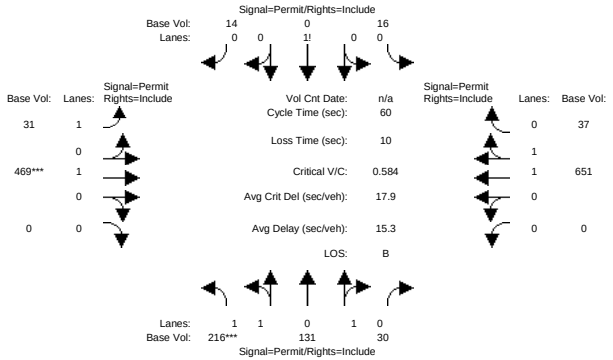
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	216	131	30	16	0	14	31	469	0	0	651	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	131	30	16	0	14	31	469	0	0	651	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	237	144	33	18	0	15	34	515	0	0	715	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	144	33	18	0	15	34	515	0	0	715	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	144	33	18	0	15	34	515	0	0	715	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.60	0.60	0.58	1.00	0.58	0.28	0.75	1.00	1.00	0.75	0.75
Lanes:	1.75	1.02	0.23	0.54	0.00	0.46	1.00	1.00	0.00	0.00	1.89	0.11
Final Sat.:	1928	1170	268	588	0	515	529	1418	0	0	2709	154
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.03	0.00	0.03	0.06	0.36	0.00	0.00	0.26	0.26
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.35	0.35	0.35	0.09	0.00	0.09	0.13	0.75	0.00	0.00	0.55	0.55
Uniform Del:	14.5	14.5	14.5	13.1	0.0	13.1	8.6	12.6	0.0	0.0	10.9	10.9
IncremntDel:	0.8	0.8	0.8	0.4	0.0	0.4	1.1	7.5	0.0	0.0	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	13.5	0.0	13.5	9.6	20.0	0.0	0.0	12.4	12.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	13.5	0.0	13.5	9.6	20.0	0.0	0.0	12.4	12.4
LOS by Move:	B	B	B	B	A	B	A	C	A	A	B	B
HCM2kAvgQ:	2	2	2	0	0	0	0	8	0	0	5	5

Note: Queue reported is the number of cars per lane.

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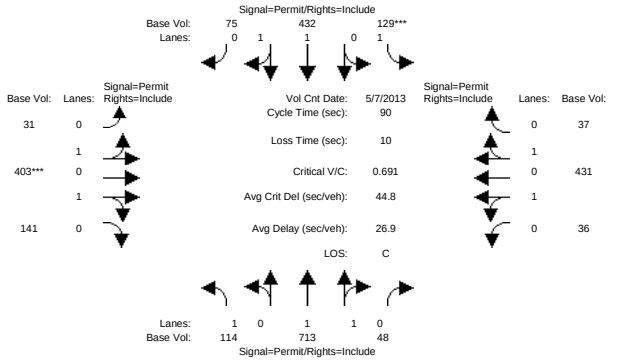
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #40: 16th/Potrero



Street Name: Potrero Ave 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	54	0	54	54	0	54	0	26	0	0	26	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:30am												
Base Vol:	114	713	48	129	432	75	31	403	141	36	431	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	713	48	129	432	75	31	403	141	36	431	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	735	49	133	445	77	32	415	145	37	444	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	735	49	133	445	77	32	415	145	37	444	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	735	49	133	445	77	32	415	145	37	444	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.27	0.59	0.72	0.20	0.58	0.70	0.64	0.58	0.63	0.62	0.55	0.62
Lanes:	1.00	1.90	0.10	1.00	1.75	0.25	0.10	1.44	0.46	0.13	1.74	0.13
Final Sat.:	518	2115	142	379	1926	334	121	1579	552	153	1826	157
Capacity Analysis Module:												
Vol/Sat:	0.23	0.35	0.35	0.35	0.23	0.23	0.26	0.26	0.26	0.24	0.24	0.24
Crit Moves:				****				****				
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.38	0.58	0.58	0.59	0.39	0.39	0.91	0.91	0.91	0.84	0.84	0.84
Uniform Del:	9.3	11.0	11.0	11.1	9.4	9.4	30.9	30.9	30.9	30.1	30.1	30.1
IncremntDel:	3.5	1.8	1.8	10.6	0.8	0.8	19.2	19.2	19.2	13.2	13.2	13.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.8	12.8	12.8	21.7	10.2	10.2	50.0	50.0	50.0	43.2	43.2	43.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.8	12.8	12.8	21.7	10.2	10.2	50.0	50.0	50.0	43.2	43.2	43.2
LOS by Move:	B	B	B	C	B	B	D	D	D	D	D	D
HCM2kAvgQ:	2	8	9	3	4	5	13	12	13	9	8	9

Note: Queue reported is the number of cars per lane.

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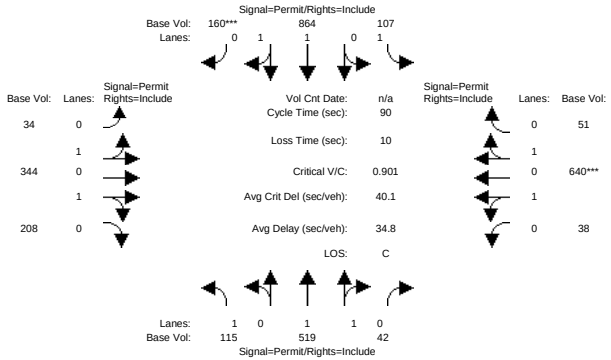
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #40: 16th/Potrero



Street Name: Potrero Ave 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	50	0	50	50	0	50	0	30	0	0	30	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	115	519	42	107	864	160	34	344	208	38	640	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	519	42	107	864	160	34	344	208	38	640	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	119	535	43	110	891	165	35	355	214	39	660	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	535	43	110	891	165	35	355	214	39	660	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	535	43	110	891	165	35	355	214	39	660	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.16	0.59	0.72	0.31	0.58	0.70	0.58	0.52	0.57	0.65	0.58	0.65
Lanes:	1.00	1.88	0.12	1.00	1.73	0.27	0.11	1.22	0.67	0.09	1.78	0.13
Final Sat.:	312	2089	169	593	1907	353	119	1206	729	117	1975	157
Capacity Analysis Module:												
Vol/Sat:	0.38	0.26	0.26	0.19	0.47	0.47	0.29	0.29	0.29	0.33	0.33	0.33
Crit Moves:						****					****	
Green/Cycle:	0.56	0.56	0.56	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.68	0.46	0.46	0.33	0.84	0.84	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Del:	14.3	11.9	11.9	10.9	16.7	16.7	28.3	28.3	28.3	30.0	30.0	30.0
IncremntDel:	19.8	1.2	1.2	2.7	6.9	6.9	15.2	15.2	15.2	33.4	33.4	33.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.2	13.2	13.2	13.6	23.6	23.6	43.6	43.6	43.6	63.4	63.4	63.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	13.2	13.2	13.6	23.6	23.6	43.6	43.6	43.6	63.4	63.4	63.4
LOS by Move:	C	B	B	B	C	C	D	D	D	E	E	E
HCM2kAvgQ:	4	5	6	2	15	18	12	11	12	16	15	16

Note: Queue reported is the number of cars per lane.

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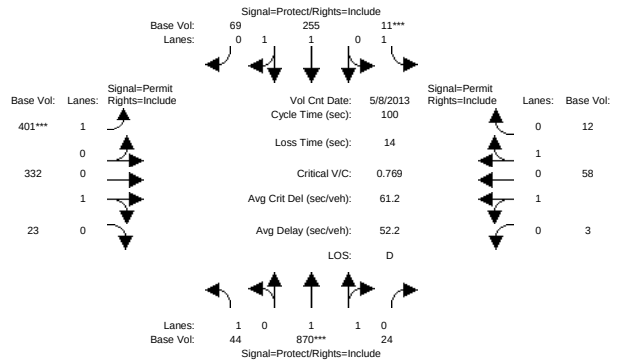
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	17	42	42	14	38	38	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	44	870	24	11	255	69	401	332	23	3	58	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	870	24	11	255	69	401	332	23	3	58	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	45	899	25	11	263	71	414	343	24	3	60	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	899	25	11	263	71	414	343	24	3	60	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	899	25	11	263	71	414	343	24	3	60	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.80	0.81	0.78	0.77	0.62	0.74	0.74	0.74	0.74	0.74
Lanes:	1.00	1.95	0.05	1.00	1.57	0.43	1.00	0.94	0.06	0.08	1.59	0.33
Final Sat.:	1539	2954	81	1539	2318	627	1183	1313	91	116	2246	465
Capacity Analysis Module:												
Vol/Sat:	0.03	0.30	0.30	0.01	0.11	0.11	0.35	0.26	0.26	0.03	0.03	0.03
Crit Moves:		****		****			****					
Green/Cycle:	0.17	0.42	0.42	0.14	0.39	0.39	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.17	0.72	0.72	0.05	0.29	0.29	1.17	0.87	0.87	0.09	0.09	0.09
Uniform Del:	35.2	24.2	24.2	37.3	21.2	21.2	35.0	33.2	33.2	25.2	25.2	25.2
IncremntDel:	1.4	3.6	3.6	0.5	0.7	0.7	101.4	21.2	21.2	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.6	27.8	27.8	37.7	21.9	21.9	136.4	54.3	54.3	25.4	25.4	25.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	27.8	27.8	37.7	21.9	21.9	136.4	54.3	54.3	25.4	25.4	25.4
LOS by Move:	D	C	C	D	C	C	F	D	D	C	C	C
HCM2kAvgQ:	1	14	14	0	4	4	22	13	13	1	1	1

Note: Queue reported is the number of cars per lane.

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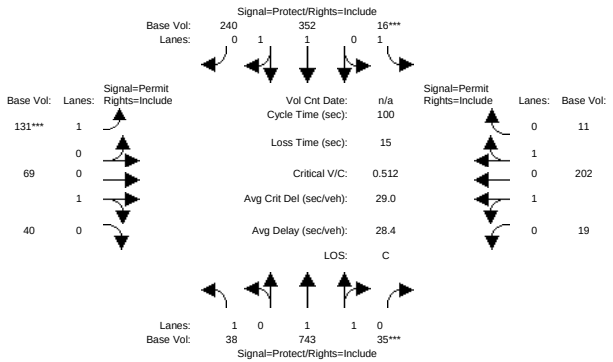
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	17	40	40	15	38	38	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	38	743	35	16	352	240	131	69	40	19	202	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	743	35	16	352	240	131	69	40	19	202	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	40	782	37	17	371	253	138	73	42	20	213	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	782	37	17	371	253	138	73	42	20	213	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	782	37	17	371	253	138	73	42	20	213	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.79	0.81	0.75	0.70	0.47	0.71	0.65	0.74	0.75	0.74
Lanes:	1.00	1.91	0.09	1.00	1.15	0.85	1.00	0.61	0.39	0.17	1.74	0.09
Final Sat.:	1539	2889	136	1539	1652	1126	900	823	477	232	2467	134
Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.27	0.01	0.22	0.22	0.15	0.09	0.09	0.09	0.09	0.09
Crit Moves:			****	****			****					
Green/Cycle:	0.17	0.40	0.40	0.15	0.38	0.38	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.15	0.68	0.68	0.07	0.59	0.59	0.51	0.29	0.29	0.29	0.29	0.29
Uniform Del:	35.4	24.7	24.7	36.5	24.8	24.8	28.9	26.9	26.9	26.8	26.8	26.8
IncremntDel:	1.2	3.1	3.1	0.6	2.4	2.4	6.7	1.9	1.9	0.9	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.6	27.7	27.7	37.1	27.2	27.2	35.7	28.8	28.8	27.7	27.7	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	27.7	27.7	37.1	27.2	27.2	35.7	28.8	28.8	27.7	27.7	27.7
LOS by Move:	D	C	C	D	C	C	D	C	C	C	C	C
HCM2kAvgQ:	1	12	12	0	8	8	4	3	3	3	3	3

Note: Queue reported is the number of cars per lane.

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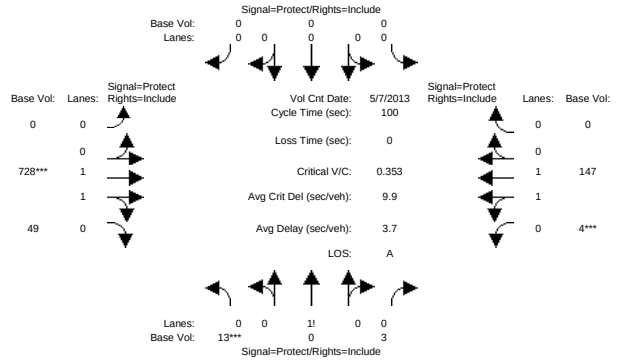
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #42: Mariposa/4th




```
Street Name:            4th Street                    Mariposa Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am
Base Vol:      13    0     3     0    0     0     0  728    49     4  147     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   13    0     3     0    0     0     0  728    49     4  147     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    14    0     3     0    0     0     0  766    52     4  155     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   14    0     3     0    0     0     0  766    52     4  155     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   14    0     3     0    0     0     0  766    52     4  155     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.80 1.00  0.79  1.00 1.00  1.00  1.00 0.75  0.73  0.76 0.76  1.00
Lanes:       0.81 0.00  0.19  0.00 0.00  0.00  0.00 1.87  0.13  0.05 1.95  0.00
Final Sat.:  1230    0   284     0    0     0     0 2676   180    76 2807     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00  0.01  0.00 0.00  0.00  0.00 0.29  0.29  0.06 0.06  0.00
Crit Moves:  ****                                 ****        ****
Green/Cycle: 0.03 0.00  0.03  0.00 0.00  0.00  0.00 0.81  0.81  0.16 0.97  0.00
Volume/Cap:  0.35 0.00  0.35  0.00 0.00  0.00  0.00 0.35  0.35  0.35 0.06  0.00
Uniform Del: 47.4  0.0  47.4   0.0  0.0   0.0   0.0  2.5   2.5  37.7  0.1   0.0
IncremntDel: 19.3  0.0  19.3   0.0  0.0   0.0   0.0  0.4   0.4   2.2  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   66.7  0.0  66.7   0.0  0.0   0.0   0.0  2.9   2.9  39.8  0.1   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  66.7  0.0  66.7   0.0  0.0   0.0   0.0  2.9   2.9  39.8  0.1   0.0
LOS by Move:    E    A     E     A    A     A     A    A     A     D    A     A
HCM2kAvgQ:      1    0     1     0    0     0     0    4     4     2    0     0
Note: Queue reported as the number of cars per lane.
```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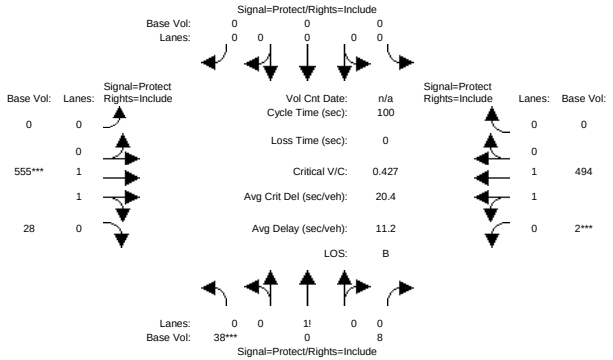
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #42: Mariposa/4th




```
Street Name:            4th Street                    Mariposa Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      38    0     8     0    0     0     0  555    28     2  494     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   38    0     8     0    0     0     0  555    28     2  494     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    40    0     8     0    0     0     0  584    29     2  520     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   40    0     8     0    0     0     0  584    29     2  520     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   40    0     8     0    0     0     0  584    29     2  520     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.80 1.00  0.79  1.00 1.00  1.00  1.00 0.75  0.74  0.76 0.76  1.00
Lanes:       0.82 0.00  0.18  0.00 0.00  0.00  0.00 1.90  0.10  0.01 1.99  0.00
Final Sat.:  1253    0   264     0    0     0     0 2726   138    12 2875     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.00  0.03  0.00 0.00  0.00  0.00 0.21  0.21  0.18 0.18  0.00
Crit Moves:  ****                                 ****        ****
Green/Cycle: 0.07 0.00  0.07  0.00 0.00  0.00  0.00 0.50  0.50  0.42 0.93  0.00
Volume/Cap:  0.43 0.00  0.43  0.00 0.00  0.00  0.00 0.43  0.43  0.43 0.20  0.00
Uniform Del: 44.2  0.0  44.2   0.0  0.0   0.0   0.0 15.8  15.8  20.3  0.3   0.0
IncremntDel: 11.3  0.0  11.3   0.0  0.0   0.0   0.0  0.9   0.9   1.1  0.2   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 0.00  1.00  0.00 0.00  0.00  0.00 1.00  1.00  1.00 1.00  0.00
Delay/Veh:   55.6  0.0  55.6   0.0  0.0   0.0   0.0 16.7  16.7  21.4  0.5   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  55.6  0.0  55.6   0.0  0.0   0.0   0.0 16.7  16.7  21.4  0.5   0.0
LOS by Move:    E    A     E     A    A     A     A    B     B     C    A     A
HCM2kAvgQ:      2    0     2     0    0     0     0    6     6     6    1     0
Note: Queue reported as the number of cars per lane.
```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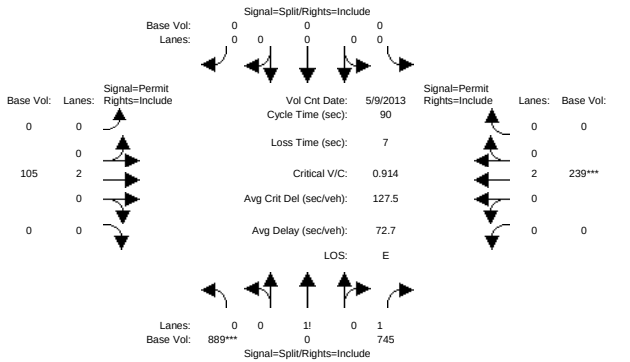
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #43: Mariposa/I-280NB



Street Name: I-280NB Mariposa Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	55	0	55	0	0	0	0	28	28	0	28	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	889	0	745	0	0	0	0	105	0	0	239	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	889	0	745	0	0	0	0	105	0	0	239	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	922	0	773	0	0	0	0	109	0	0	248	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	922	0	773	0	0	0	0	109	0	0	248	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	922	0	773	0	0	0	0	109	0	0	248	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	1.00	0.79	1.00	1.00	1.00	1.00	0.94	1.00	1.00	0.94	1.00
Lanes:	0.67	0.00	1.33	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	1193	0	2004	0	0	0	0	3558	0	0	3558	0
Capacity Analysis Module:												
Vol/Sat:	0.77	0.00	0.39	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.07	0.00
Crit Moves:	****										****	
Green/Cycle:	0.61	0.00	0.61	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.31	0.00
Volume/Cap:	1.26	0.00	0.63	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.22	0.00
Uniform Del:	17.5	0.0	11.1	0.0	0.0	0.0	0.0	22.0	0.0	0.0	23.0	0.0
IncremntDel:	125.2	0.0	1.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	142.7	0.0	12.2	0.0	0.0	0.0	0.0	22.2	0.0	0.0	23.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	142.7	0.0	12.2	0.0	0.0	0.0	0.0	22.2	0.0	0.0	23.4	0.0
LOS by Move:	F	A	B	A	A	A	A	C	A	A	C	A
HCM2kAvgQ:	75	0	11	0	0	0	0	1	0	0	3	0

Note: Queue reported as the number of cars per lane.

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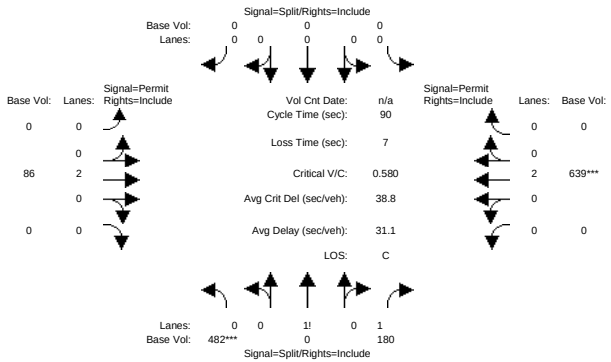
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #43: Mariposa/I-280NB



Street Name: I-280NB Mariposa Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	0	31	0	0	0	0	52	52	0	52	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	482	0	180	0	0	0	0	86	0	0	639	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	482	0	180	0	0	0	0	86	0	0	639	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	502	0	188	0	0	0	0	90	0	0	666	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	502	0	188	0	0	0	0	90	0	0	666	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	502	0	188	0	0	0	0	90	0	0	666	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.88	1.00	1.00	1.00	1.00	0.94	1.00	1.00	0.94	1.00
Lanes:	0.84	0.00	1.16	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	1443	0	1943	0	0	0	0	3558	0	0	3558	0
Capacity Analysis Module:												
Vol/Sat:	0.35	0.00	0.10	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.19	0.00
Crit Moves:	****										****	
Green/Cycle:	0.34	0.00	0.34	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.58	0.00
Volume/Cap:	1.01	0.00	0.28	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.32	0.00
Uniform Del:	29.5	0.0	21.4	0.0	0.0	0.0	0.0	8.2	0.0	0.0	9.9	0.0
IncremntDel:	36.9	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	66.4	0.0	21.7	0.0	0.0	0.0	0.0	8.3	0.0	0.0	10.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.4	0.0	21.7	0.0	0.0	0.0	0.0	8.3	0.0	0.0	10.3	0.0
LOS by Move:	E	A	C	A	A	A	A	A	A	A	B	A
HCM2kAvgQ:	24	0	3	0	0	0	0	1	0	0	5	0

Note: Queue reported as the number of cars per lane.

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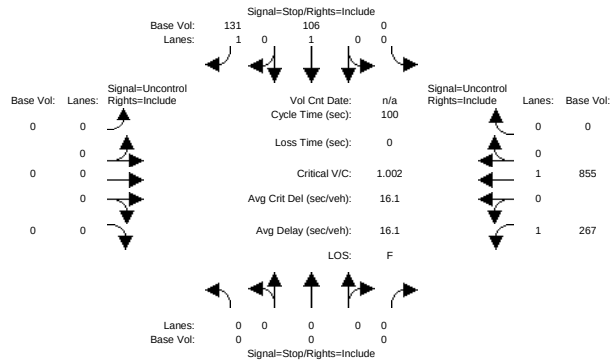
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #44: Mariposa/I-280 SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	0	106	131	0	0	0	267	855	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	106	131	0	0	0	267	855	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	110	136	0	0	0	278	891	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	110	136	0	0	0	278	891	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	1447	891	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	133	344	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	110	344	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	1.00	0.40	xxxx	xxxx	xxxx	0.17	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	6.4	1.8	xxxx	xxxx	xxxxx	0.6	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	160	22.2	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	F	C	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			83.6			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

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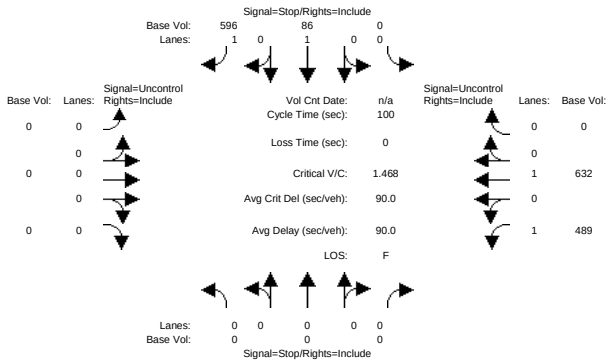
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #44: Mariposa/I-280 SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	0	86	596	0	0	0	489	632	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	86	596	0	0	0	489	632	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	91	634	0	0	0	520	672	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	91	634	0	0	0	520	672	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	1713	672	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	91	459	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	62	459	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	1.47	1.38	xxxx	xxxx	xxxx	0.32	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	8.0	29.8	xxxx	xxxx	xxxxx	1.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	390	209.2	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	F	F	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			232.0			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

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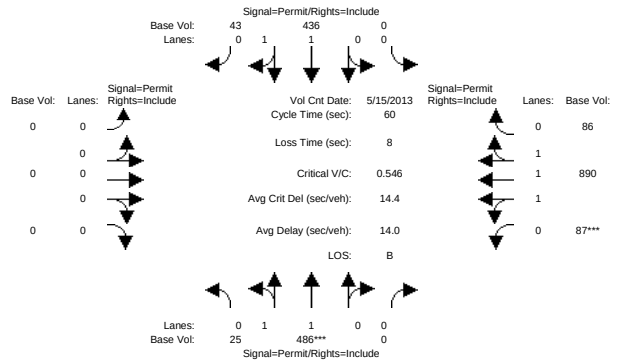
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #45: Divisadero/Pine



Street Name:	Divisadero Street						Pine Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	26	0	0	26	0	26	0	26	26	0	26
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	25	486	0	0	436	43	0	0	0	87	890	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	486	0	0	436	43	0	0	0	87	890	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	26	512	0	0	459	45	0	0	0	92	937	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	512	0	0	459	45	0	0	0	92	937	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	512	0	0	459	45	0	0	0	92	937	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	1.00	1.00	0.74	0.74	1.00	1.00	1.00	0.72	0.73	0.72
Lanes:	0.10	1.90	0.00	0.00	1.82	0.18	0.00	0.00	0.00	0.25	2.51	0.24
Final Sat.:	130	2526	0	0	2567	253	0	0	0	338	3462	335
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.00	0.00	0.18	0.18	0.00	0.00	0.00	0.27	0.27	0.27
Crit Moves:		****								****		
Green/Cycle:	0.43	0.43	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.43	0.43	0.43
Volume/Cap:	0.47	0.47	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.62	0.62	0.62
Uniform Del:	12.1	12.1	0.0	0.0	11.7	11.7	0.0	0.0	0.0	13.2	13.2	13.2
IncremntDel:	1.4	1.4	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.7	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	13.4	13.4	0.0	0.0	12.8	12.8	0.0	0.0	0.0	14.9	14.9	14.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.4	13.4	0.0	0.0	12.8	12.8	0.0	0.0	0.0	14.9	14.9	14.9
LOS by Move:	B	B	A	A	B	B	A	A	A	B	B	B
HCM2kAvgQ:	4	4	0	0	4	4	0	0	0	7	7	7

Note: Queue reported is the number of cars per lane.

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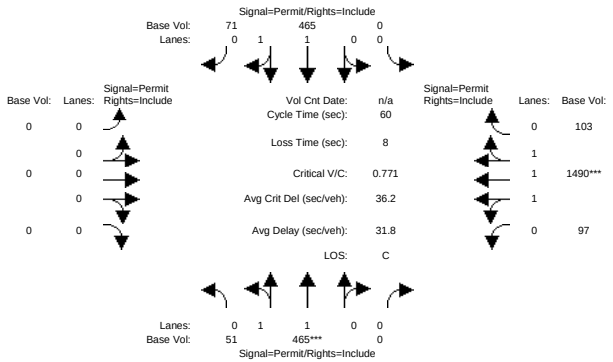
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #45: Divisadero/Pine



Street Name:	Divisadero Street						Pine Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	26	0	0	26	0	26	0	26	26	0	26
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	51	465	0	0	465	71	0	0	0	97	1490	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	465	0	0	465	71	0	0	0	97	1490	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	55	505	0	0	505	77	0	0	0	105	1620	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	505	0	0	505	77	0	0	0	105	1620	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	505	0	0	505	77	0	0	0	105	1620	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	1.00	1.00	0.74	0.73	1.00	1.00	1.00	0.73	0.73	0.73
Lanes:	0.20	1.80	0.00	0.00	1.73	0.27	0.00	0.00	0.00	0.17	2.65	0.18
Final Sat.:	245	2232	0	0	2427	371	0	0	0	239	3670	254
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.00	0.00	0.21	0.21	0.00	0.00	0.00	0.44	0.44	0.44
Crit Moves:		****									****	
Green/Cycle:	0.43	0.43	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.43	0.43	0.43
Volume/Cap:	0.52	0.52	0.00	0.00	0.48	0.48	0.00	0.00	0.00	1.02	1.02	1.02
Uniform Del:	12.5	12.5	0.0	0.0	12.2	12.2	0.0	0.0	0.0	17.0	17.0	17.0
IncremntDel:	1.8	1.8	0.0	0.0	1.4	1.4	0.0	0.0	0.0	25.9	25.9	25.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	14.3	14.3	0.0	0.0	13.5	13.5	0.0	0.0	0.0	42.9	42.9	42.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.3	14.3	0.0	0.0	13.5	13.5	0.0	0.0	0.0	42.9	42.9	42.9
LOS by Move:	B	B	A	A	B	B	A	A	A	D	D	D
HCM2kAvgQ:	4	4	0	0	5	5	0	0	0	21	21	21

Note: Queue reported is the number of cars per lane.

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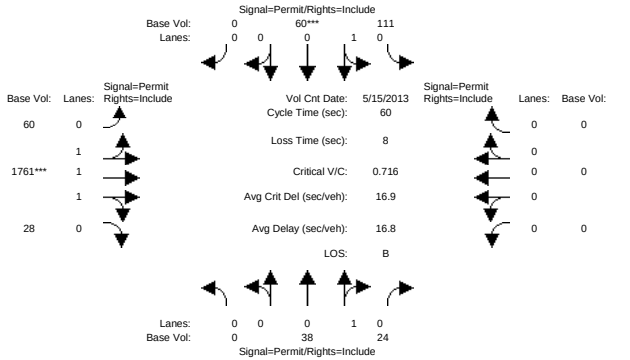
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #46: Broderick/Bush



Street Name:	Broderick Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	20	20	20	0	0	32	32	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	0	38	24	111	60	0	60	1761	28	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	38	24	111	60	0	60	1761	28	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	40	25	116	63	0	63	1834	29	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	40	25	116	63	0	63	1834	29	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	40	25	116	63	0	63	1834	29	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.71	0.70	0.57	0.58	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.61	0.39	0.65	0.35	0.00	0.10	2.86	0.04	0.00	0.00	0.00
Final Sat.:	0	820	518	707	382	0	137	4010	64	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.05	0.16	0.16	0.00	0.46	0.46	0.46	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.33	0.33	0.33	0.33	0.00	0.53	0.53	0.53	0.00	0.00	0.00
Volume/Cap:	0.00	0.14	0.14	0.49	0.49	0.00	0.86	0.86	0.86	0.00	0.00	0.00
Uniform Del:	0.0	14.0	14.0	15.9	15.9	0.0	12.0	12.0	12.0	0.0	0.0	0.0
IncremntDel:	0.0	0.7	0.7	4.7	4.7	0.0	4.5	4.5	4.5	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.7	14.7	20.6	20.6	0.0	16.6	16.6	16.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.7	14.7	20.6	20.6	0.0	16.6	16.6	16.6	0.0	0.0	0.0
LOS by Move:	A	B	B	C	C	A	B	B	B	A	A	A
HCM2kAvgQ:	0	1	1	3	3	0	15	15	15	0	0	0

Note: Queue reported is the number of cars per lane.

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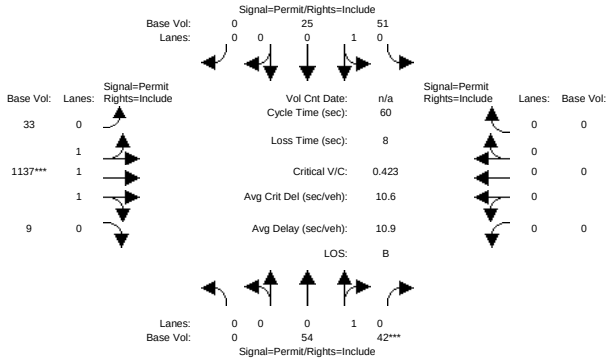
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #46: Broderick/Bush



Street Name:	Broderick Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	20	20	20	0	0	32	32	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	54	42	51	25	0	33	1137	9	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	54	42	51	25	0	33	1137	9	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	56	44	53	26	0	34	1184	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	56	44	53	26	0	34	1184	9	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	56	44	53	26	0	34	1184	9	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.70	0.69	0.59	0.60	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.56	0.44	0.67	0.33	0.00	0.08	2.90	0.02	0.00	0.00	0.00
Final Sat.:	0	744	579	752	368	0	118	4068	32	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.08	0.08	0.07	0.07	0.00	0.29	0.29	0.29	0.00	0.00	0.00
Crit Moves:			****					****				
Green/Cycle:	0.00	0.33	0.33	0.33	0.33	0.00	0.53	0.53	0.53	0.00	0.00	0.00
Volume/Cap:	0.00	0.23	0.23	0.21	0.21	0.00	0.55	0.55	0.55	0.00	0.00	0.00
Uniform Del:	0.0	14.4	14.4	14.4	14.3	0.0	9.2	9.2	9.2	0.0	0.0	0.0
IncremntDel:	0.0	1.2	1.2	1.3	1.3	0.0	1.0	1.0	1.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	15.6	15.6	15.6	15.6	0.0	10.2	10.2	10.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.6	15.6	15.6	15.6	0.0	10.2	10.2	10.2	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	2	1	1	1	0	6	6	6	0	0	0

Note: Queue reported is the number of cars per lane.

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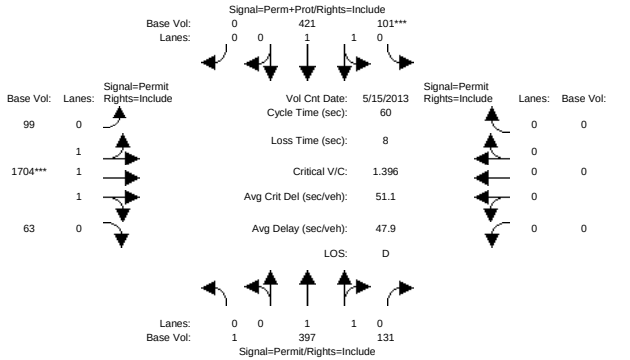
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #47: Divisadero/Bush



Street Name:	Divisadero Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	17	17	6	26	0	26	26	26	0	0	0
Y+R:	4.0	9.0	9.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	1	397	131	101	421	0	99	1704	63	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	397	131	101	421	0	99	1704	63	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	418	138	106	443	0	104	1794	66	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	418	138	106	443	0	104	1794	66	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	418	138	106	443	0	104	1794	66	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.72	0.71	0.47	0.75	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.01	1.49	0.50	0.39	1.61	0.00	0.16	2.74	0.10	0.00	0.00	0.00
Final Sat.:	5	2058	679	346	2304	0	222	3820	141	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	0.31	0.19	0.00	0.47	0.47	0.47	0.00	0.00	0.00
Crit Moves:				****				****				
Green/Cycle:	0.00	0.28	0.28	0.43	0.43	0.00	0.43	0.43	0.43	0.00	0.00	0.00
Volume/Cap:	xxxx	0.72	0.72	0.56	0.44	0.00	1.08	1.08	1.08	0.00	0.00	0.00
Uniform Del:	0.0	19.3	19.3	0.0	11.9	0.0	17.0	17.0	17.0	0.0	0.0	0.0
IncremntDel:	0.0	5.6	5.6	2.3	1.2	0.0	47.7	47.7	47.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	25.0	25.0	2.3	13.1	0.0	64.7	64.7	64.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	25.0	25.0	2.3	13.1	0.0	64.7	64.7	64.7	0.0	0.0	0.0
LOS by Move:	A	C	C	A	B	A	E	E	E	A	A	A
HCM2kAvgQ:	5	7	7	4	4	0	21	21	21	0	0	0

Note: Queue reported is the number of cars per lane.

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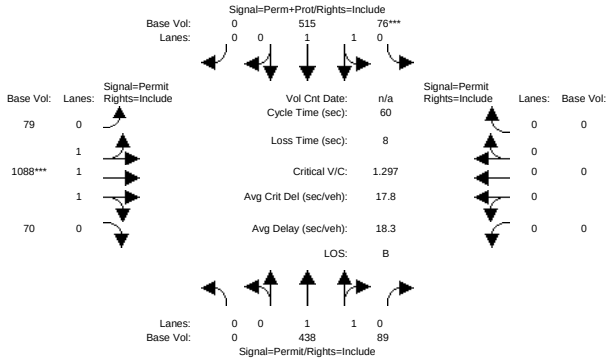
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #47: Divisadero/Bush



Street Name:	Divisadero Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	17	17	6	26	0	26	26	26	0	0	0
Y+R:	4.0	9.0	9.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	438	89	76	515	0	79	1088	70	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	438	89	76	515	0	79	1088	70	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	476	97	83	560	0	86	1183	76	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	476	97	83	560	0	86	1183	76	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	476	97	83	560	0	86	1183	76	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.73	0.72	0.65	0.76	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.00	1.66	0.34	0.26	1.74	0.00	0.19	2.64	0.17	0.00	0.00	0.00
Final Sat.:	0	2310	469	321	2500	0	266	3657	235	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.26	0.22	0.00	0.32	0.32	0.32	0.00	0.00	0.00
Crit Moves:				****				****				
Green/Cycle:	0.00	0.28	0.28	0.43	0.43	0.00	0.43	0.43	0.43	0.00	0.00	0.00
Volume/Cap:	0.00	0.73	0.73	0.56	0.52	0.00	0.75	0.75	0.75	0.00	0.00	0.00
Uniform Del:	0.0	19.4	19.4	17.3	12.4	0.0	14.2	14.2	14.2	0.0	0.0	0.0
IncremntDel:	0.0	5.8	5.8	1.9	1.5	0.0	2.9	2.9	2.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	25.2	25.2	19.3	14.0	0.0	17.1	17.1	17.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	25.2	25.2	19.3	14.0	0.0	17.1	17.1	17.1	0.0	0.0	0.0
LOS by Move:	A	C	C	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	7	7	5	5	0	8	8	8	0	0	0

Note: Queue reported is the number of cars per lane.

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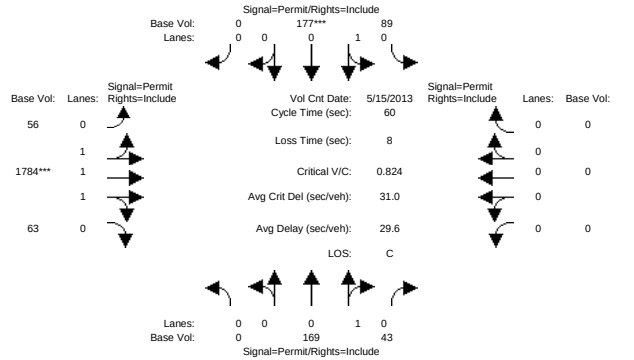
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #48: Scott/Bush



Street Name:	Scott Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	0	169	43	89	177	0	56	1784	63	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	169	43	89	177	0	56	1784	63	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	178	45	94	186	0	59	1878	66	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	178	45	94	186	0	59	1878	66	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	178	45	94	186	0	59	1878	66	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.73	0.72	0.62	0.62	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.80	0.20	0.34	0.66	0.00	0.09	2.81	0.10	0.00	0.00	0.00
Final Sat.:	0	1098	279	395	786	0	124	3938	139	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.16	0.24	0.24	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.42	0.42	0.62	0.62	0.00	0.99	0.99	0.99	0.00	0.00	0.00
Uniform Del:	0.0	13.6	13.6	15.0	15.0	0.0	15.3	15.3	15.3	0.0	0.0	0.0
IncremntDel:	0.0	2.5	2.5	6.2	6.2	0.0	17.0	17.0	17.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	16.1	16.1	21.2	21.2	0.0	32.3	32.3	32.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	16.1	16.1	21.2	21.2	0.0	32.3	32.3	32.3	0.0	0.0	0.0
LOS by Move:	A	B	B	C	C	A	C	C	C	A	A	A
HCM2kAvgQ:	0	3	3	5	5	0	21	21	21	0	0	0

Note: Queue reported is the number of cars per lane.

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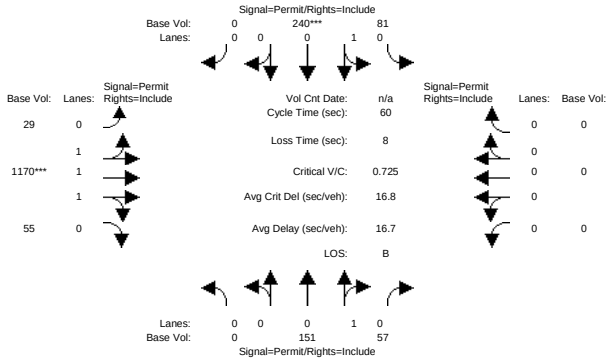
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #48: Scott/Bush



Street Name:	Scott Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	151	57	81	240	0	29	1170	55	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	151	57	81	240	0	29	1170	55	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	170	64	91	270	0	33	1315	62	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	170	64	91	270	0	33	1315	62	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	170	64	91	270	0	33	1315	62	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.72	0.71	0.65	0.65	1.00	0.74	0.74	0.73	1.00	1.00	1.00
Lanes:	0.00	0.72	0.28	0.25	0.75	0.00	0.07	2.80	0.13	0.00	0.00	0.00
Final Sat.:	0	988	373	311	920	0	97	3916	184	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.17	0.29	0.29	0.00	0.34	0.34	0.34	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.45	0.45	0.76	0.76	0.00	0.69	0.69	0.69	0.00	0.00	0.00
Uniform Del:	0.0	13.8	13.8	16.1	16.1	0.0	12.1	12.1	12.1	0.0	0.0	0.0
IncremntDel:	0.0	2.8	2.8	11.2	11.2	0.0	2.0	2.0	2.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	16.5	16.5	27.3	27.3	0.0	14.0	14.0	14.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	16.5	16.5	27.3	27.3	0.0	14.0	14.0	14.0	0.0	0.0	0.0
LOS by Move:	A	B	B	C	C	A	B	B	B	A	A	A
HCM2kAvgQ:	0	4	4	8	8	0	9	9	9	0	0	0

Note: Queue reported is the number of cars per lane.

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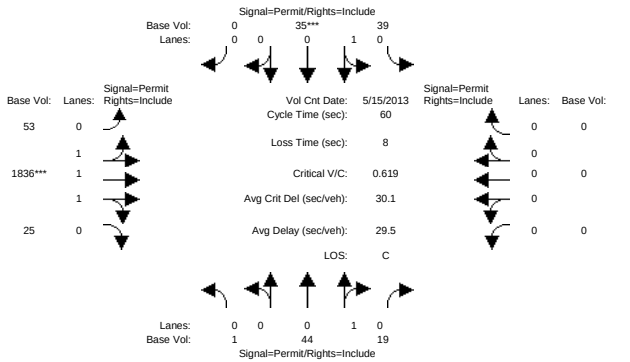
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #49: Bush/Pierce



Street Name:	Pierce Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	1	44	19	39	35	0	53	1836	25	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	44	19	39	35	0	53	1836	25	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	1	46	20	41	36	0	55	1913	26	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	46	20	41	36	0	55	1913	26	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	46	20	41	36	0	55	1913	26	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.71	0.64	0.64	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.02	0.68	0.30	0.53	0.47	0.00	0.08	2.88	0.04	0.00	0.00	0.00
Final Sat.:	21	931	402	640	575	0	117	4042	55	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.06	0.06	0.00	0.47	0.47	0.47	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.38	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.13	0.13	0.13	0.17	0.17	0.00	0.98	0.98	0.98	0.00	0.00	0.00
Uniform Del:	12.0	12.0	12.0	12.2	12.2	0.0	15.2	15.2	15.2	0.0	0.0	0.0
IncremntDel:	0.5	0.5	0.5	0.8	0.8	0.0	15.5	15.5	15.5	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	12.5	12.5	12.5	12.9	12.9	0.0	30.7	30.7	30.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	12.5	12.5	12.9	12.9	0.0	30.7	30.7	30.7	0.0	0.0	0.0
LOS by Move:	B	B	B	B	B	A	C	C	C	A	A	A
HCM2kAvgQ:	1	1	1	1	1	0	14	14	14	0	0	0

Note: Queue reported is the number of cars per lane.

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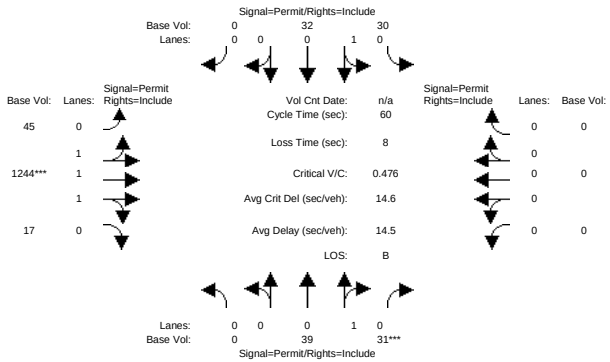
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #49: Bush/Pierce



Street Name:	Pierce Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	39	31	30	32	0	45	1244	17	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	31	30	32	0	45	1244	17	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	0	44	35	34	36	0	51	1414	19	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	44	35	34	36	0	51	1414	19	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	44	35	34	36	0	51	1414	19	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.70	0.69	0.64	0.65	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.55	0.45	0.49	0.51	0.00	0.10	2.86	0.04	0.00	0.00	0.00
Final Sat.:	0	736	585	596	636	0	145	4010	55	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.06	0.06	0.00	0.35	0.35	0.35	0.00	0.00	0.00
Crit Moves:			****					****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.16	0.16	0.15	0.15	0.00	0.73	0.73	0.73	0.00	0.00	0.00
Uniform Del:	0.0	12.1	12.1	12.1	12.1	0.0	12.4	12.4	12.4	0.0	0.0	0.0
IncremntDel:	0.0	0.7	0.7	0.7	0.7	0.0	2.3	2.3	2.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	12.8	12.8	12.8	12.8	0.0	14.7	14.7	14.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.8	12.8	12.8	12.8	0.0	14.7	14.7	14.7	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	1	1	1	1	0	8	8	8	0	0	0

Note: Queue reported is the number of cars per lane.

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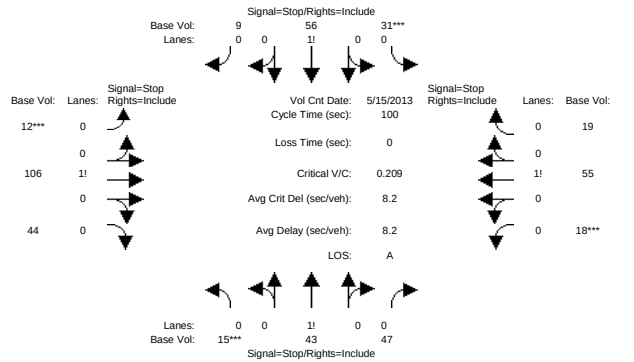
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #50: Broderick/Sutter



Street Name:	Broderick Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	15	43	47	31	56	9	12	106	44	18	55	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	43	47	31	56	9	12	106	44	18	55	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	15	44	48	32	58	9	12	109	45	19	57	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	44	48	32	58	9	12	109	45	19	57	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	44	48	32	58	9	12	109	45	19	57	20
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.14	0.41	0.45	0.32	0.59	0.09	0.07	0.66	0.27	0.19	0.60	0.21
Final Sat.:	112	321	351	240	433	70	59	523	217	151	461	159
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.13	0.13	0.13	0.21	0.21	0.21	0.12	0.12	0.12
Crit Moves:	****			****			****			****		
Delay/Veh:	8.0	8.0	8.0	8.3	8.3	8.3	8.4	8.4	8.4	8.0	8.0	8.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.0	8.0	8.0	8.3	8.3	8.3	8.4	8.4	8.4	8.0	8.0	8.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	8.0			8.3			8.4			8.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.0			8.3			8.4			8.0		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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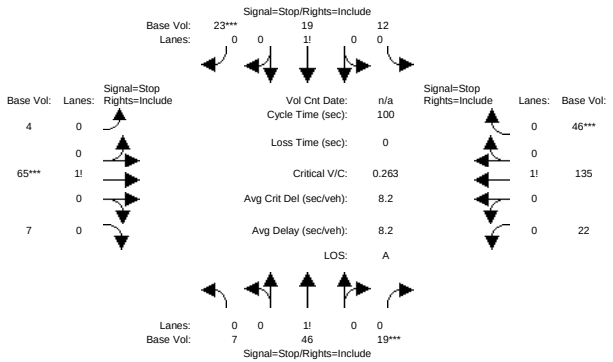
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #50: Broderick/Sutter



Street Name:	Broderick Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	7	46	19	12	19	23	4	65	7	22	135	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	46	19	12	19	23	4	65	7	22	135	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	8	50	21	13	21	25	4	71	8	24	147	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	50	21	13	21	25	4	71	8	24	147	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	50	21	13	21	25	4	71	8	24	147	50
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.10	0.64	0.26	0.22	0.35	0.43	0.05	0.86	0.09	0.11	0.66	0.23
Final Sat.:	74	485	200	170	269	326	42	677	73	91	558	190
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.08	0.08	0.08	0.10	0.10	0.10	0.26	0.26	0.26
Crit Moves:			****			****		****				****
Delay/Veh:	7.9	7.9	7.9	7.8	7.8	7.8	7.9	7.9	7.9	8.6	8.6	8.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.9	7.9	7.9	7.8	7.8	7.8	7.9	7.9	7.9	8.6	8.6	8.6
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.9			7.8			7.9			8.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.9			7.8			7.9			8.6		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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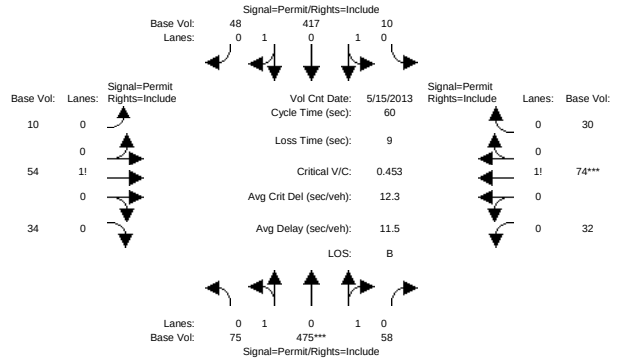
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #51: Divisadero/Sutter



Street Name:	Divisadero Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	75	475	58	10	417	48	10	54	34	32	74	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	475	58	10	417	48	10	54	34	32	74	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	78	495	60	10	434	50	10	56	35	33	77	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	495	60	10	434	50	10	56	35	33	77	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	495	60	10	434	50	10	56	35	33	77	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.62	0.61	0.70	0.70	0.69	0.66	0.68	0.63	0.63	0.65	0.62
Lanes:	0.25	1.56	0.19	0.04	1.76	0.20	0.10	0.54	0.36	0.24	0.53	0.23
Final Sat.:	291	1842	225	56	2326	268	127	688	433	286	661	268
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.19	0.19	0.19	0.08	0.08	0.08	0.12	0.12	0.12
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.52	0.52	0.52	0.36	0.36	0.36	0.25	0.25	0.25	0.35	0.35	0.35
Uniform Del:	9.6	9.6	9.6	8.6	8.6	8.6	14.5	14.5	14.5	15.1	15.1	15.1
IncremntDel:	1.6	1.6	1.6	0.7	0.7	0.7	1.4	1.4	1.4	2.4	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.2	11.2	11.2	9.4	9.4	9.4	15.9	15.9	15.9	17.5	17.5	17.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.2	11.2	11.2	9.4	9.4	9.4	15.9	15.9	15.9	17.5	17.5	17.5
LOS by Move:	B	B	B	A	A	A	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	3	3	3	2	2	1	2	2	2

Note: Queue reported is the number of cars per lane.

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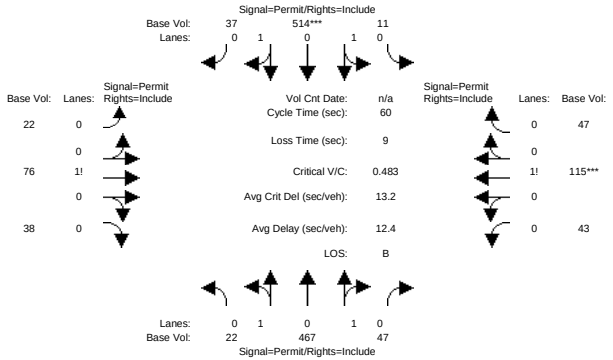
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #51: Divisadero/Sutter



Street Name:	Divisadero Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	22	467	47	11	514	37	22	76	38	43	115	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	467	47	11	514	37	22	76	38	43	115	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	24	508	51	12	559	40	24	83	41	47	125	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	508	51	12	559	40	24	83	41	47	125	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	508	51	12	559	40	24	83	41	47	125	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.68	0.70	0.70	0.70	0.65	0.66	0.64	0.64	0.65	0.64
Lanes:	0.08	1.74	0.18	0.04	1.83	0.13	0.16	0.56	0.28	0.21	0.56	0.23
Final Sat.:	107	2264	228	52	2442	176	201	693	347	257	687	281
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.23	0.23	0.23	0.12	0.12	0.12	0.18	0.18	0.18
Crit Moves:					****						****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.43	0.43	0.43	0.44	0.44	0.44	0.36	0.36	0.36	0.55	0.55	0.55
Uniform Del:	9.0	9.0	9.0	9.1	9.1	9.1	15.1	15.1	15.1	16.3	16.3	16.3
IncremntDel:	1.0	1.0	1.0	1.0	1.0	1.0	2.4	2.4	2.4	5.2	5.2	5.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.1	10.1	10.1	10.1	10.1	10.1	17.5	17.5	17.5	21.5	21.5	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.1	10.1	10.1	10.1	10.1	10.1	17.5	17.5	17.5	21.5	21.5	21.5
LOS by Move:	B	B	B	B	B	B	B	B	B	C	C	C
HCM2kAvgQ:	4	4	4	4	4	4	2	2	2	4	4	4

Note: Queue reported is the number of cars per lane.

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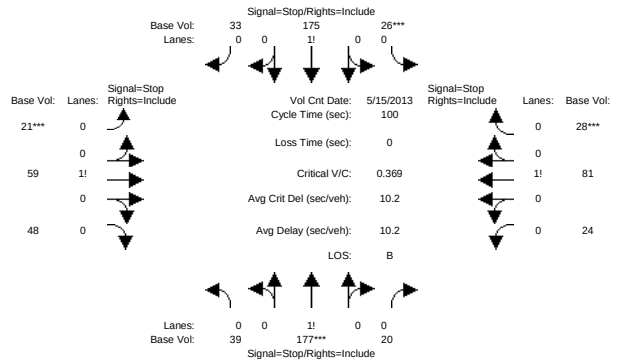
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #52: Sutter/Scott



Street Name:	Scott Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	39	177	20	26	175	33	21	59	48	24	81	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	177	20	26	175	33	21	59	48	24	81	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	42	192	22	28	190	36	23	64	52	26	88	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	192	22	28	190	36	23	64	52	26	88	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	192	22	28	190	36	23	64	52	26	88	30
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.17	0.75	0.08	0.11	0.75	0.14	0.16	0.47	0.37	0.18	0.61	0.21
Final Sat.:	115	521	59	78	523	99	105	295	240	114	384	133
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.36	0.36	0.36	0.22	0.22	0.22	0.23	0.23	0.23
Crit Moves:		****			****			****				****
Delay/Veh:	10.6	10.6	10.6	10.5	10.5	10.5	9.4	9.4	9.4	9.6	9.6	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.6	10.6	10.6	10.5	10.5	10.5	9.4	9.4	9.4	9.6	9.6	9.6
LOS by Move:	B	B	B	B	B	B	A	A	A	A	A	A
ApproachDel:		10.6			10.5			9.4			9.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.6			10.5			9.4			9.6	
LOS by Appr:		B			B			A			A	
AllWayAvgQ:	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

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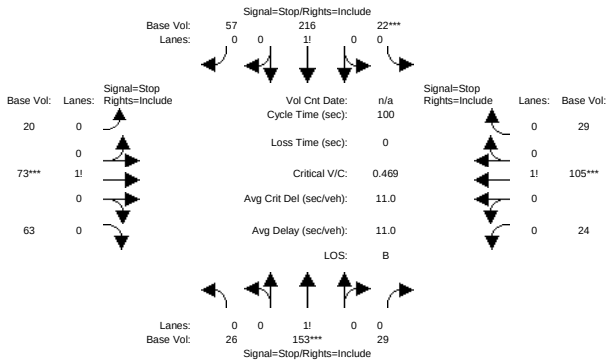
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #52: Sutter/Scott



Street Name:	Scott Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	26	153	29	22	216	57	20	73	63	24	105	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	153	29	22	216	57	20	73	63	24	105	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	28	166	32	24	235	62	22	79	68	26	114	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	166	32	24	235	62	22	79	68	26	114	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	166	32	24	235	62	22	79	68	26	114	32
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.12	0.74	0.14	0.07	0.74	0.19	0.13	0.47	0.40	0.15	0.67	0.18
Final Sat.:	82	480	91	51	501	132	79	289	249	92	403	111
Capacity Analysis Module:												
Vol/Sat:	0.35	0.35	0.35	0.47	0.47	0.47	0.27	0.27	0.27	0.28	0.28	0.28
Crit Moves:		****			****			****			****	
Delay/Veh:	10.7	10.7	10.7	12.0	12.0	12.0	10.1	10.1	10.1	10.3	10.3	10.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.7	10.7	10.7	12.0	12.0	12.0	10.1	10.1	10.1	10.3	10.3	10.3
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
ApproachDel:		10.7			12.0			10.1			10.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.7			12.0			10.1			10.3	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.4	0.4	0.4	0.8	0.8	0.8	0.3	0.3	0.3	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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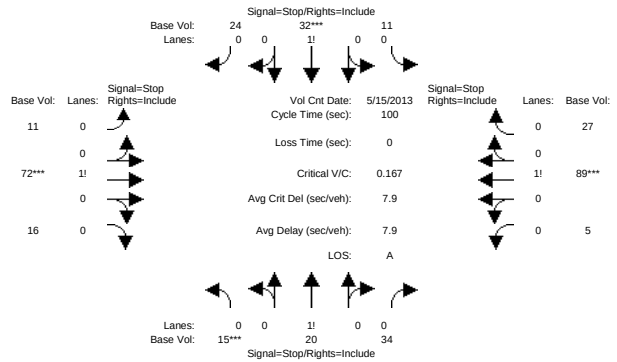
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #53: Pierce/Sutter



Street Name:	Pierce Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	15	20	34	11	32	24	11	72	16	5	89	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	20	34	11	32	24	11	72	16	5	89	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	17	23	39	13	36	27	13	82	18	6	101	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	23	39	13	36	27	13	82	18	6	101	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	23	39	13	36	27	13	82	18	6	101	31
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.22	0.29	0.49	0.16	0.48	0.36	0.11	0.73	0.16	0.04	0.74	0.22
Final Sat.:	174	232	394	129	376	282	90	588	131	34	606	184
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.10	0.10	0.10	0.14	0.14	0.14	0.17	0.17	0.17
Crit Moves:	****				****			****			****	
Delay/Veh:	7.7	7.7	7.7	7.8	7.8	7.8	8.0	8.0	8.0	8.0	8.0	8.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.7	7.7	7.7	7.8	7.8	7.8	8.0	8.0	8.0	8.0	8.0	8.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.7			7.8			8.0			8.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.7			7.8			8.0			8.0		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

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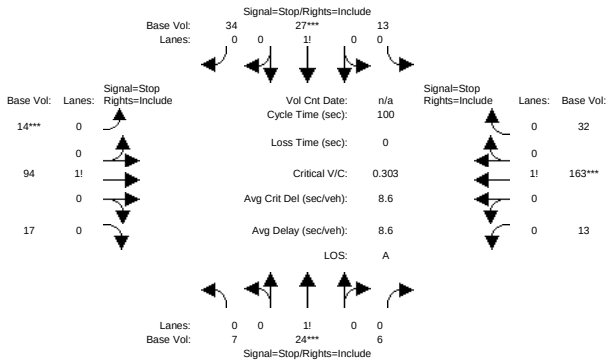
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #53: Pierce/Sutter



Street Name:	Pierce Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	7	24	6	13	27	34	14	94	17	13	163	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	24	6	13	27	34	14	94	17	13	163	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	8	29	7	15	32	40	17	112	20	15	194	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	29	7	15	32	40	17	112	20	15	194	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	29	7	15	32	40	17	112	20	15	194	38
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.65	0.16	0.18	0.36	0.46	0.11	0.75	0.14	0.06	0.79	0.15
Final Sat.:	131	450	113	129	268	337	89	595	108	51	641	126
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.12	0.12	0.12	0.19	0.19	0.19	0.30	0.30	0.30
Crit Moves:		****			****			****			****	
Delay/Veh:	8.1	8.1	8.1	8.1	8.1	8.1	8.4	8.4	8.4	9.1	9.1	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	8.1	8.1	8.1	8.1	8.4	8.4	8.4	9.1	9.1	9.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	8.1			8.1			8.4			9.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.1			8.1			8.4			9.1		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

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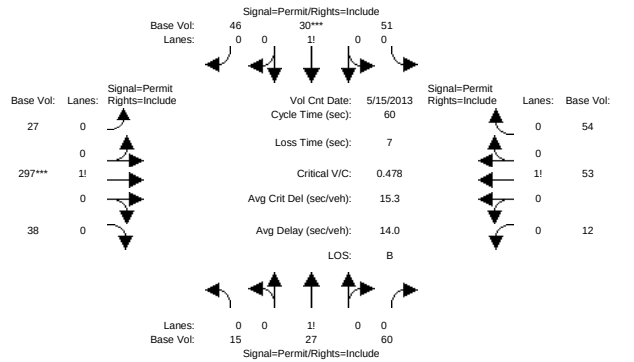
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #54: Broderick/Post



Street Name:	Broderick Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	24	24	24	24	0	29	29	29	0	0	0
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	15	27	60	51	30	46	27	297	38	12	53	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	27	60	51	30	46	27	297	38	12	53	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	17	30	67	57	34	52	30	334	43	13	60	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	30	67	57	34	52	30	334	43	13	60	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	30	67	57	34	52	30	334	43	13	60	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.64	0.60	0.62	0.60	0.72	0.72	0.71	0.67	0.67	0.66
Lanes:	0.15	0.26	0.59	0.41	0.23	0.36	0.07	0.82	0.11	0.10	0.44	0.46
Final Sat.:	181	326	724	462	272	417	102	1119	143	127	563	574
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.12	0.12	0.12	0.30	0.30	0.30	0.11	0.11	0.11
Crit Moves:					****			****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.23	0.23	0.23	0.31	0.31	0.31	0.62	0.62	0.62	0.22	0.22	0.22
Uniform Del:	11.9	11.9	11.9	12.3	12.3	12.3	11.4	11.4	11.4	9.0	9.0	9.0
IncremntDel:	1.1	1.1	1.1	1.7	1.7	1.7	4.3	4.3	4.3	0.8	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.0	13.0	13.0	14.1	14.1	14.1	15.7	15.7	15.7	9.8	9.8	9.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.0	13.0	13.0	14.1	14.1	14.1	15.7	15.7	15.7	9.8	9.8	9.8
LOS by Move:	B	B	B	B	B	B	B	B	B	A	A	A
HCM2kAvgQ:	2	2	2	2	2	2	7	7	6	2	2	2

Note: Queue reported is the number of cars per lane.

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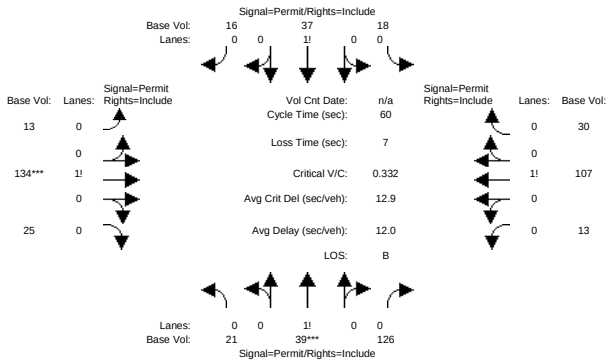
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #54: Broderick/Post



Street Name:	Broderick Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	24	24	24	24	0	29	29	29	0	0	0
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	21	39	126	18	37	16	13	134	25	13	107	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	39	126	18	37	16	13	134	25	13	107	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	22	41	133	19	39	17	14	141	26	14	113	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	41	133	19	39	17	14	141	26	14	113	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	41	133	19	39	17	14	141	26	14	113	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.64	0.67	0.67	0.66	0.72	0.72	0.71	0.71	0.71	0.70
Lanes:	0.11	0.20	0.69	0.25	0.52	0.23	0.07	0.78	0.15	0.09	0.71	0.20
Final Sat.:	138	257	830	322	661	286	103	1061	198	117	960	269
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.06	0.06	0.06	0.13	0.13	0.13	0.12	0.12	0.12
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.40	0.40	0.40	0.15	0.15	0.15	0.28	0.28	0.28	0.24	0.24	0.24
Uniform Del:	12.9	12.9	12.9	11.5	11.5	11.5	9.2	9.2	9.2	9.1	9.1	9.1
IncremntDel:	2.4	2.4	2.4	0.6	0.6	0.6	1.0	1.0	1.0	0.9	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	12.1	12.1	12.1	10.3	10.3	10.3	10.0	10.0	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	12.1	12.1	12.1	10.3	10.3	10.3	10.0	10.0	10.0
LOS by Move:	B	B	B	B	B	B	B	B	B	A	A	A
HCM2kAvgQ:	3	3	3	1	1	1	2	2	2	2	2	2

Note: Queue reported is the number of cars per lane.

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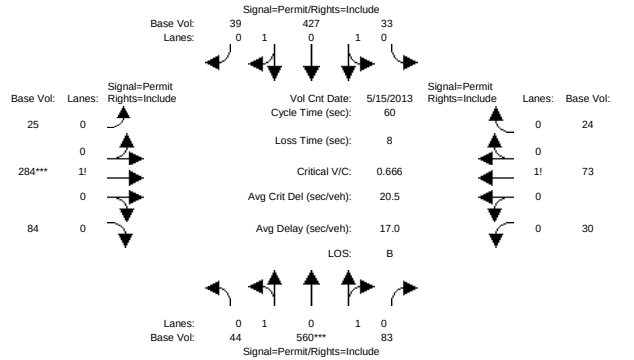
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #55: Divisadero/Post



Street Name:	Divisadero Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	44	560	83	33	427	39	25	284	84	30	73	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	560	83	33	427	39	25	284	84	30	73	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	45	571	85	34	436	40	26	290	86	31	74	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	571	85	34	436	40	26	290	86	31	74	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	571	85	34	436	40	26	290	86	31	74	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.66	0.67	0.67	0.66	0.70	0.71	0.67	0.63	0.64	0.62
Lanes:	0.13	1.63	0.24	0.13	1.71	0.16	0.06	0.72	0.22	0.24	0.57	0.19
Final Sat.:	163	2075	308	168	2170	198	85	961	284	285	693	228
Capacity Analysis Module:												
Vol/Sat:	0.28	0.28	0.28	0.20	0.20	0.20	0.30	0.30	0.30	0.11	0.11	0.11
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.53	0.53	0.53	0.39	0.39	0.39	0.86	0.86	0.86	0.31	0.31	0.31
Uniform Del:	9.7	9.7	9.7	8.8	8.8	8.8	18.1	18.1	18.1	14.2	14.2	14.2
IncremntDel:	1.6	1.6	1.6	0.9	0.9	0.9	18.5	18.5	18.5	1.9	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.2	11.2	11.2	9.6	9.6	9.6	36.7	36.7	36.7	16.1	16.1	16.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.2	11.2	11.2	9.6	9.6	9.6	36.7	36.7	36.7	16.1	16.1	16.1
LOS by Move:	B	B	B	A	A	A	D	D	D	B	B	B
HCM2kAvgQ:	4	4	4	3	3	3	10	10	10	2	2	2

Note: Queue reported is the number of cars per lane.

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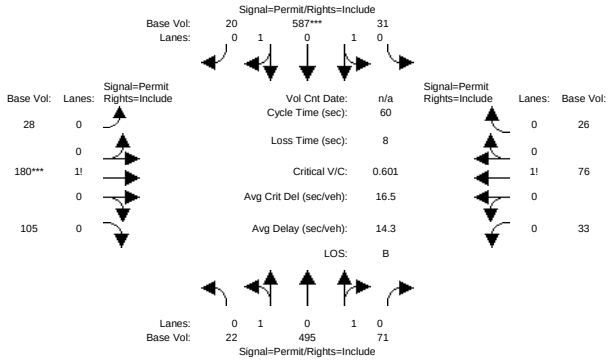
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #55: Divisadero/Post



Street Name:	Divisadero Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	22	495	71	31	587	20	28	180	105	33	76	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	495	71	31	587	20	28	180	105	33	76	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	23	527	76	33	624	21	30	191	112	35	81	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	527	76	33	624	21	30	191	112	35	81	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	527	76	33	624	21	30	191	112	35	81	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.69	0.68	0.69	0.69	0.69	0.68	0.69	0.64	0.62	0.64	0.62
Lanes:	0.07	1.69	0.24	0.10	1.84	0.06	0.09	0.56	0.35	0.25	0.55	0.20
Final Sat.:	98	2199	315	127	2404	82	114	732	427	293	674	231
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.26	0.26	0.26	0.26	0.26	0.26	0.12	0.12	0.12
Crit Moves:					****			****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.46	0.46	0.46	0.50	0.50	0.50	0.75	0.75	0.75	0.34	0.34	0.34
Uniform Del:	9.2	9.2	9.2	9.5	9.5	9.5	17.2	17.2	17.2	14.4	14.4	14.4
IncremntDel:	1.1	1.1	1.1	1.3	1.3	1.3	10.9	10.9	10.9	2.2	2.2	2.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.4	10.4	10.4	10.8	10.8	10.8	28.1	28.1	28.1	16.6	16.6	16.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.4	10.4	10.4	10.8	10.8	10.8	28.1	28.1	28.1	16.6	16.6	16.6
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	4	4	4	4	4	4	7	8	7	2	2	2

Note: Queue reported is the number of cars per lane.

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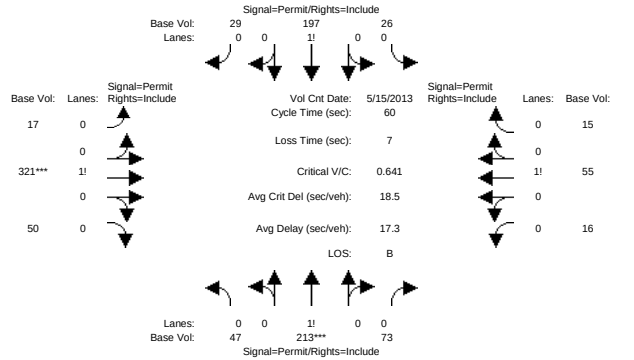
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #56: Scott/Post



Street Name:	Scott Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	24	24	24	24	24	24	29	29	29	29	29	29
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	47	213	73	26	197	29	17	321	50	16	55	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	213	73	26	197	29	17	321	50	16	55	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	49	222	76	27	205	30	18	334	52	17	57	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	222	76	27	205	30	18	334	52	17	57	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	222	76	27	205	30	18	334	52	17	57	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.66	0.69	0.70	0.69	0.73	0.73	0.71	0.67	0.67	0.67
Lanes:	0.14	0.64	0.22	0.10	0.78	0.12	0.04	0.83	0.13	0.19	0.64	0.17
Final Sat.:	180	814	279	136	1034	152	60	1139	177	238	817	223
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.20	0.20	0.20	0.29	0.29	0.29	0.07	0.07	0.07
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.68	0.68	0.68	0.50	0.50	0.50	0.61	0.61	0.61	0.15	0.15	0.15
Uniform Del:	14.8	14.8	14.8	13.5	13.5	13.5	11.3	11.3	11.3	8.6	8.6	8.6
IncremntDel:	7.2	7.2	7.2	3.3	3.3	3.3	4.1	4.1	4.1	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	22.1	22.1	22.1	16.8	16.8	16.8	15.4	15.4	15.4	9.1	9.1	9.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.1	22.1	22.1	16.8	16.8	16.8	15.4	15.4	15.4	9.1	9.1	9.1
LOS by Move:	C	C	C	B	B	B	B	B	B	A	A	A
HCM2kAvgQ:	7	7	7	4	4	4	5	5	5	1	1	1

Note: Queue reported is the number of cars per lane.

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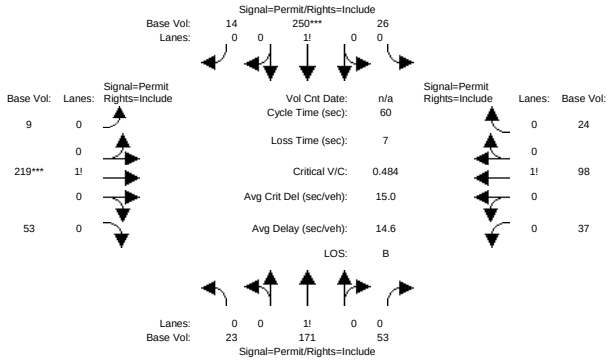
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #56: Scott/Post



Street Name:	Scott Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	24	24	24	24	24	24	29	29	29	29	29	29
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	23	171	53	26	250	14	9	219	53	37	98	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	171	53	26	250	14	9	219	53	37	98	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	23	174	54	27	255	14	9	223	54	38	100	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	174	54	27	255	14	9	223	54	38	100	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	174	54	27	255	14	9	223	54	38	100	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.70	0.68	0.71	0.71	0.71	0.72	0.72	0.71	0.65	0.66	0.65
Lanes:	0.09	0.69	0.22	0.09	0.86	0.05	0.03	0.78	0.19	0.23	0.62	0.15
Final Sat.:	123	912	283	122	1170	65	44	1065	258	289	767	188
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.22	0.22	0.22	0.21	0.21	0.21	0.13	0.13	0.13
Crit Moves:					****			****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.48	0.48	0.48	0.55	0.55	0.55	0.43	0.43	0.43	0.27	0.27	0.27
Uniform Del:	13.4	13.4	13.4	13.8	13.8	13.8	10.1	10.1	10.1	9.2	9.2	9.2
IncremntDel:	3.1	3.1	3.1	3.9	3.9	3.9	2.1	2.1	2.1	1.1	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	16.5	16.5	16.5	17.7	17.7	17.7	12.2	12.2	12.2	10.3	10.3	10.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.5	16.5	16.5	17.7	17.7	17.7	12.2	12.2	12.2	10.3	10.3	10.3
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	5	5	5	3	3	3	2	2	2

Note: Queue reported is the number of cars per lane.

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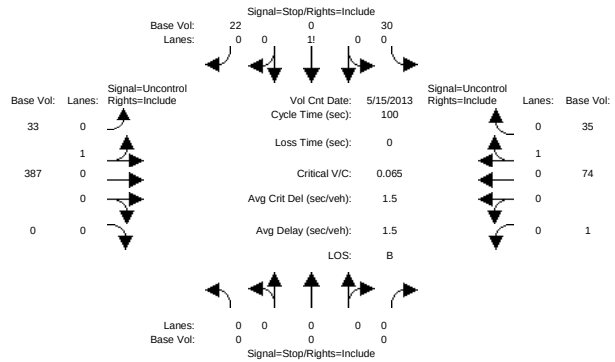
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #57: Pierce/Post



Street Name: Pierce Street Post Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	0	0	30	0	22	33	387	0	1	74	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	30	0	22	33	387	0	1	74	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	31	0	23	34	403	0	1	77	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	31	0	23	34	403	0	1	77	36
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	569	569	95	114	xxxx	xxxxx	403	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	487	434	967	1488	xxxx	xxxxx	1167	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	478	424	967	1488	xxxx	xxxxx	1167	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.07	0.00	0.02	0.02	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	608	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	11.5	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			11.5			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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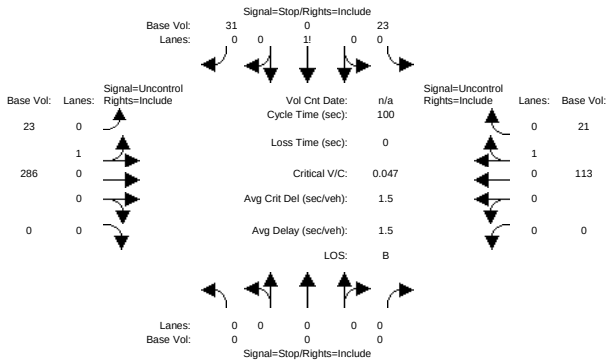
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #57: Pierce/Post



Street Name: Pierce Street Post Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	23	0	31	23	286	0	0	113	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	23	0	31	23	286	0	0	113	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	25	0	34	25	311	0	0	123	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	25	0	34	25	311	0	0	123	23
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	495	495	134	146	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	534	476	915	1436	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	527	467	915	1436	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.05	0.00	0.04	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	696	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	10.6	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			10.6			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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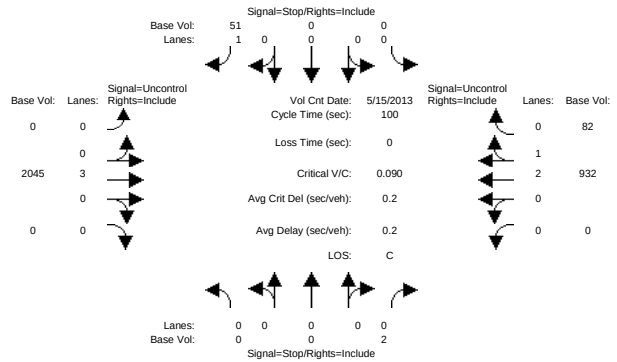
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #58: Broderick / Geary




```
Street Name:         Broderick Street                Geary Blvd
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am
Base Vol:       0    0     2     0    0    51     0 2045     0     0  932    82
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     2     0    0    51     0 2045     0     0  932    82
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     2     0    0    55     0 2223     0     0 1013    89
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     2     0    0    55     0 2223     0     0 1013    89
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   741  xxxx xxxx   382  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   359  xxxx xxxx   616  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   359  xxxx xxxx   616  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.01  xxxx xxxx  0.09  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.0  xxxx xxxx   0.3  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  15.1 xxxxx xxxx  11.4 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     C     *    *     B     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.1             11.4           xxxxxx           xxxxxx
ApproachLOS:         C                B                *                *
Note: Queue reported is the number of cars per lane.
```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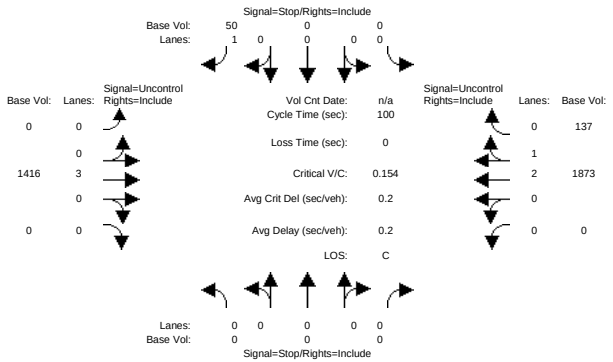
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #58: Broderick / Geary




```
Street Name:         Broderick Street                Geary Blvd
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0    50     0 1416     0     0 1873   137
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0    50     0 1416     0     0 1873   137
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0     0    0    54     0 1539     0     0 2036   149
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     0    0    54     0 1539     0     0 2036   149
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx   753  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx   352  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx   352  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  0.15  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.5  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  17.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     C     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:   xxxxxx             17.1           xxxxxx           xxxxxx
ApproachLOS:      *                 C                *                *
Note: Queue reported is the number of cars per lane.
```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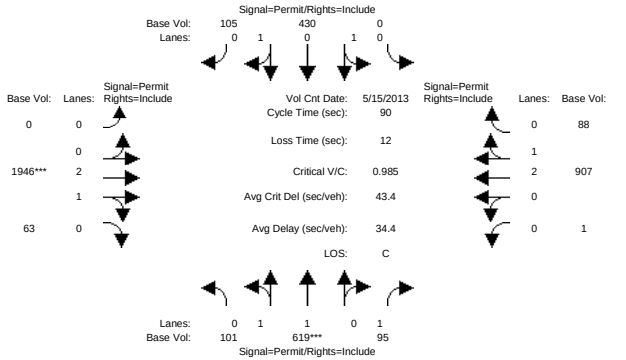
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #59: Divisadero/Geary



Street Name:	Divisadero Street							Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Min. Green:	32	32	32	32	32	32	46	46	46	46	46	46	
Y+R:	7.0	7.0	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	5.0	
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am													
Base Vol:	101	619	95	0	430	105	0	1946	63	1	907	88	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	101	619	95	0	430	105	0	1946	63	1	907	88	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
PHF Volume:	106	652	100	0	453	111	0	2048	66	1	955	93	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	106	652	100	0	453	111	0	2048	66	1	955	93	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	106	652	100	0	453	111	0	2048	66	1	955	93	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.57	0.57	0.55	0.95	0.73	0.71	1.00	0.74	0.73	0.69	0.69	0.68	
Lanes:	0.28	1.72	1.00	0.00	1.60	0.40	0.00	2.91	0.09	0.01	2.73	0.26	
Final Sat.:	305	1866	1037	0	2215	541	0	4058	131	4	3555	345	
Capacity Analysis Module:													
Vol/Sat:	0.35	0.35	0.10	0.00	0.20	0.20	0.00	0.50	0.50	0.27	0.27	0.27	
Crit Moves:		****						****					
Green/Cycle:	0.36	0.36	0.36	0.00	0.36	0.36	0.00	0.51	0.51	0.51	0.51	0.51	
Volume/Cap:	0.98	0.98	0.27	0.00	0.57	0.57	0.00	0.99	0.99	0.53	0.53	0.53	
Uniform Del:	28.7	28.7	20.7	0.0	23.5	23.5	0.0	21.7	21.7	14.7	14.7	14.7	
IncremntDel:	28.3	28.3	1.8	0.0	2.5	2.5	0.0	16.8	16.8	1.0	1.0	1.0	
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	
Delay/Veh:	57.0	57.0	22.5	0.0	25.9	25.9	0.0	38.5	38.5	15.7	15.7	15.7	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	57.0	57.0	22.5	0.0	25.9	25.9	0.0	38.5	38.5	15.7	15.7	15.7	
LOS by Move:	E	E	C	A	C	C	A	D	D	B	B	B	
HCM2kAvgQ:	16	17	2	0	7	7	0	28	28	8	8	7	

Note: Queue reported is the number of cars per lane.

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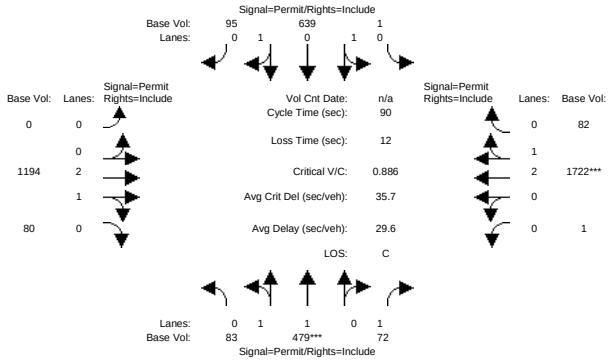
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #59: Divisadero/Geary



Street Name:	Divisadero Street							Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Min. Green:	34	34	34	34	34	34	44	44	44	44	44	44	
Y+R:	7.0	7.0	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	5.0	
Volume Module:													
Base Vol:	83	479	72	1	639	95	0	1194	80	1	1722	82	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	83	479	72	1	639	95	0	1194	80	1	1722	82	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
PHF Volume:	86	494	74	1	659	98	0	1231	82	1	1775	85	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	86	494	74	1	659	98	0	1231	82	1	1775	85	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	86	494	74	1	659	98	0	1231	82	1	1775	85	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.51	0.52	0.56	0.70	0.70	0.69	1.00	0.73	0.72	0.69	0.69	0.69	
Lanes:	0.30	1.70	1.00	0.01	1.73	0.26	0.00	2.81	0.19	0.01	2.86	0.13	
Final Sat.:	291	1678	1059	4	2320	345	0	3907	262	2	3749	179	
Capacity Analysis Module:													
Vol/Sat:	0.29	0.29	0.07	0.28	0.28	0.28	0.00	0.32	0.32	0.47	0.47	0.47	
Crit Moves:		****									****		
Green/Cycle:	0.38	0.38	0.38	0.38	0.38	0.38	0.00	0.49	0.49	0.49	0.49	0.49	
Volume/Cap:	0.78	0.78	0.19	0.75	0.75	0.75	0.00	0.64	0.64	0.97	0.97	0.97	
Uniform Del:	24.7	24.7	18.7	24.3	24.3	24.3	0.0	17.2	17.2	22.3	22.3	22.3	
IncremntDel:	7.9	7.9	1.0	5.2	5.2	5.2	0.0	1.6	1.6	14.3	14.3	14.3	
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	
Delay/Veh:	32.6	32.6	19.8	29.5	29.5	29.5	0.0	18.7	18.7	36.6	36.6	36.6	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	32.6	32.6	19.8	29.5	29.5	29.5	0.0	18.7	18.7	36.6	36.6	36.6	
LOS by Move:	C	C	B	C	C	C	A	B	B	D	D	D	
HCM2kAvgQ:	9	10	1	10	10	10	0	11	11	24	24	24	

Note: Queue reported is the number of cars per lane.

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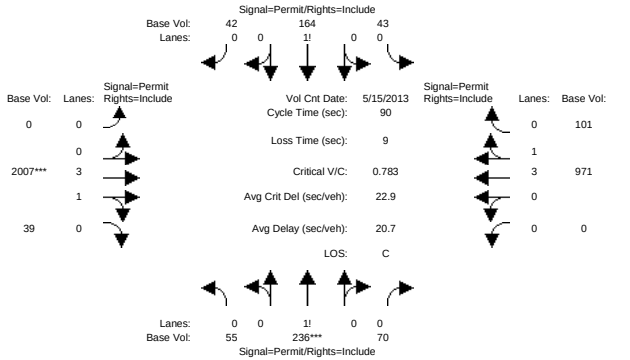
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #60: Scott/Geary



Street Name:	Scott Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	35	35	35	35	35	35	41	41	41	41	41	41
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	55	236	70	43	164	42	0	2007	39	0	971	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	236	70	43	164	42	0	2007	39	0	971	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	60	257	76	47	178	46	0	2182	42	0	1055	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	257	76	47	178	46	0	2182	42	0	1055	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	257	76	47	178	46	0	2182	42	0	1055	110
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.65	0.65	0.65	0.64	1.00	0.75	0.74	1.00	0.74	0.73
Lanes:	0.15	0.65	0.20	0.17	0.66	0.17	0.00	3.92	0.08	0.00	3.62	0.38
Final Sat.:	191	820	243	212	808	207	0	5560	108	0	5075	528
Capacity Analysis Module:												
Vol/Sat:	0.31	0.31	0.31	0.22	0.22	0.22	0.00	0.39	0.39	0.00	0.21	0.21
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.50	0.50	0.00	0.50	0.50
Volume/Cap:	0.78	0.78	0.78	0.55	0.55	0.55	0.00	0.78	0.78	0.00	0.42	0.42
Uniform Del:	23.6	23.6	23.6	20.8	20.8	20.8	0.0	18.5	18.5	0.0	14.2	14.2
IncremntDel:	11.6	11.6	11.6	4.4	4.4	4.4	0.0	2.2	2.2	0.0	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	35.2	35.2	35.2	25.3	25.3	25.3	0.0	20.7	20.7	0.0	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.2	35.2	35.2	25.3	25.3	25.3	0.0	20.7	20.7	0.0	14.6	14.6
LOS by Move:	D	D	D	C	C	C	A	C	C	A	B	B
HCM2kAvgQ:	12	12	11	6	6	6	0	16	16	0	6	6

Note: Queue reported is the number of cars per lane.

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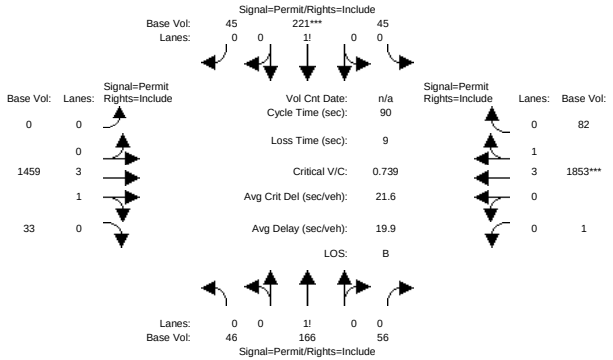
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #60: Scott/Geary



Street Name:	Scott Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	35	35	35	35	35	35	41	41	41	41	41	41
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	46	166	56	45	221	45	0	1459	33	1	1853	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	166	56	45	221	45	0	1459	33	1	1853	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	180	61	49	240	49	0	1586	36	1	2014	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	180	61	49	240	49	0	1586	36	1	2014	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	180	61	49	240	49	0	1586	36	1	2014	89
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.64	0.67	0.67	0.66	1.00	0.75	0.74	0.69	0.69	0.69
Lanes:	0.17	0.62	0.21	0.14	0.71	0.15	0.00	3.91	0.09	0.01	3.82	0.17
Final Sat.:	212	763	257	184	902	184	0	5543	125	3	5046	223
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.27	0.27	0.27	0.00	0.29	0.29	0.40	0.40	0.40
Crit Moves:					****						****	
Green/Cycle:	0.39	0.39	0.39	0.39	0.39	0.39	0.00	0.51	0.51	0.51	0.51	0.51
Volume/Cap:	0.61	0.61	0.61	0.68	0.68	0.68	0.00	0.56	0.56	0.78	0.78	0.78
Uniform Del:	22.0	22.0	22.0	22.9	22.9	22.9	0.0	15.1	15.1	17.9	17.9	17.9
IncremntDel:	5.6	5.6	5.6	7.5	7.5	7.5	0.0	0.8	0.8	2.3	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	27.7	27.7	27.7	30.4	30.4	30.4	0.0	15.9	15.9	20.2	20.2	20.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.7	27.7	27.7	30.4	30.4	30.4	0.0	15.9	15.9	20.2	20.2	20.2
LOS by Move:	C	C	C	C	C	C	A	B	B	C	C	C
HCM2kAvgQ:	7	7	7	9	9	9	0	9	9	15	15	15

Note: Queue reported is the number of cars per lane.

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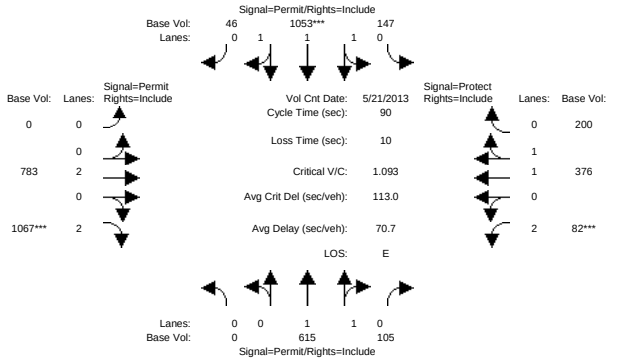
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #61: S Van Ness/13th Street

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Street Name:            S Van Ness                    13th Street
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   30   30    30   30    0    39   39   39     7    0   50
Y+R:          4.0  5.0  5.0   5.0  5.0  4.0  10.0 10.0 10.0   5.0  4.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 21 May 2013 << 8:00-9:00am
Base Vol:       0  615  105   147 1053   46     0  783 1067    82  376  200
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  615  105   147 1053   46     0  783 1067    82  376  200
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.94 0.94 0.94  0.94 0.94 0.94  0.94 0.94 0.94  0.94 0.94 0.94
PHF Volume:     0  654  112   156 1120   49     0  833 1135    87  400  213
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0  654  112   156 1120   49     0  833 1135    87  400  213
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  654  112   156 1120   49     0  833 1135    87  400  213
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.74 0.74  0.50 0.50 0.50  1.00 0.81 0.63  0.79 0.77 0.76
Lanes:       0.00 1.71 0.29  0.35 2.54 0.11  0.00 2.00 2.00  2.00 1.30 0.70
Final Sat.:     0 2409  411   335 2400  105     0 3079 2386  2987 1898 1010
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.27 0.27  0.47 0.47 0.47  0.00 0.27 0.48  0.03 0.21 0.21
Crit Moves:                       ****                    ****  ****
Green/Cycle: 0.00 0.38 0.38  0.38 0.38 0.38  0.00 0.43 0.43  0.08 0.51 0.51
Volume/Cap:  0.00 0.72 0.72  1.24 1.24 1.24  0.00 0.62 1.10  0.38 0.41 0.41
Uniform Del:  0.0 23.9 23.9  28.0 28.0 28.0   0.0 19.8 25.5  39.4 13.6 13.6
IncremntDel:  0.0  4.2  4.2 114.1  114 114.1   0.0  2.2 58.7   4.6  0.8  0.8
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:    0.0 28.1 28.1 142.1  142 142.1   0.0 22.0 84.2  44.0 14.5 14.5
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 28.1 28.1 142.1  142 142.1   0.0 22.0 84.2  44.0 14.5 14.5
LOS by Move:    A    C    C     F    F    F     A    C    F     D    B    B
HCM2kAvgQ:      0   10   10    26   26   26     0   10   29     1    6    5
Note: Queue reported is the number of cars per lane.
```


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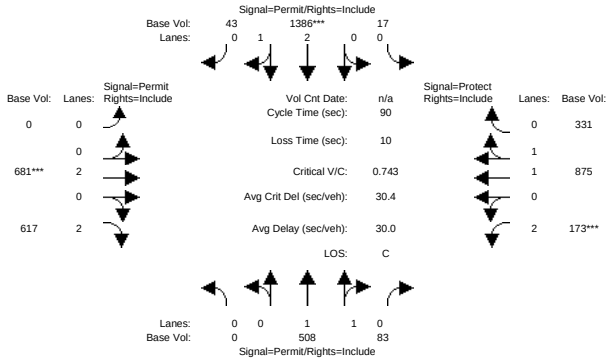
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #61: S Van Ness/13th Street




```
Street Name:            S Van Ness                    13th Street
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   35   35     0   35   35    34   34   34     7    0   45
Y+R:          4.0  5.0  5.0   5.0  5.0  4.0  10.0 10.0 10.0   5.0  4.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  508   83    17 1386   43     0  681  617   173  875  331
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  508   83    17 1386   43     0  681  617   173  875  331
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.98 0.98 0.98  0.98 0.98 0.98  0.98 0.98 0.98  0.98 0.98 0.98
PHF Volume:     0  518   85    17 1414   44     0  695  630   177  893  338
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0  518   85    17 1414   44     0  695  630   177  893  338
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  518   85    17 1414   44     0  695  630   177  893  338
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.74 0.74  0.69 0.69 0.69  1.00 0.81 0.61  0.79 0.78 0.76
Lanes:       0.00 1.72 0.28  0.03 2.88 0.09  0.00 2.00 2.00  2.00 1.44 0.56
Final Sat.:     0 2426  396    46 3764  117     0 3079 2315  2987 2131  806
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.21 0.21  0.38 0.38 0.38  0.00 0.23 0.27  0.06 0.42 0.42
Crit Moves:                       ****                    ****  ****
Green/Cycle: 0.00 0.43 0.43  0.43 0.43 0.43  0.00 0.38 0.38  0.08 0.46 0.46
Volume/Cap:  0.00 0.49 0.49  0.87 0.87 0.87  0.00 0.60 0.72  0.76 0.92 0.92
Uniform Del:  0.0 18.4 18.4  23.2 23.2 23.2   0.0 22.5 23.9  40.7 23.0 23.0
IncremntDel:  0.0  1.4  1.4   6.3  6.3  6.3   0.0  2.3  5.1  20.6 11.6 11.6
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:    0.0 19.8 19.8  29.4 29.4 29.4   0.0 24.8 29.0  61.3 34.6 34.6
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 19.8 19.8  29.4 29.4 29.4   0.0 24.8 29.0  61.3 34.6 34.6
LOS by Move:    A    B    B     C    C    C     A    C    C     E    C    C
HCM2kAvgQ:      0    6    6    16   16   16     0    9   10     2   18   17
Note: Queue reported is the number of cars per lane.
```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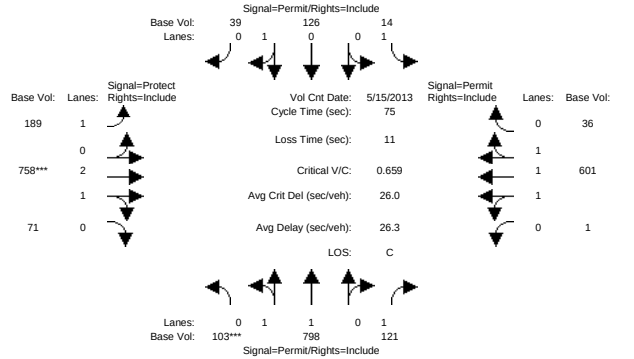
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #62: 13th St / Folsom



Street Name:	Folsom Street						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	29	0	29	29	29	29	10	35	35	21	21	21
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	103	798	121	14	126	39	189	758	71	1	601	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	798	121	14	126	39	189	758	71	1	601	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	111	858	130	15	135	42	203	815	76	1	646	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	858	130	15	135	42	203	815	76	1	646	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	858	130	15	135	42	203	815	76	1	646	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.54	0.16	0.72	0.72	0.81	0.77	0.76	0.69	0.69	0.69
Lanes:	0.23	1.77	1.00	1.00	0.76	0.24	1.00	2.74	0.26	0.01	2.82	0.17
Final Sat.:	309	2394	1027	303	1043	323	1539	3990	374	6	3716	223
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.13	0.05	0.13	0.13	0.13	0.20	0.20	0.17	0.17	0.17
Crit Moves:	****							****				
Green/Cycle:	0.39	0.39	0.39	0.39	0.39	0.39	0.19	0.47	0.47	0.28	0.28	0.28
Volume/Cap:	0.93	0.93	0.33	0.13	0.34	0.34	0.71	0.44	0.44	0.62	0.62	0.62
Uniform Del:	22.0	22.0	16.2	14.8	16.2	16.2	28.6	13.4	13.4	23.5	23.5	23.5
IncremntDel:	15.0	15.0	2.2	2.2	1.7	1.7	13.7	0.7	0.7	2.6	2.6	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.0	37.0	18.3	17.1	17.9	17.9	42.3	14.1	14.1	26.2	26.2	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.0	37.0	18.3	17.1	17.9	17.9	42.3	14.1	14.1	26.2	26.2	26.2
LOS by Move:	D	D	B	B	B	B	D	B	B	C	C	C
HCM2kAvgQ:	14	14	2	0	3	3	5	5	5	5	5	5

Note: Queue reported is the number of cars per lane.

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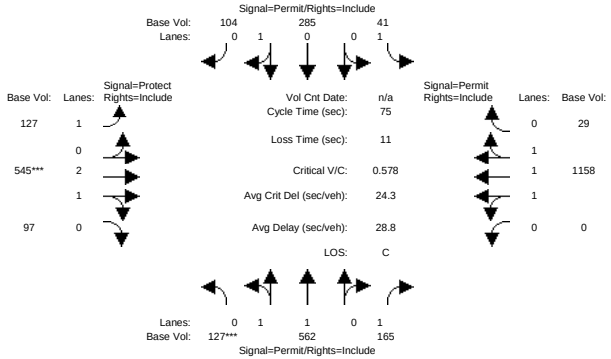
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #62: 13th St / Folsom



Street Name:	Folsom Street						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	29	0	29	29	29	29	7	35	35	24	24	24
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	127	562	165	41	285	104	127	545	97	0	1158	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	562	165	41	285	104	127	545	97	0	1158	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	130	573	168	42	291	106	130	556	99	0	1182	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	130	573	168	42	291	106	130	556	99	0	1182	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	130	573	168	42	291	106	130	556	99	0	1182	30
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.54	0.54	0.58	0.26	0.72	0.70	0.81	0.76	0.75	0.91	0.74	0.74
Lanes:	0.37	1.63	1.00	1.00	0.73	0.27	1.00	2.54	0.46	0.00	2.93	0.07
Final Sat.:	380	1682	1111	499	992	362	1539	3660	651	0	4119	103
Capacity Analysis Module:												
Vol/Sat:	0.34	0.34	0.15	0.08	0.29	0.29	0.08	0.15	0.15	0.00	0.29	0.29
Crit Moves:	****							****				
Green/Cycle:	0.39	0.39	0.39	0.39	0.39	0.39	0.15	0.47	0.47	0.00	0.32	0.32
Volume/Cap:	0.88	0.88	0.39	0.22	0.76	0.76	0.57	0.33	0.33	0.00	0.90	0.90
Uniform Del:	21.4	21.4	16.6	15.4	20.0	20.0	29.8	12.6	12.6	0.0	24.3	24.3
IncremntDel:	13.4	13.4	2.7	2.6	9.9	9.9	10.2	0.4	0.4	0.0	9.6	9.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	34.9	34.9	19.3	18.0	29.8	29.8	40.0	13.0	13.0	0.0	33.9	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	34.9	19.3	18.0	29.8	29.8	40.0	13.0	13.0	0.0	33.9	33.9
LOS by Move:	C	C	B	B	C	C	D	B	B	A	C	C
HCM2kAvgQ:	10	10	3	1	10	10	3	3	3	0	11	11

Note: Queue reported is the number of cars per lane.

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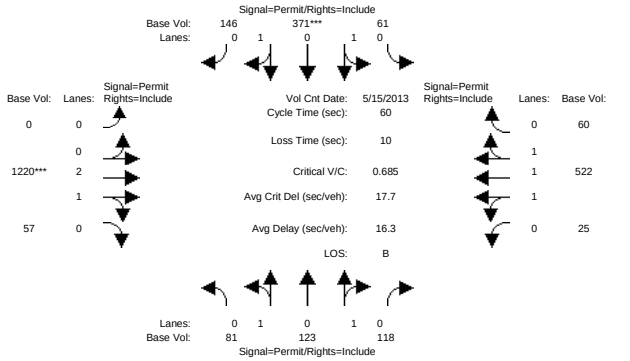
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #63: 13th St / Harrison




```
Street Name:         Harrison Street                 13th Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   25   25   25    25   25   25    25   25   25    25   25   25
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am
Base Vol:     81  123  118    61  371  146     0 1220   57    25  522   60
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  81  123  118    61  371  146     0 1220   57    25  522   60
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:   85  129  124    64  391  154     0 1284   60    26  549   63
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  85  129  124    64  391  154     0 1284   60    26  549   63
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  85  129  124    64  391  154     0 1284   60    26  549   63
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.52 0.52 0.50  0.64 0.64 0.63  1.00 0.74 0.74  0.63 0.63 0.62
Lanes:       0.50 0.75 0.75  0.21 1.28 0.51  0.00 2.87 0.13  0.12 2.58 0.30
Final Sat.:   492  746  716   256 1555  612     0 4021  188   147 3065  352
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.17 0.17  0.25 0.25 0.25  0.00 0.32 0.32  0.18 0.18 0.18
Crit Moves:                      ****           ****
Green/Cycle: 0.42 0.42 0.42  0.42 0.42 0.42  0.00 0.42 0.42  0.42 0.42 0.42
Volume/Cap:  0.42 0.42 0.42  0.60 0.60 0.60  0.00 0.77 0.77  0.43 0.43 0.43
Uniform Del: 12.4 12.4 12.4  13.6 13.6 13.6   0.0 15.0 15.0  12.4 12.4 12.4
IncremntDel:  1.6  1.6  1.6   2.7  2.7  2.7   0.0  3.3  3.3   0.9  0.9  0.9
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   13.9 13.9 13.9  16.3 16.3 16.3   0.0 18.3 18.3  13.3 13.3 13.3
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  13.9 13.9 13.9  16.3 16.3 16.3   0.0 18.3 18.3  13.3 13.3 13.3
LOS by Move:    B    B    B     B    B    B     A    B    B     B    B    B
HCM2kAvgQ:      3    3    3     6    6    6     0    9    9     3    3    3
Note: Queue reported is the number of cars per lane.
```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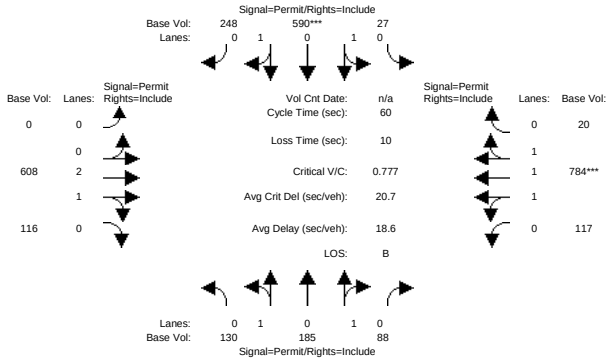
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #63: 13th St / Harrison




```
Street Name:         Harrison Street                 13th Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   25   25   25    25   25   25    25   25   25    25   25   25
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    130  185   88    27  590  248     0  608  116   117  784   20
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse: 130  185   88    27  590  248     0  608  116   117  784   20
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:  134  191   91    28  608  256     0  627  120   121  808   21
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol: 134  191   91    28  608  256     0  627  120   121  808   21
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume: 134  191   91    28  608  256     0  627  120   121  808   21
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.40 0.40 0.39  0.68 0.68 0.66  1.00 0.73 0.72  0.56 0.56 0.56
Lanes:       0.64 0.92 0.44  0.06 1.36 0.58  0.00 2.52 0.48  0.38 2.55 0.07
Final Sat.:   491  699  332    80 1742  732     0 3470  662   404 2705   69
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.27 0.27 0.27  0.35 0.35 0.35  0.00 0.18 0.18  0.30 0.30 0.30
Crit Moves:                      ****                           ****
Green/Cycle: 0.42 0.42 0.42  0.42 0.42 0.42  0.00 0.42 0.42  0.42 0.42 0.42
Volume/Cap:  0.66 0.66 0.66  0.84 0.84 0.84  0.00 0.43 0.43  0.72 0.72 0.72
Uniform Del: 14.0 14.0 14.0  15.7 15.7 15.7   0.0 12.5 12.5  14.6 14.6 14.6
IncremntDel:  5.2  5.2  5.2   7.9  7.9  7.9   0.0  0.8  0.8   3.4  3.4  3.4
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   19.3 19.3 19.3  23.6 23.6 23.6   0.0 13.3 13.3  17.9 17.9 17.9
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  19.3 19.3 19.3  23.6 23.6 23.6   0.0 13.3 13.3  17.9 17.9 17.9
LOS by Move:    B    B    B     C    C    C     A    B    B     B    B    B
HCM2kAvgQ:      5    5    5    11   11   11     0    4    4     6    6    6
Note: Queue reported is the number of cars per lane.
```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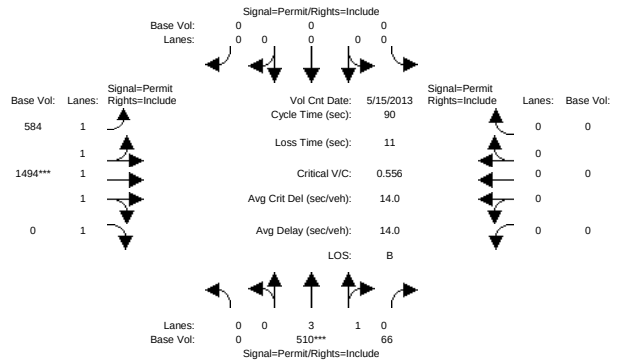
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #64: 10th St / Bryant



Street Name:	Bryant Street						10th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	19	19	0	0	0	0	59	59	0	0	0
Y+R:	4.0	5.5	5.5	5.5	5.5	4.0	4.0	5.5	5.5	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	510	66	0	0	0	584	1494	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	510	66	0	0	0	584	1494	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	527	68	0	0	0	604	1545	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	527	68	0	0	0	604	1545	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	527	68	0	0	0	604	1545	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.74	0.68	1.00	1.00	1.00	0.74	0.74	0.91	1.00	1.00	1.00
Lanes:	0.00	3.51	0.49	0.00	0.00	0.00	1.13	2.87	1.00	0.00	0.00	0.00
Final Sat.:	0	4928	638	0	0	0	1586	4058	1729	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.21	0.21	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.51	0.51	0.00	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.00
Uniform Del:	0.0	31.4	31.4	0.0	0.0	0.0	8.1	8.1	0.0	0.0	0.0	0.0
IncremntDel:	0.0	1.6	1.6	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	32.9	32.9	0.0	0.0	0.0	8.7	8.7	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	32.9	32.9	0.0	0.0	0.0	8.7	8.7	0.0	0.0	0.0	0.0
LOS by Move:	A	C	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	4	4	0	0	0	9	9	0	0	0	0

Note: Queue reported is the number of cars per lane.

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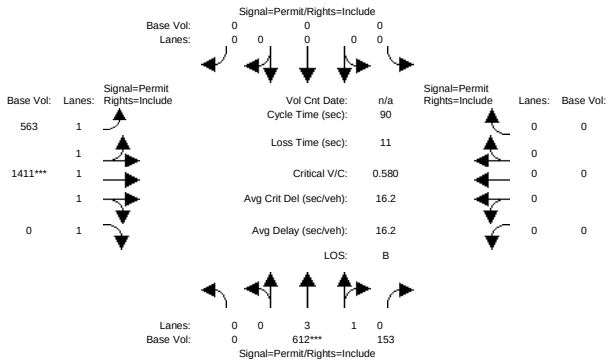
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #64: 10th St / Bryant



Street Name:	Bryant Street						10th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	19	19	0	0	0	0	59	59	0	0	0
Y+R:	4.0	5.5	5.5	4.0	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	612	153	0	0	0	563	1411	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	612	153	0	0	0	563	1411	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	636	159	0	0	0	585	1465	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	636	159	0	0	0	585	1465	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	636	159	0	0	0	585	1465	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.73	0.67	1.00	1.00	1.00	0.74	0.74	0.91	1.00	1.00	1.00
Lanes:	0.00	3.14	0.86	0.00	0.00	0.00	1.14	2.86	1.00	0.00	0.00	0.00
Final Sat.:	0	4353	1088	0	0	0	1610	4035	1729	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.15	0.00	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.22	0.22	0.00	0.00	0.00	0.66	0.66	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.66	0.66	0.00	0.00	0.00	0.55	0.55	0.00	0.00	0.00	0.00
Uniform Del:	0.0	31.9	31.9	0.0	0.0	0.0	8.4	8.4	0.0	0.0	0.0	0.0
IncremntDel:	0.0	2.8	2.8	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	34.7	34.7	0.0	0.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	34.7	34.7	0.0	0.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0
LOS by Move:	A	C	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	6	6	0	0	0	9	9	0	0	0	0

Note: Queue reported is the number of cars per lane.

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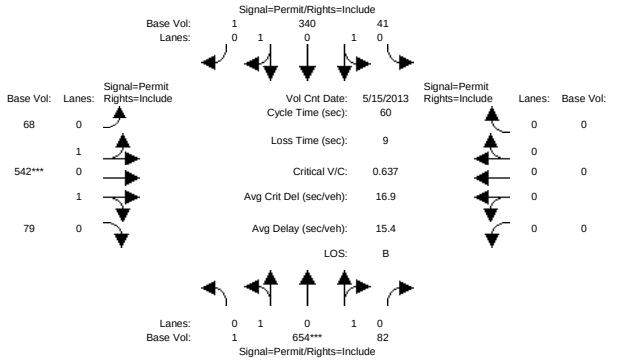
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #65: 14th St / S Van Ness




```
Street Name:            S Van Ness                    14th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   30   30     30   30    0     21   21   21     0    0    0
Y+R:          4.0  4.5  4.5    4.5  4.5  4.0    4.5  4.5  4.5   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am
Base Vol:       1  654   82     41  340    1     68  542   79     0    0    0
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    1  654   82     41  340    1     68  542   79     0    0    0
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.96 0.96 0.96   0.96 0.96 0.96   0.96 0.96 0.96  0.96 0.96 0.96
PHF Volume:     1  681   85     43  354    1     71  565   82     0    0    0
Reduct Vol:     0    0    0      0    0    0      0    0    0     0    0    0
Reduced Vol:    1  681   85     43  354    1     71  565   82     0    0    0
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    1  681   85     43  354    1     71  565   82     0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900   1900 1900  1900   1900 1900  1900  1900 1900  1900
Adjustment:  0.71 0.71  0.71   0.64 0.64  0.64   0.73 0.74  0.72  1.00 1.00  1.00
Lanes:       0.01 1.77  0.22   0.21 1.78  0.01   0.20 1.57  0.23  0.00 0.00  0.00
Final Sat.:     4 2403   301    260 2158     6    275 2191   319     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.28 0.28  0.28   0.16 0.16  0.16   0.26 0.26  0.26  0.00 0.00  0.00
Crit Moves:       ****                           ****
Green/Cycle: 0.50 0.50  0.50   0.50 0.50  0.50   0.35 0.35  0.35  0.00 0.00  0.00
Volume/Cap:  0.57 0.57  0.57   0.33 0.33  0.33   0.74 0.74  0.74  0.00 0.00  0.00
Uniform Del: 10.5 10.5  10.5    9.0  9.0   9.0   17.1 17.1  17.1   0.0  0.0   0.0
IncremntDel:  1.7  1.7   1.7    0.7  0.7   0.7    4.9  4.9   4.9   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0    0.0  0.0   0.0    0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00  0.00 0.00  0.00
Delay/Veh:   12.2 12.2  12.2    9.7  9.7   9.7   22.0 22.0  22.0   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  12.2 12.2  12.2    9.7  9.7   9.7   22.0 22.0  22.0   0.0  0.0   0.0
LOS by Move:    B    B     B      A    A     A      C    C     C     A    A     A
HCM2kAvgQ:      5    5     5      2    2     2      8    8     8     0    0     0
Note: Queue reported is the number of cars per lane.
```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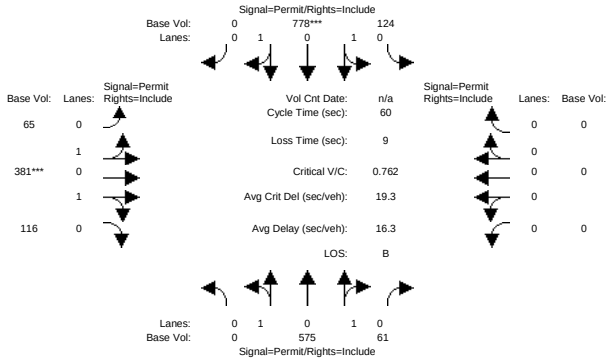
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #65: 14th St / S Van Ness




```
Street Name:            S Van Ness                    14th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   32   32     32   32    0     19   19   19     0    0    0
Y+R:          4.0  4.5  4.5    4.5  4.5  4.0    4.5  4.5  4.5   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  575   61    124  778    0     65  381  116     0    0    0
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  575   61    124  778    0     65  381  116     0    0    0
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:     0  605   64    131  819    0     68  401  122     0    0    0
Reduct Vol:     0    0    0      0    0    0      0    0    0     0    0    0
Reduced Vol:    0  605   64    131  819    0     68  401  122     0    0    0
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  605   64    131  819    0     68  401  122     0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900   1900 1900  1900   1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.75  0.74   0.58 0.58  0.95   0.72 0.72  0.71  1.00 1.00  1.00
Lanes:       0.00 1.81  0.19   0.28 1.72  0.00   0.23 1.35  0.42  0.00 0.00  0.00
Final Sat.:     0 2571   273    303 1898     0    317 1856   565     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.24  0.24   0.43 0.43  0.00   0.22 0.22  0.22  0.00 0.00  0.00
Crit Moves:                       ****                 ****
Green/Cycle: 0.00 0.53  0.53   0.53 0.53  0.00   0.32 0.32  0.32  0.00 0.00  0.00
Volume/Cap:  0.00 0.44  0.44   0.81 0.81  0.00   0.68 0.68  0.68  0.00 0.00  0.00
Uniform Del:  0.0  8.5   8.5   11.5 11.5   0.0   17.9 17.9  17.9   0.0  0.0   0.0
IncremntDel:  0.0  0.9   0.9    6.1  6.1   0.0    4.3  4.3   4.3   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0    0.0  0.0   0.0    0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 1.00  1.00   1.00 1.00  0.00   1.00 1.00  1.00  0.00 0.00  0.00
Delay/Veh:    0.0  9.5   9.5   17.6 17.6   0.0   22.2 22.2  22.2   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  9.5   9.5   17.6 17.6   0.0   22.2 22.2  22.2   0.0  0.0   0.0
LOS by Move:    A    A     A      B    B     A      C    C     C     A    A     A
HCM2kAvgQ:      0    4     4      8    8     0      6    6     6     0    0     0
Note: Queue reported is the number of cars per lane.
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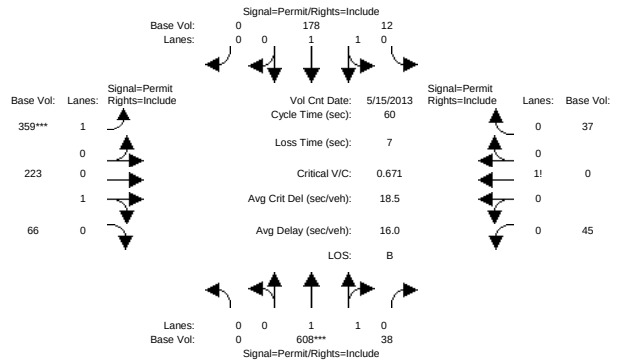
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #66: 14th St / Folsom



Street Name:	Folsom Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	22	22	22	22	0	21	21	21	7	0	7
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	4.0	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	608	38	12	178	0	359	223	66	45	0	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	608	38	12	178	0	359	223	66	45	0	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	654	41	13	191	0	386	240	71	48	0	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	654	41	13	191	0	386	240	71	48	0	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	654	41	13	191	0	386	240	71	48	0	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.74	0.69	0.69	1.00	0.58	0.72	0.70	0.54	1.00	0.54
Lanes:	0.00	1.88	0.12	0.13	1.87	0.00	1.00	0.77	0.23	0.55	0.00	0.45
Final Sat.:	0	2690	168	165	2447	0	1103	1051	311	565	0	465
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.24	0.08	0.08	0.00	0.35	0.23	0.23	0.09	0.00	0.09
Crit Moves:		****					****					
Green/Cycle:	0.00	0.37	0.37	0.37	0.37	0.00	0.52	0.52	0.52	0.52	0.00	0.52
Volume/Cap:	0.00	0.66	0.66	0.21	0.21	0.00	0.68	0.44	0.44	0.17	0.00	0.17
Uniform Del:	0.0	15.9	15.9	13.1	13.1	0.0	10.8	9.1	9.1	7.7	0.0	7.7
IncremntDel:	0.0	3.3	3.3	0.5	0.5	0.0	6.3	2.0	2.0	0.7	0.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	19.2	19.2	13.6	13.6	0.0	17.1	11.1	11.1	8.3	0.0	8.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.2	19.2	13.6	13.6	0.0	17.1	11.1	11.1	8.3	0.0	8.3
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	7	7	1	1	0	5	4	3	1	0	1

Note: Queue reported is the number of cars per lane.

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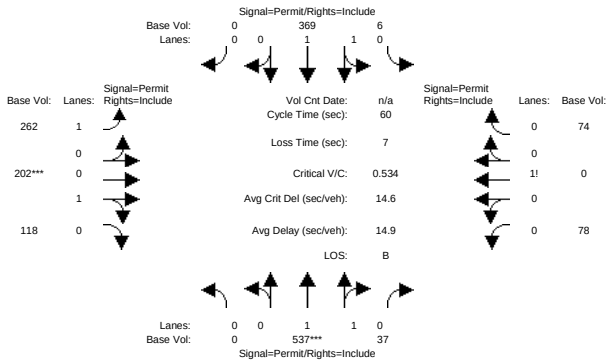
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #66: 14th St / Folsom



Street Name:	Folsom Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	29	29	29	29	0	24	24	24	9	0	9
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	4.0	3.5
Volume Module:												
Base Vol:	0	537	37	6	369	0	262	202	118	78	0	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	537	37	6	369	0	262	202	118	78	0	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	571	39	6	393	0	279	215	126	83	0	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	571	39	6	393	0	279	215	126	83	0	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	571	39	6	393	0	279	215	126	83	0	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.74	0.71	0.71	1.00	0.56	0.71	0.68	0.50	1.00	0.50
Lanes:	0.00	1.87	0.13	0.03	1.97	0.00	1.00	0.62	0.38	0.51	0.00	0.49
Final Sat.:	0	2672	184	43	2666	0	1058	833	486	485	0	460
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.15	0.15	0.00	0.26	0.26	0.26	0.17	0.00	0.17
Crit Moves:		****						****				
Green/Cycle:	0.00	0.48	0.48	0.48	0.48	0.00	0.40	0.40	0.40	0.40	0.00	0.40
Volume/Cap:	0.00	0.44	0.44	0.30	0.30	0.00	0.66	0.65	0.65	0.43	0.00	0.43
Uniform Del:	0.0	10.2	10.2	9.4	9.4	0.0	14.7	14.6	14.6	13.0	0.0	13.0
IncremntDel:	0.0	1.0	1.0	0.6	0.6	0.0	7.8	6.0	6.0	3.5	0.0	3.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	11.2	11.2	10.0	10.0	0.0	22.5	20.5	20.5	16.5	0.0	16.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.2	11.2	10.0	10.0	0.0	22.5	20.5	20.5	16.5	0.0	16.5
LOS by Move:	A	B	B	A	A	A	C	C	C	B	A	B
HCM2kAvgQ:	0	4	4	2	2	0	4	5	5	3	0	3

Note: Queue reported is the number of cars per lane.

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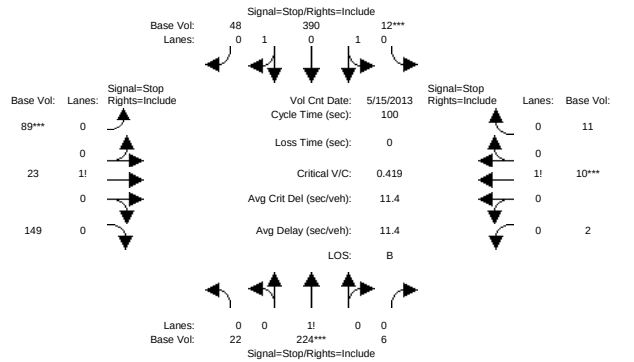
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #67: 14th St / Harrison



Street Name:	Harrison Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	22	224	6	12	390	48	89	23	149	2	10	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	224	6	12	390	48	89	23	149	2	10	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	23	231	6	12	402	49	92	24	154	2	10	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	231	6	12	402	49	92	24	154	2	10	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	231	6	12	402	49	92	24	154	2	10	11
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.89	0.02	0.05	1.74	0.21	0.34	0.09	0.57	0.09	0.43	0.48
Final Sat.:	57	576	15	33	1099	138	219	57	366	48	238	262
Capacity Analysis Module:												
Vol/Sat:	0.40	0.40	0.40	0.37	0.37	0.36	0.42	0.42	0.42	0.04	0.04	0.04
Crit Moves:		****			****			****			****	
Delay/Veh:	11.7	11.7	11.7	11.4	11.3	11.0	11.7	11.7	11.7	9.0	9.0	9.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.7	11.7	11.7	11.4	11.3	11.0	11.7	11.7	11.7	9.0	9.0	9.0
LOS by Move:	B	B	B	B	B	B	B	B	B	A	A	A
ApproachDel:		11.7			11.2			11.7			9.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.7			11.2			11.7			9.0	
LOS by Appr:		B			B			B			A	
AllWayAvgQ:	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

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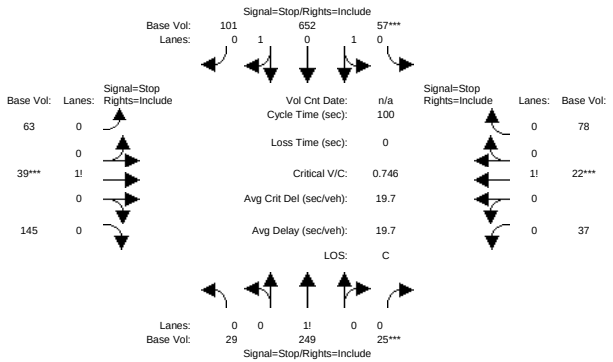
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #67: 14th St / Harrison



Street Name:	Harrison Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	29	249	25	57	652	101	63	39	145	37	22	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	249	25	57	652	101	63	39	145	37	22	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	30	259	26	59	679	105	66	41	151	39	23	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	259	26	59	679	105	66	41	151	39	23	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	259	26	59	679	105	66	41	151	39	23	81
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.10	0.82	0.08	0.14	1.61	0.25	0.25	0.16	0.59	0.27	0.16	0.57
Final Sat.:	53	456	46	80	927	147	136	84	312	132	78	277
Capacity Analysis Module:												
Vol/Sat:	0.57	0.57	0.57	0.75	0.73	0.72	0.48	0.48	0.29	0.29	0.29	
Crit Moves:			****	****				****			****	
Delay/Veh:	16.6	16.6	16.6	25.0	23.8	22.5	14.7	14.7	14.7	12.2	12.2	12.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.6	16.6	16.6	25.0	23.8	22.5	14.7	14.7	14.7	12.2	12.2	12.2
LOS by Move:	C	C	C	D	C	C	B	B	B	B	B	B
ApproachDel:		16.6			23.7			14.7			12.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		16.6			23.7			14.7			12.2	
LOS by Appr:		C			C			B			B	
AllWayAvgQ:	1.1	1.1	1.1	2.5	2.2	2.2	0.8	0.8	0.8	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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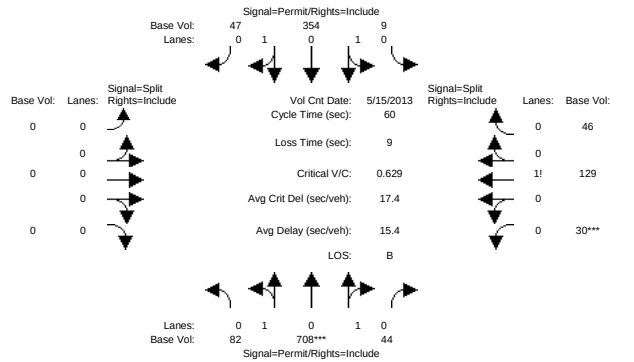
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #68: 15th St / S Van Ness



Street Name:	S Van Ness									15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Min. Green:	0	29	29	29	29	0	22	0	22	22	0	22			
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.5	4.5	4.0	4.5			
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am															
Base Vol:	82	708	44	9	354	47	0	0	0	30	129	46			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	82	708	44	9	354	47	0	0	0	30	129	46			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PHF Volume:	89	770	48	10	385	51	0	0	0	33	140	50			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	89	770	48	10	385	51	0	0	0	33	140	50			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	89	770	48	10	385	51	0	0	0	33	140	50			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.64	0.65	0.64	0.70	0.70	0.69	1.00	1.00	1.00	0.71	0.71	0.70			
Lanes:	0.20	1.70	0.10	0.04	1.73	0.23	0.00	0.00	0.00	0.14	0.63	0.23			
Final Sat.:	241	2084	130	58	2285	303	0	0	0	197	846	302			
Capacity Analysis Module:															
Vol/Sat:	0.37	0.37	0.37	0.17	0.17	0.17	0.00	0.00	0.00	0.17	0.17	0.17			
Crit Moves:		****								****					
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.00	0.00	0.00	0.37	0.37	0.37			
Volume/Cap:	0.76	0.76	0.76	0.35	0.35	0.35	0.00	0.00	0.00	0.45	0.45	0.45			
Uniform Del:	12.7	12.7	12.7	9.6	9.6	9.6	0.0	0.0	0.0	14.4	14.4	14.4			
IncremntDel:	4.7	4.7	4.7	0.8	0.8	0.8	0.0	0.0	0.0	3.0	3.0	3.0			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00			
Delay/Veh:	17.4	17.4	17.4	10.4	10.4	10.4	0.0	0.0	0.0	17.4	17.4	17.4			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	17.4	17.4	17.4	10.4	10.4	10.4	0.0	0.0	0.0	17.4	17.4	17.4			
LOS by Move:	B	B	B	B	B	B	A	A	A	B	B	B			
HCM2kAvgQ:	8	8	8	3	3	3	0	0	0	3	3	3			

Note: Queue reported is the number of cars per lane.

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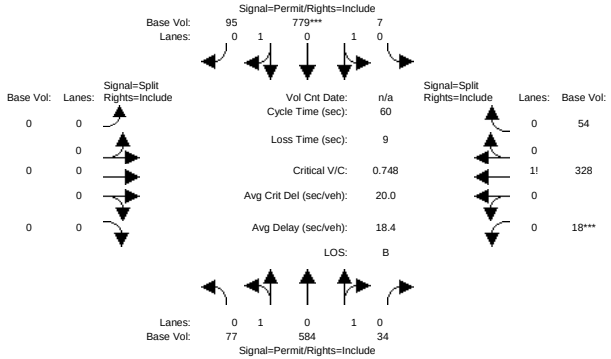
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #68: 15th St / S Van Ness



Street Name:	S Van Ness									15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Min. Green:	0	29	29	29	29	0	22	0	22	22	0	22			
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.5	4.5	4.0	4.5			
Volume Module:															
Base Vol:	77	584	34	7	779	95	0	0	0	18	328	54			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	77	584	34	7	779	95	0	0	0	18	328	54			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
PHF Volume:	79	602	35	7	803	98	0	0	0	19	338	56			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	79	602	35	7	803	98	0	0	0	19	338	56			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	79	602	35	7	803	98	0	0	0	19	338	56			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.57	0.57	0.57	0.71	0.71	0.70	1.00	1.00	1.00	0.73	0.73	0.72			
Lanes:	0.22	1.68	0.10	0.01	1.77	0.22	0.00	0.00	0.00	0.04	0.82	0.14			
Final Sat.:	242	1835	107	21	2380	290	0	0	0	62	1133	186			
Capacity Analysis Module:															
Vol/Sat:	0.33	0.33	0.33	0.34	0.34	0.34	0.00	0.00	0.00	0.30	0.30	0.30			
Crit Moves:					****					****					
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.00	0.00	0.00	0.37	0.37	0.37			
Volume/Cap:	0.68	0.68	0.68	0.70	0.70	0.70	0.00	0.00	0.00	0.81	0.81	0.81			
Uniform Del:	11.9	11.9	11.9	12.1	12.1	12.1	0.0	0.0	0.0	17.2	17.2	17.2			
IncremntDel:	3.5	3.5	3.5	3.1	3.1	3.1	0.0	0.0	0.0	13.4	13.4	13.4			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00			
Delay/Veh:	15.4	15.4	15.4	15.2	15.2	15.2	0.0	0.0	0.0	30.6	30.6	30.6			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	15.4	15.4	15.4	15.2	15.2	15.2	0.0	0.0	0.0	30.6	30.6	30.6			
LOS by Move:	B	B	B	B	B	B	A	A	A	C	C	C			
HCM2kAvgQ:	6	6	6	7	7	7	0	0	0	8	8	8			

Note: Queue reported is the number of cars per lane.

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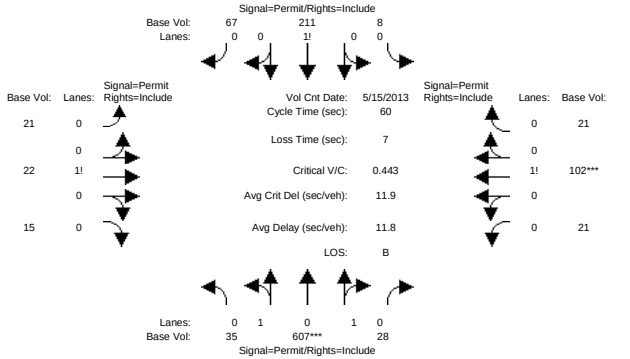
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #69: 15th St / Folsom



Street Name: Folsom Street 15th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	22	22	22	22	22	22
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	35	607	28	8	211	67	21	22	15	21	102	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	607	28	8	211	67	21	22	15	21	102	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	38	660	30	9	229	73	23	24	16	23	111	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	660	30	9	229	73	23	24	16	23	111	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	660	30	9	229	73	23	24	16	23	111	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.70	0.71	0.71	0.70	0.64	0.65	0.63	0.70	0.71	0.70
Lanes:	0.10	1.82	0.08	0.03	0.73	0.24	0.36	0.38	0.26	0.15	0.70	0.15
Final Sat.:	139	2409	111	38	990	314	441	462	315	195	946	195
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.23	0.23	0.23	0.05	0.05	0.05	0.12	0.12	0.12
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.37	0.37	0.37	0.37	0.37	0.37
Volume/Cap:	0.53	0.53	0.53	0.45	0.45	0.45	0.14	0.14	0.14	0.32	0.32	0.32
Uniform Del:	9.7	9.7	9.7	9.1	9.1	9.1	12.7	12.7	12.7	13.6	13.6	13.6
IncremntDel:	1.5	1.5	1.5	2.1	2.1	2.1	0.7	0.7	0.7	1.7	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.1	11.1	11.1	11.2	11.2	11.2	13.4	13.4	13.4	15.3	15.3	15.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.1	11.1	11.1	11.2	11.2	11.2	13.4	13.4	13.4	15.3	15.3	15.3
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	4	4	4	1	1	1	2	2	2

Note: Queue reported is the number of cars per lane.

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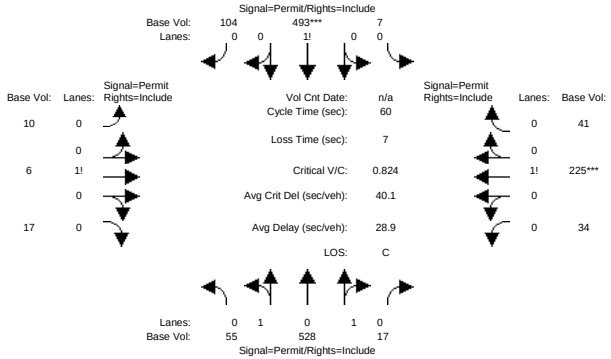
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #69: 15th St / Folsom



Street Name: Folsom Street 15th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	29	29	29	29	29	29	24	24	24	24	24	24
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	55	528	17	7	493	104	10	6	17	34	225	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	528	17	7	493	104	10	6	17	34	225	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	60	580	19	8	542	114	11	7	19	37	247	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	580	19	8	542	114	11	7	19	37	247	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	580	19	8	542	114	11	7	19	37	247	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.65	0.73	0.73	0.71	0.62	0.63	0.59	0.70	0.71	0.70
Lanes:	0.18	1.76	0.06	0.01	0.81	0.18	0.29	0.17	0.54	0.11	0.75	0.14
Final Sat.:	226	2165	70	16	1121	236	348	209	592	153	1010	184
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.48	0.48	0.48	0.03	0.03	0.03	0.24	0.24	0.24
Crit Moves:					****						****	
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.40	0.40	0.40	0.40	0.40	0.40
Volume/Cap:	0.55	0.55	0.55	1.00	1.00	1.00	0.08	0.08	0.08	0.61	0.61	0.61
Uniform Del:	10.9	10.9	10.9	15.5	15.5	15.5	11.2	11.2	11.2	14.3	14.3	14.3
IncremntDel:	1.9	1.9	1.9	34.9	34.9	34.9	0.3	0.3	0.3	5.1	5.1	5.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.8	12.8	12.8	50.4	50.4	50.4	11.5	11.5	11.5	19.4	19.4	19.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.8	12.8	12.8	50.4	50.4	50.4	11.5	11.5	11.5	19.4	19.4	19.4
LOS by Move:	B	B	B	D	D	D	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	20	20	20	0	0	0	6	6	6

Note: Queue reported is the number of cars per lane.

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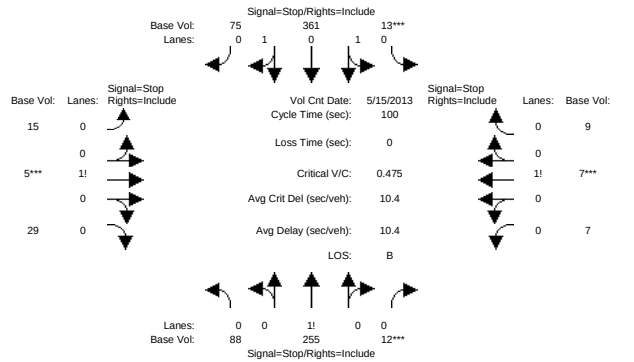
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing AM

Intersection #70: 15th St / Harrison



Street Name:	Harrison Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	88	255	12	13	361	75	15	5	29	7	7	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	255	12	13	361	75	15	5	29	7	7	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	90	260	12	13	368	77	15	5	30	7	7	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	260	12	13	368	77	15	5	30	7	7	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	260	12	13	368	77	15	5	30	7	7	9
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.25	0.72	0.03	0.06	1.61	0.33	0.31	0.10	0.59	0.30	0.30	0.40
Final Sat.:	189	548	26	41	1172	251	188	63	363	179	179	231
Capacity Analysis Module:												
Vol/Sat:	0.48	0.48	0.48	0.32	0.31	0.30	0.08	0.08	0.08	0.04	0.04	0.04
Crit Moves:			****	****				****			****	
Delay/Veh:	11.7	11.7	11.7	10.0	9.8	9.5	8.7	8.7	8.7	8.7	8.7	8.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.7	11.7	11.7	10.0	9.8	9.5	8.7	8.7	8.7	8.7	8.7	8.7
LOS by Move:	B	B	B	A	A	A	A	A	A	A	A	A
ApproachDel:		11.7			9.7			8.7			8.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.7			9.7			8.7			8.7	
LOS by Appr:		B			A			A			A	
AllWayAvgQ:	0.9	0.9	0.9	0.5	0.4	0.4	0.1	0.1	0.1	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

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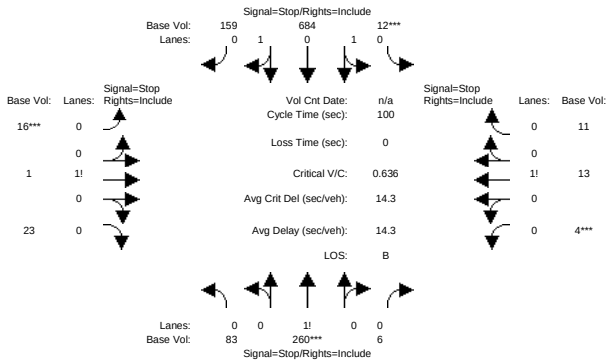
Level Of Service Computation Report
2000 HCM 4-Way Stop (Base Volume Alternative)
Existing PM

Intersection #70: 15th St / Harrison



Street Name:	Harrison Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	83	260	6	12	684	159	16	1	23	4	13	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	260	6	12	684	159	16	1	23	4	13	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	88	277	6	13	728	169	17	1	24	4	14	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	277	6	13	728	169	17	1	24	4	14	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	277	6	13	728	169	17	1	24	4	14	12
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.24	0.74	0.02	0.03	1.60	0.37	0.40	0.03	0.57	0.14	0.47	0.39
Final Sat.:	171	535	12	20	1169	281	225	14	323	79	256	216
Capacity Analysis Module:												
Vol/Sat:	0.52	0.52	0.52	0.64	0.62	0.60	0.08	0.08	0.08	0.05	0.05	0.05
Crit Moves:		****			****			****			****	
Delay/Veh:	13.1	13.1	13.1	16.0	15.3	14.3	9.4	9.4	9.4	9.3	9.3	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	13.1	13.1	16.0	15.3	14.3	9.4	9.4	9.4	9.3	9.3	9.3
LOS by Move:	B	B	B	C	C	B	A	A	A	A	A	A
ApproachDel:		13.1			15.2			9.4			9.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		13.1			15.2			9.4			9.3	
LOS by Appr:		B			C			A			A	
AllWayAvgQ:	1.0	1.0	1.0	1.6	1.4	1.4	0.1	0.1	0.1	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

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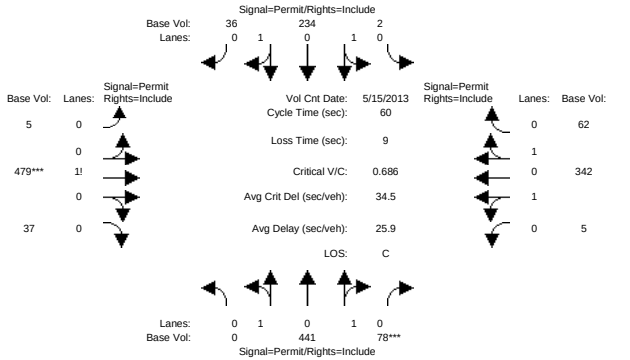
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	28	0	28	28	0	28	0	24	0	0	24	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	441	78	2	234	36	5	479	37	5	342	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	441	78	2	234	36	5	479	37	5	342	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	455	80	2	241	37	5	494	38	5	353	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	455	80	2	241	37	5	494	38	5	353	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	455	80	2	241	37	5	494	38	5	353	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.74	0.72	0.70	0.70	0.68	0.72	0.72	0.71	0.70	0.70	0.69
Lanes:	0.00	1.69	0.31	0.01	1.72	0.27	0.01	0.92	0.07	0.02	1.67	0.31
Final Sat.:	0	2367	419	20	2286	352	13	1258	97	32	2213	401
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.19	0.11	0.11	0.11	0.39	0.39	0.39	0.16	0.16	0.16
Crit Moves:			****					****				
Green/Cycle:	0.00	0.46	0.46	0.46	0.46	0.46	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.00	0.42	0.42	0.23	0.23	0.23	1.00	1.00	1.00	0.40	0.40	0.40
Uniform Del:	0.0	11.0	11.0	10.0	10.0	10.0	18.5	18.5	18.5	13.3	13.3	13.3
IncremntDel:	0.0	1.0	1.0	0.4	0.4	0.4	38.3	38.3	38.3	1.2	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	12.1	12.1	10.4	10.4	10.4	56.8	56.8	56.8	14.5	14.5	14.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.1	12.1	10.4	10.4	10.4	56.8	56.8	56.8	14.5	14.5	14.5
LOS by Move:	A	B	B	B	B	B	E	E	E	B	B	B
HCM2kAvgQ:	0	4	4	2	2	2	17	17	17	3	3	3

Note: Queue reported is the number of cars per lane.

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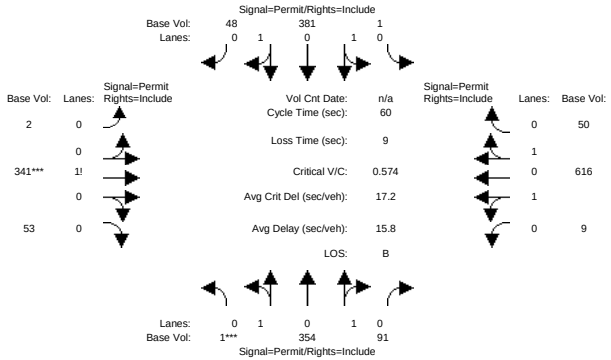
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	25	0	25	25	0	25	0	25	0	0	25	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module:												
Base Vol:	1	354	91	1	381	48	2	341	53	9	616	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	354	91	1	381	48	2	341	53	9	616	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	373	96	1	401	51	2	359	56	9	648	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	373	96	1	401	51	2	359	56	9	648	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	373	96	1	401	51	2	359	56	9	648	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.65	0.71	0.71	0.70	0.71	0.71	0.70	0.71	0.71	0.70
Lanes:	0.01	1.56	0.43	0.01	1.77	0.22	0.01	0.86	0.13	0.03	1.82	0.15
Final Sat.:	6	2071	532	6	2374	299	7	1166	181	36	2443	198
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.17	0.17	0.17	0.31	0.31	0.31	0.27	0.27	0.27
Crit Moves:	****							****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.43	0.43	0.43	0.41	0.41	0.41	0.71	0.71	0.71	0.61	0.61	0.61
Uniform Del:	12.4	12.4	12.4	12.4	12.3	12.3	13.9	13.9	13.9	13.1	13.1	13.1
IncremntDel:	1.3	1.3	1.3	1.1	1.1	1.1	7.1	7.1	7.1	2.4	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.7	13.7	13.7	13.4	13.4	13.4	21.0	21.0	21.0	15.5	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.7	13.7	13.7	13.4	13.4	13.4	21.0	21.0	21.0	15.5	15.5	15.5
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	4	4	4	3	3	3	8	8	8	5	5	5

Note: Queue reported is the number of cars per lane.

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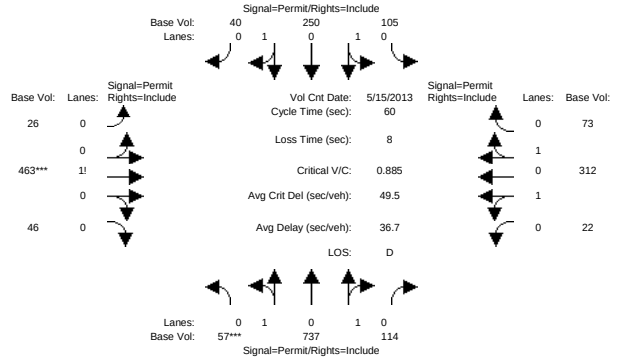
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #72: 16th St / S Van Ness



Street Name: S Van Ness 16th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	0	31	31	0	31	21	21	0	0	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	57	737	114	105	250	40	26	463	46	22	312	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	57	737	114	105	250	40	26	463	46	22	312	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	58	752	116	107	255	41	27	472	47	22	318	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	752	116	107	255	41	27	472	47	22	318	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	752	116	107	255	41	27	472	47	22	318	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.65	0.48	0.48	0.48	0.71	0.71	0.71	0.68	0.68	0.67
Lanes:	0.13	1.61	0.26	0.54	1.26	0.20	0.05	0.86	0.09	0.11	1.53	0.36
Final Sat.:	160	2065	319	486	1157	185	66	1172	116	139	1973	462
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.36	0.22	0.22	0.22	0.40	0.40	0.40	0.16	0.16	0.16
Crit Moves:	****							****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.70	0.70	0.70	0.43	0.43	0.43	1.15	1.15	1.15	0.46	0.46	0.46
Uniform Del:	11.0	11.0	11.0	9.0	9.0	9.0	19.5	19.5	19.5	15.1	15.1	15.1
IncremntDel:	3.2	3.2	3.2	1.4	1.4	1.4	90.0	90.0	90.0	1.7	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.2	14.2	14.2	10.4	10.4	10.4	109.5	109	109.5	16.8	16.8	16.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.2	14.2	14.2	10.4	10.4	10.4	109.5	109	109.5	16.8	16.8	16.8
LOS by Move:	B	B	B	B	B	B	F	F	F	B	B	B
HCM2kAvgQ:	8	8	8	3	3	3	18	18	18	3	3	3

Note: Queue reported is the number of cars per lane.

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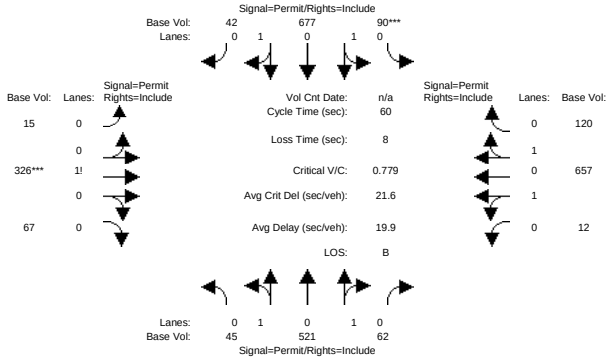
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #72: 16th St / S Van Ness



Street Name: S Van Ness 16th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	29	0	29	29	0	29	23	23	0	0	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	45	521	62	90	677	42	15	326	67	12	657	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	521	62	90	677	42	15	326	67	12	657	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	46	537	64	93	698	43	15	336	69	12	677	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	537	64	93	698	43	15	336	69	12	677	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	537	64	93	698	43	15	336	69	12	677	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	0.64	0.62	0.61	0.61	0.61	0.70	0.70	0.69	0.70	0.70	0.69
Lanes:	0.14	1.66	0.20	0.22	1.67	0.11	0.04	0.79	0.17	0.03	1.66	0.31
Final Sat.:	174	2017	240	259	1947	121	49	1062	218	41	2220	405
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.36	0.36	0.36	0.32	0.32	0.32	0.31	0.31	0.31
Crit Moves:				****				****				
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38	0.38	0.38
Volume/Cap:	0.55	0.55	0.55	0.74	0.74	0.74	0.83	0.83	0.83	0.80	0.80	0.80
Uniform Del:	10.9	10.9	10.9	12.5	12.5	12.5	16.7	16.7	16.7	16.4	16.4	16.4
IncremntDel:	1.9	1.9	1.9	4.4	4.4	4.4	14.1	14.1	14.1	6.4	6.4	6.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.8	12.8	12.8	16.9	16.9	16.9	30.8	30.8	30.8	22.8	22.8	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.8	12.8	12.8	16.9	16.9	16.9	30.8	30.8	30.8	22.8	22.8	22.8
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	5	5	5	7	7	7	8	8	8	7	7	7

Note: Queue reported is the number of cars per lane.

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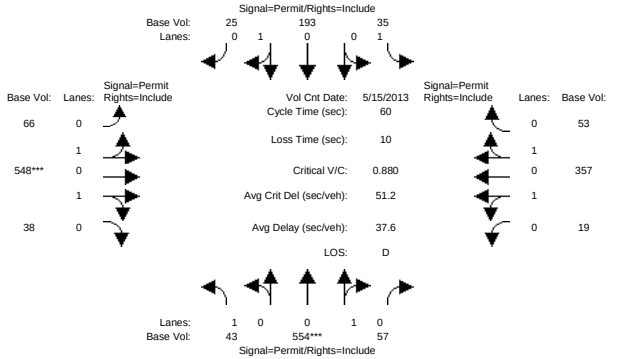
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	43	554	57	35	193	25	66	548	38	19	357	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	554	57	35	193	25	66	548	38	19	357	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	44	571	59	36	199	26	68	565	39	20	368	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	571	59	36	199	26	68	565	39	20	368	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	571	59	36	199	26	68	565	39	20	368	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.48	0.72	0.71	0.15	0.72	0.71	0.65	0.65	0.64	0.67	0.67	0.67
Lanes:	1.00	0.91	0.09	1.00	0.88	0.12	0.20	1.68	0.12	0.09	1.66	0.25
Final Sat.:	907	1240	128	290	1207	156	249	2071	144	113	2129	316
Capacity Analysis Module:												
Vol/Sat:	0.05	0.46	0.46	0.12	0.16	0.16	0.27	0.27	0.27	0.17	0.17	0.17
Crit Moves:		****						****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.12	1.11	1.11	0.30	0.40	0.40	0.65	0.65	0.65	0.41	0.41	0.41
Uniform Del:	10.7	17.5	17.5	11.7	12.2	12.2	14.0	14.0	14.0	12.3	12.3	12.3
IncremntDel:	0.6	69.9	69.9	6.2	2.1	2.1	3.3	3.3	3.3	1.2	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.4	87.4	87.4	17.9	14.3	14.3	17.3	17.3	17.3	13.5	13.5	13.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.4	87.4	87.4	17.9	14.3	14.3	17.3	17.3	17.3	13.5	13.5	13.5
LOS by Move:	B	F	F	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	1	24	24	0	3	3	5	5	5	3	3	3

Note: Queue reported is the number of cars per lane.

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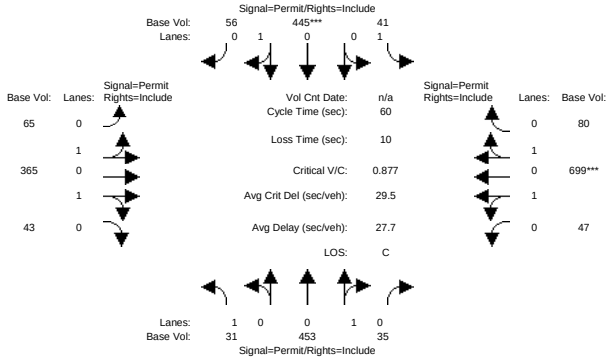
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	31	453	35	41	445	56	65	365	43	47	699	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	453	35	41	445	56	65	365	43	47	699	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	33	477	37	43	468	59	68	384	45	49	736	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	477	37	43	468	59	68	384	45	49	736	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	477	37	43	468	59	68	384	45	49	736	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.23	0.72	0.72	0.24	0.72	0.70	0.55	0.55	0.54	0.66	0.67	0.66
Lanes:	1.00	0.93	0.07	1.00	0.89	0.11	0.28	1.54	0.18	0.11	1.69	0.20
Final Sat.:	434	1275	98	460	1210	152	286	1605	189	144	2140	245
Capacity Analysis Module:												
Vol/Sat:	0.08	0.37	0.37	0.09	0.39	0.39	0.24	0.24	0.24	0.34	0.34	0.34
Crit Moves:					****						****	
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.18	0.90	0.90	0.23	0.93	0.93	0.57	0.57	0.57	0.83	0.83	0.83
Uniform Del:	11.0	16.3	16.3	11.3	16.7	16.7	13.4	13.4	13.4	15.6	15.6	15.6
IncremntDel:	2.2	19.4	19.4	2.7	23.8	23.8	2.8	2.8	2.8	7.4	7.4	7.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.2	35.7	35.7	14.0	40.5	40.5	16.2	16.2	16.2	22.9	22.9	22.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.2	35.7	35.7	14.0	40.5	40.5	16.2	16.2	16.2	22.9	22.9	22.9
LOS by Move:	B	D	D	B	D	D	B	B	B	C	C	C
HCM2kAvgQ:	1	13	13	0	9	9	4	4	4	8	8	8

Note: Queue reported is the number of cars per lane.

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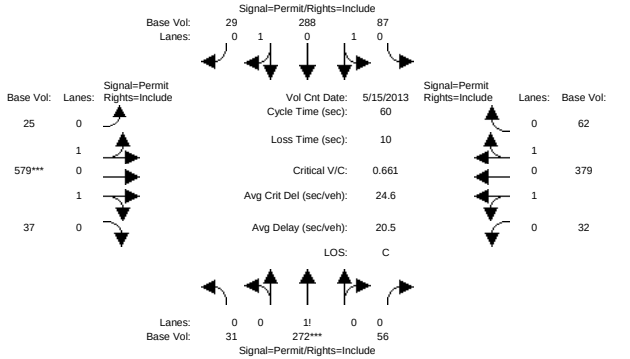
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #74: 16th St / Harrison



Street Name:	Harrison Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	19	19	19	0	19	31	31	0	0	31	31
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	31	272	56	87	288	29	25	579	37	32	379	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	272	56	87	288	29	25	579	37	32	379	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	33	286	59	92	303	31	26	609	39	34	399	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	286	59	92	303	31	26	609	39	34	399	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	286	59	92	303	31	26	609	39	34	399	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.65	0.53	0.54	0.53	0.69	0.69	0.69	0.65	0.65	0.65
Lanes:	0.09	0.75	0.16	0.44	1.42	0.14	0.08	1.81	0.11	0.13	1.61	0.26
Final Sat.:	111	975	201	441	1459	147	102	2366	151	168	1988	325
Capacity Analysis Module:												
Vol/Sat:	0.29	0.29	0.29	0.21	0.21	0.21	0.26	0.26	0.26	0.20	0.20	0.20
Crit Moves:		****						****				
Green/Cycle:	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.93	0.93	0.93	0.66	0.66	0.66	0.50	0.50	0.50	0.39	0.39	0.39
Uniform Del:	19.8	19.8	19.8	17.7	17.7	17.7	9.4	9.4	9.4	8.8	8.8	8.8
IncremntDel:	29.5	29.5	29.5	5.1	5.1	5.1	1.3	1.3	1.3	0.9	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.3	49.3	49.3	22.8	22.8	22.8	10.8	10.8	10.8	9.7	9.7	9.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.3	49.3	49.3	22.8	22.8	22.8	10.8	10.8	10.8	9.7	9.7	9.7
LOS by Move:	D	D	D	C	C	C	B	B	B	A	A	A
HCM2kAvgQ:	11	11	11	5	5	5	4	4	4	3	3	3

Note: Queue reported is the number of cars per lane.

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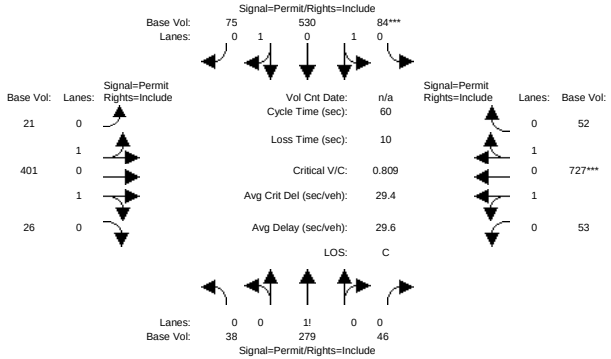
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #74: 16th St / Harrison



Street Name:	Harrison Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	20	20	20	0	20	30	30	0	0	30	30
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	38	279	46	84	530	75	21	401	26	53	727	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	279	46	84	530	75	21	401	26	53	727	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	40	297	49	89	564	80	22	427	28	56	773	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	297	49	89	564	80	22	427	28	56	773	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	297	49	89	564	80	22	427	28	56	773	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	0.64	0.62	0.59	0.60	0.57	0.67	0.67	0.67	0.67	0.67	0.66
Lanes:	0.10	0.77	0.13	0.25	1.53	0.22	0.09	1.79	0.12	0.13	1.75	0.12
Final Sat.:	127	930	153	275	1735	246	119	2279	148	161	2214	158
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.32	0.32	0.32	0.19	0.19	0.19	0.35	0.35	0.35
Crit Moves:				****							****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50
Volume/Cap:	0.96	0.96	0.96	0.97	0.97	0.97	0.37	0.37	0.37	0.70	0.70	0.70
Uniform Del:	19.6	19.6	19.6	19.8	19.8	19.8	9.2	9.2	9.2	11.5	11.5	11.5
IncremntDel:	35.3	35.3	35.3	27.2	27.2	27.2	0.8	0.8	0.8	3.2	3.2	3.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.9	54.9	54.9	47.0	47.0	47.0	10.1	10.1	10.1	14.7	14.7	14.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.9	54.9	54.9	47.0	47.0	47.0	10.1	10.1	10.1	14.7	14.7	14.7
LOS by Move:	D	D	D	D	D	D	B	B	B	B	B	B
HCM2kAvgQ:	12	12	12	13	13	12	3	3	3	7	7	7

Note: Queue reported is the number of cars per lane.

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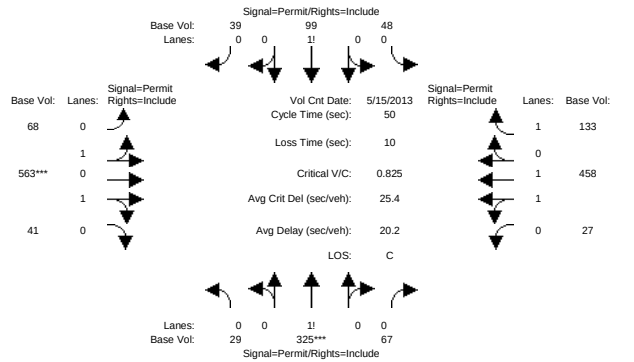
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #75: 16th St / Bryant




```
Street Name:          Bryant Street                    16th Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20    20   20   20    20   20   20    20   20   20
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am
Base Vol:     29  325   67    48   99   39    68  563   41    27  458  133
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  29  325   67    48   99   39    68  563   41    27  458  133
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:   30  335   69    49  102   40    70  580   42    28  472  137
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  30  335   69    49  102   40    70  580   42    28  472  137
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  30  335   69    49  102   40    70  580   42    28  472  137
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.63 0.64 0.62  0.54 0.55 0.54  0.60 0.61 0.61  0.73 0.73 0.44
Lanes:       0.07 0.77 0.16  0.26 0.53 0.21  0.20 1.68 0.12  0.11 1.89 1.00
Final Sat.:    83  929  192   266  549  216   234 1940  141   154 2614  844
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.36 0.36 0.36  0.19 0.19 0.19  0.30 0.30 0.30  0.18 0.18 0.16
Crit Moves:       ****                          ****
Green/Cycle: 0.40 0.40 0.40  0.40 0.40 0.40  0.40 0.40 0.40  0.40 0.40 0.40
Volume/Cap:  0.90 0.90 0.90  0.46 0.46 0.46  0.75 0.75 0.75  0.45 0.45 0.41
Uniform Del: 14.1 14.1 14.1  11.1 11.1 11.1  12.8 12.8 12.8  11.0 11.0 10.7
IncremntDel: 22.6 22.6 22.6   3.7  3.7  3.7   5.5  5.5  5.5   1.3  1.3  3.6
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   36.7 36.7 36.7  14.8 14.8 14.8  18.3 18.3 18.3  12.3 12.3 14.3
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  36.7 36.7 36.7  14.8 14.8 14.8  18.3 18.3 18.3  12.3 12.3 14.3
LOS by Move:    D    D    D     B    B    B     B    B    B     B    B    B
HCM2kAvgQ:     11   11   11     2    2    2     5    5    5     3    3    2
Note: Queue reported is the number of cars per lane.
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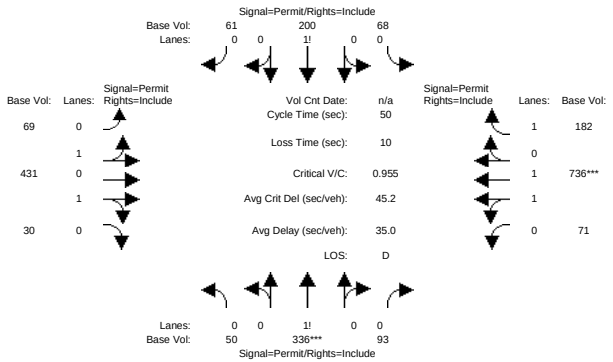
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #75: 16th St / Bryant




```
Street Name:          Bryant Street                    16th Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20    20   20   20    20   20   20    20   20   20
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     50  336   93    68  200   61    69  431   30    71  736  182
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  50  336   93    68  200   61    69  431   30    71  736  182
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:   53  354   98    72  211   64    73  454   32    75  775  192
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  53  354   98    72  211   64    73  454   32    75  775  192
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  53  354   98    72  211   64    73  454   32    75  775  192
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.60 0.61 0.59  0.54 0.54 0.52  0.53 0.53 0.53  0.69 0.69 0.43
Lanes:       0.10 0.70 0.20  0.21 0.60 0.19  0.26 1.63 0.11  0.18 1.82 1.00
Final Sat.:   119  802  222   212  623  190   262 1636  114   232 2400  812
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.44 0.44 0.44  0.34 0.34 0.34  0.28 0.28 0.28  0.32 0.32 0.24
Crit Moves:       ****                          ****
Green/Cycle: 0.40 0.40 0.40  0.40 0.40 0.40  0.40 0.40 0.40  0.40 0.40 0.40
Volume/Cap:  1.10 1.10 1.10  0.85 0.85 0.85  0.69 0.69 0.69  0.81 0.81 0.59
Uniform Del: 15.0 15.0 15.0  13.6 13.6 13.6  12.5 12.5 12.5  13.3 13.3 11.8
IncremntDel: 72.8 72.8 72.8  18.9 18.9 18.9   4.9  4.9  4.9   6.6  6.6  7.6
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   87.8 87.8 87.8  32.5 32.5 32.5  17.3 17.3 17.3  19.9 19.9 19.4
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  87.8 87.8 87.8  32.5 32.5 32.5  17.3 17.3 17.3  19.9 19.9 19.4
LOS by Move:    F    F    F     C    C    C     B    B    B     B    B    B
HCM2kAvgQ:     18   18   18     6    6    6     4    4    4     9    9    3
Note: Queue reported is the number of cars per lane.
```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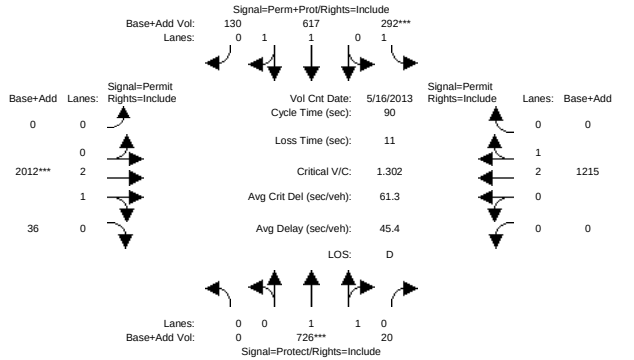
Existing Plus LRDP

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #1: Stanyan / Oak-Fell / Kezar



Street Name:	Stanyan Street						Kezar / Oak / Fell					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	21	0	21	8	33	33	0	46	46	46	46	0
Y+R:	12.0	4.0	12.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	4.0
Volume Module: >> Count Date: 16 May 2013 <<												
Base Vol:	0	724	16	292	616	129	0	2004	36	0	1208	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	724	16	292	616	129	0	2004	36	0	1208	0
Added Vol:	0	2	4	0	1	1	0	8	0	0	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	726	20	292	617	130	0	2012	36	0	1215	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	0	733	20	295	623	131	0	2032	36	0	1227	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	733	20	295	623	131	0	2032	36	0	1227	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	733	20	295	623	131	0	2032	36	0	1227	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.75	0.39	0.79	0.78	1.00	0.77	0.77	1.00	0.78	0.91
Lanes:	0.00	1.95	0.05	1.00	1.65	0.35	0.00	2.95	0.05	0.00	3.00	0.00
Final Sat.:	0	2770	76	743	2474	521	0	4333	78	0	4424	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.26	0.40	0.25	0.25	0.00	0.47	0.47	0.00	0.28	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.21	0.21	0.44	0.37	0.37	0.00	0.51	0.51	0.00	0.51	0.00
Volume/Cap:	0.00	1.25	1.25	0.77	0.69	0.69	0.00	0.92	0.92	0.00	0.54	0.00
Uniform Del:	0.0	35.4	35.4	32.2	24.1	24.1	0.0	20.3	20.3	0.0	14.9	0.0
IncremntDel:	0.0	124	124.1	13.8	3.5	3.5	0.0	7.4	7.4	0.0	0.9	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Delay/Veh:	0.0	160	159.5	46.1	27.6	27.6	0.0	27.7	27.7	0.0	15.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	160	159.5	46.1	27.6	27.6	0.0	27.7	27.7	0.0	15.8	0.0
LOS by Move:	A	F	F	D	C	C	A	C	C	A	B	A
HCM2kAvgQ:	0	20	20	9	10	10	0	24	24	0	9	0

Note: Queue reported is the number of cars per lane.

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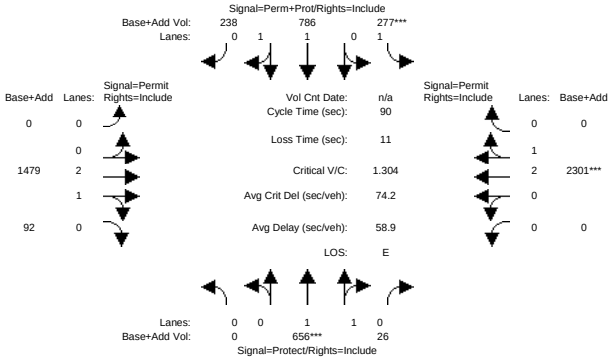
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #1: Stanyan / Oak-Fell / Kezar



Street Name:	Stanyan Street						Kezar / Oak / Fell					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	19	0	19	8	31	31	0	48	48	48	48	0
Y+R:	12.0	4.0	12.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	4.0
Volume Module:												
Base Vol:	0	652	23	277	783	237	0	1472	92	0	2295	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	652	23	277	783	237	0	1472	92	0	2295	0
Added Vol:	0	4	3	0	3	1	0	7	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	656	26	277	786	238	0	1479	92	0	2301	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	691	27	292	827	251	0	1557	97	0	2422	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	691	27	292	827	251	0	1557	97	0	2422	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	691	27	292	827	251	0	1557	97	0	2422	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.75	0.41	0.78	0.77	1.00	0.77	0.77	1.00	0.78	0.91
Lanes:	0.00	1.92	0.08	1.00	1.53	0.47	0.00	2.82	0.18	0.00	3.00	0.00
Final Sat.:	0	2732	108	777	2275	689	0	4127	257	0	4424	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.25	0.38	0.36	0.36	0.00	0.38	0.38	0.00	0.55	0.00
Crit Moves:		****		****							****	
Green/Cycle:	0.00	0.20	0.20	0.42	0.34	0.34	0.00	0.53	0.53	0.00	0.53	0.00
Volume/Cap:	0.00	1.29	1.29	0.78	1.06	1.06	0.00	0.71	0.71	0.00	1.03	0.00
Uniform Del:	0.0	36.2	36.2	32.8	29.5	29.5	0.0	15.7	15.7	0.0	21.0	0.0
IncremntDel:	0.0	142	141.5	14.8	44.1	44.1	0.0	1.8	1.8	0.0	25.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Delay/Veh:	0.0	178	177.7	47.5	73.6	73.6	0.0	17.6	17.6	0.0	46.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	178	177.7	47.5	73.6	73.6	0.0	17.6	17.6	0.0	46.7	0.0
LOS by Move:	A	F	F	D	E	E	A	B	B	A	D	A
HCM2kAvgQ:	0	21	21	9	25	25	0	14	14	0	34	0

Note: Queue reported is the number of cars per lane.

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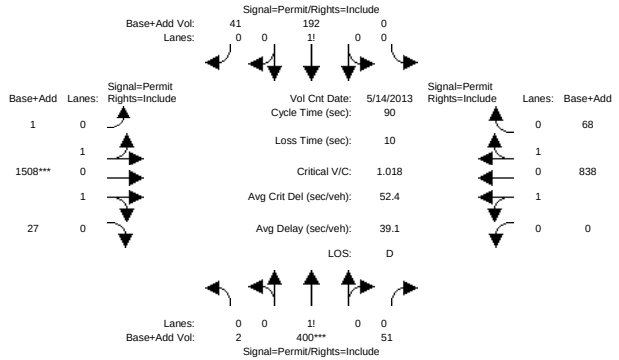
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #2: 9th Ave / Lincoln



Street Name:	9th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	26	26	26	26	26	26	54	54	54	54	54	54
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 14 May 2013 <<												
Base Vol:	2	399	51	0	191	41	1	1506	27	0	835	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	399	51	0	191	41	1	1506	27	0	835	68
Added Vol:	0	1	0	0	1	0	0	2	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	400	51	0	192	41	1	1508	27	0	838	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	2	404	52	0	194	41	1	1523	27	0	846	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	404	52	0	194	41	1	1523	27	0	846	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	404	52	0	194	41	1	1523	27	0	846	69
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.72	0.72	1.00	0.82	0.81	0.72	0.72	0.72	0.95	0.74	0.74
Lanes:	0.01	0.88	0.11	0.00	0.82	0.18	0.01	1.96	0.03	0.00	1.85	0.15
Final Sat.:	6	1207	154	0	1275	272	2	2671	48	0	2613	212
Capacity Analysis Module:												
Vol/Sat:	0.33	0.33	0.33	0.00	0.15	0.15	0.57	0.57	0.57	0.00	0.32	0.32
Crit Moves:		****						****				
Green/Cycle:	0.29	0.29	0.29	0.00	0.29	0.29	0.60	0.60	0.60	0.00	0.60	0.60
Volume/Cap:	1.16	1.16	1.16	0.00	0.53	0.53	0.95	0.95	0.95	0.00	0.54	0.54
Uniform Del:	32.0	32.0	32.0	0.0	26.8	26.8	16.8	16.8	16.8	0.0	10.6	10.6
IncremntDel:	96.3	96.3	96.3	0.0	4.4	4.4	13.3	13.3	13.3	0.0	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	128.3	128	128.3	0.0	31.2	31.2	30.0	30.0	30.0	0.0	11.9	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	128.3	128	128.3	0.0	31.2	31.2	30.0	30.0	30.0	0.0	11.9	11.9
LOS by Move:	F	F	F	A	C	C	C	C	C	A	B	B
HCM2kAvgQ:	22	22	22	0	6	6	27	27	27	0	8	8

Note: Queue reported is the number of cars per lane.

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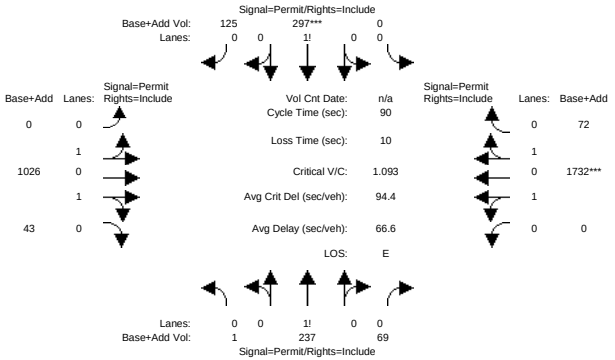
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #2: 9th Ave / Lincoln



Street Name:	9th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	28	28	28	28	28	28	52	52	52	52	52	52
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	1	235	69	0	294	125	0	1021	43	0	1723	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	235	69	0	294	125	0	1021	43	0	1723	72
Added Vol:	0	2	0	0	3	0	0	5	0	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	237	69	0	297	125	0	1026	43	0	1732	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	1	252	73	0	316	133	0	1091	46	0	1843	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	252	73	0	316	133	0	1091	46	0	1843	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	252	73	0	316	133	0	1091	46	0	1843	77
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.70	1.00	0.80	0.79	0.95	0.75	0.75	0.95	0.75	0.75
Lanes:	0.01	0.77	0.22	0.00	0.70	0.30	0.00	1.92	0.08	0.00	1.92	0.08
Final Sat.:	4	1037	302	0	1068	450	0	2726	114	0	2727	113
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.00	0.30	0.30	0.00	0.40	0.40	0.00	0.68	0.68
Crit Moves:					****						****	
Green/Cycle:	0.31	0.31	0.31	0.00	0.31	0.31	0.00	0.58	0.58	0.00	0.58	0.58
Volume/Cap:	0.78	0.78	0.78	0.00	0.95	0.95	0.00	0.69	0.69	0.00	1.17	1.17
Uniform Del:	28.2	28.2	28.2	0.0	30.3	30.3	0.0	13.4	13.4	0.0	19.0	19.0
IncremntDel:	13.5	13.5	13.5	0.0	30.8	30.8	0.0	2.4	2.4	0.0	83.2	83.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	41.8	41.8	41.8	0.0	61.1	61.1	0.0	15.8	15.8	0.0	102	102.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.8	41.8	41.8	0.0	61.1	61.1	0.0	15.8	15.8	0.0	102	102.2
LOS by Move:	D	D	D	A	E	E	A	B	B	A	F	F
HCM2kAvgQ:	9	9	9	0	17	17	0	13	13	0	47	47

Note: Queue reported is the number of cars per lane.

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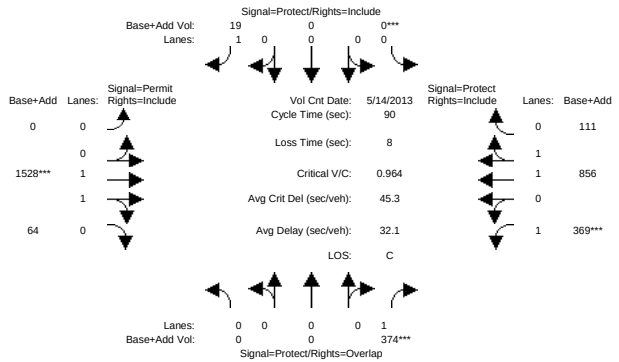
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #3: 7th Ave / Lincoln



Street Name:	7th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	29	0	0	24	52	52	52	29	58	58
Y+R:	4.0	4.0	5.0	4.0	4.0	4.0	4.5	4.5	4.5	5.0	4.5	4.5
Volume Module: >> Count Date: 14 May 2013 <<												
Base Vol:	0	0	373	0	0	19	0	1526	64	365	853	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	373	0	0	19	0	1526	64	365	853	111
Added Vol:	0	0	1	0	0	0	0	2	0	4	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	374	0	0	19	0	1528	64	369	856	111
User Adj:	1.00	1.00	0.70	1.00	1.00	1.00	1.00	0.70	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	273	0	0	20	0	1114	67	384	892	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	273	0	0	20	0	1114	67	384	892	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	273	0	0	20	0	1114	67	384	892	116
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.62	1.00	1.00	0.69	1.00	0.75	0.74	0.81	0.74	0.74
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.89	0.11	1.00	1.77	0.23
Final Sat.:	0	0	1187	0	0	1303	0	2674	160	1539	2485	322
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.23	0.00	0.00	0.02	0.00	0.42	0.42	0.25	0.36	0.36
Crit Moves:			****	****				****		****		
Green/Cycle:	0.00	0.00	0.47	0.00	0.00	0.21	0.00	0.46	0.46	0.26	0.72	0.72
Volume/Cap:	0.00	0.00	0.49	0.00	0.00	0.07	0.00	0.91	0.91	0.97	0.50	0.50
Uniform Del:	0.0	0.0	20.7	0.0	0.0	35.6	0.0	28.2	28.2	41.6	7.1	7.1
IncremntDel:	0.0	0.0	3.1	0.0	0.0	0.5	0.0	10.6	10.6	39.0	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	23.7	0.0	0.0	36.1	0.0	38.8	38.8	80.6	8.0	8.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	23.7	0.0	0.0	36.1	0.0	38.8	38.8	80.6	8.0	8.0
LOS by Move:	A	A	C	A	A	D	A	D	D	F	A	A
HCM2kAvgQ:	0	0	6	0	0	1	0	20	20	17	9	9

Note: Queue reported is the number of cars per lane.

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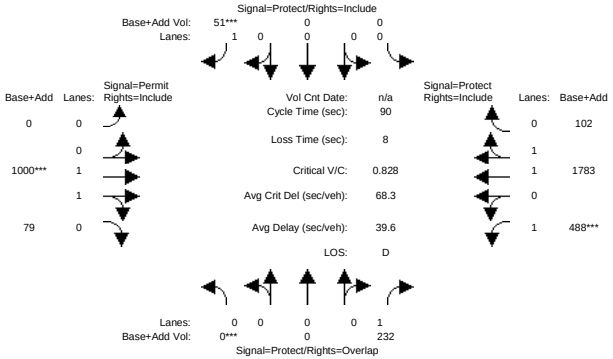
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #3: 7th Ave / Lincoln



Street Name:	7th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	38	0	0	24	43	43	43	38	58	58
Y+R:	4.0	4.0	5.0	4.0	4.0	4.0	4.5	4.5	4.5	5.0	4.5	4.5
Volume Module:												
Base Vol:	0	0	231	0	0	51	0	995	79	484	1774	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	231	0	0	51	0	995	79	484	1774	102
Added Vol:	0	0	1	0	0	0	0	5	0	4	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	232	0	0	51	0	1000	79	488	1783	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	242	0	0	53	0	1042	82	508	1486	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	242	0	0	53	0	1042	82	508	1486	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	242	0	0	53	0	1042	82	508	1486	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.63	1.00	1.00	0.68	1.00	0.74	0.74	0.81	0.74	0.74
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.85	0.15	1.00	1.87	0.13
Final Sat.:	0	0	1192	0	0	1299	0	2618	207	1539	2640	189
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.20	0.00	0.00	0.04	0.00	0.40	0.40	0.33	0.56	0.56
Crit Moves:	****					****		****		****		
Green/Cycle:	0.00	0.00	0.54	0.00	0.00	0.20	0.00	0.39	0.39	0.34	0.73	0.73
Volume/Cap:	0.00	0.00	0.38	0.00	0.00	0.20	0.00	1.02	1.02	0.98	0.78	0.78
Uniform Del:	0.0	0.0	15.0	0.0	0.0	37.3	0.0	34.5	34.5	37.2	9.8	9.8
IncremntDel:	0.0	0.0	1.7	0.0	0.0	1.7	0.0	33.2	33.2	35.3	3.0	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	16.6	0.0	0.0	39.0	0.0	67.7	67.7	72.5	12.7	12.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	16.6	0.0	0.0	39.0	0.0	67.7	67.7	72.5	12.7	12.7
LOS by Move:	A	A	B	A	A	D	A	E	E	E	B	B
HCM2kAvgQ:	0	0	5	0	0	2	0	26	26	23	21	21

Note: Queue reported is the number of cars per lane.

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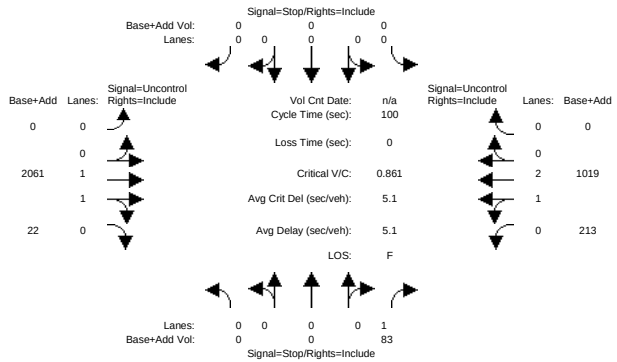
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #4: 4th Ave / Lincoln



Street Name:	4th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	79	0	0	0	2058	22	210	1012	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	79	0	0	0	2058	22	210	1012	0	
Added Vol:	0	0	4	0	0	0	3	0	3	7	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	83	0	0	0	2061	22	213	1019	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	85	0	0	0	2103	22	217	1040	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	85	0	0	0	2103	22	217	1040	0	
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	1063	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2126	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	219	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	253	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	219	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	253	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.39	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.86	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	1.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	7.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	31.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	68.5	xxxx	xxxxx
LOS by Move:	*	*	D	*	*	*	*	*	*	F	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	68.5	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	F	*	*
ApproachDel:	31.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	D			*			*			*		

Note: Queue reported is the number of cars per lane.

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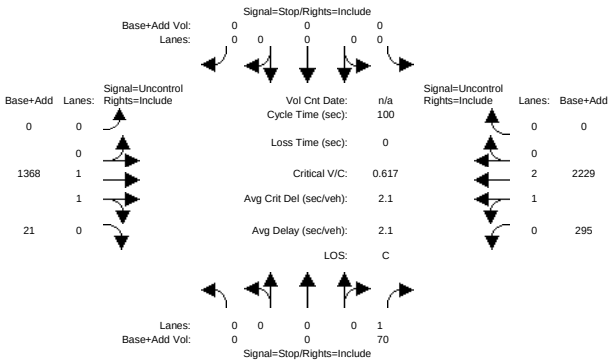
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #4: 4th Ave / Lincoln



Street Name:	4th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	66	0	0	0	1361	21	292	2217	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	66	0	0	0	1361	21	292	2217	0	
Added Vol:	0	0	4	0	0	0	7	0	3	12	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	70	0	0	0	1368	21	295	2229	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	0	0	71	0	0	0	1382	21	298	2252	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	71	0	0	0	1382	21	298	2252	0	
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	702	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1403	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	381	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	483	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	381	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	483	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.62	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	16.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	23.8	xxxx	xxxxx
LOS by Move:	*	*	C	*	*	*	*	*	*	C	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	23.8	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	C	*	*
ApproachDel:	16.6			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

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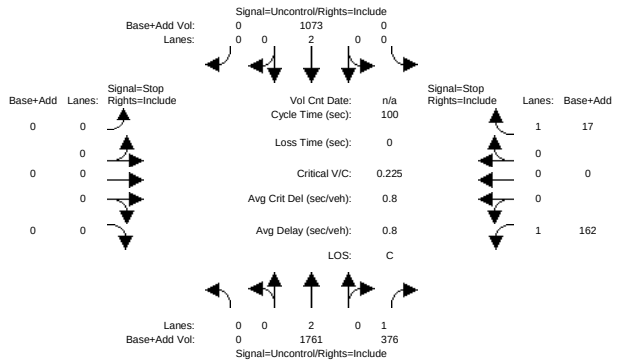
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #5: Lincoln Way-Kezar Drive-Third Avenue



Street Name:	Lincoln Way-Kezar Drive						Third Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	1761	376	0	1073	0	0	0	0	162	0	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1761	376	0	1073	0	0	0	0	162	0	17
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	6	2	0	7	0	0	0	0	3	0	3
Initial Fut:	0	1767	378	0	1080	0	0	0	0	165	0	20
User Adj:	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00	1.00	0.25	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	902	386	0	551	0	0	0	0	42	0	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	902	386	0	551	0	0	0	0	42	0	20
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1177	xxxx	451
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	187	xxxx	561
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	187	xxxx	561
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.23	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.8	xxxx	0.1
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	29.8	xxxx	11.7
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			23.9		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

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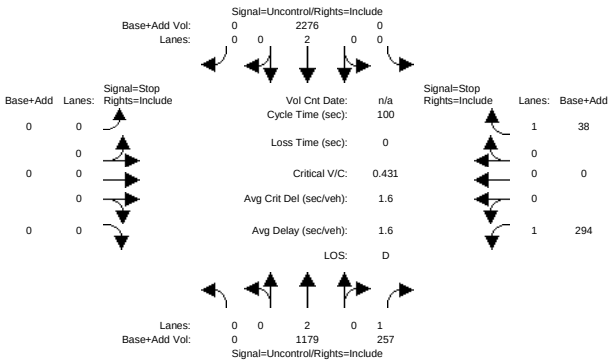
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #5: Lincoln Way-Kezar Drive-Third Avenue



Street Name:	Lincoln Way-Kezar Drive						Third Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	1179	257	0	2276	0	0	0	0	294	0	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1179	257	0	2276	0	0	0	0	294	0	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	5	5	0	7	0	0	0	0	9	0	2
Initial Fut:	0	1184	262	0	2283	0	0	0	0	303	0	40
User Adj:	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00	1.00	0.25	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	610	270	0	1177	0	0	0	0	78	0	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	610	270	0	1177	0	0	0	0	78	0	41
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1199	xxxx	305
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	181	xxxx	697
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	181	xxxx	697
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.43	xxxx	0.06
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2.0	xxxx	0.2
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	39.2	xxxx	10.5
LOS by Move:	*	*	*	*	*	*	*	*	*	E	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			29.3		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the number of cars per lane.

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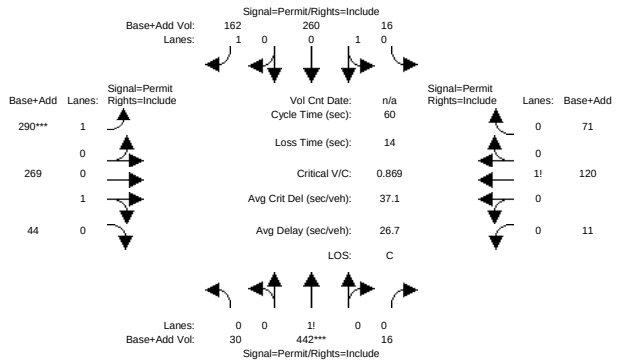
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #6: Stanyan / Frederick



Street Name: Stanyan Street Frederick Street
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green:	25	25	25	25	25	25	21	21	21	21	21	21
Y+R:	9.0	9.0	9.0	9.0	9.0	9.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	30	437	16	16	259	162	290	269	44	7	118	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	437	16	16	259	162	290	269	44	7	118	71
Added Vol:	0	5	0	0	1	0	0	0	0	4	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	442	16	16	260	162	290	269	44	11	120	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	31	456	16	16	268	167	299	277	45	11	124	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	456	16	16	268	167	299	277	45	11	124	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	456	16	16	268	167	299	277	45	11	124	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.70	0.81	0.81	0.63	0.55	0.73	0.73	0.68	0.68	0.68
Lanes:	0.06	0.91	0.03	0.06	0.94	1.00	1.00	0.86	0.14	0.05	0.60	0.35
Final Sat.:	82	1206	44	90	1456	1205	1037	1193	195	70	768	454
Capacity Analysis Module:												
Vol/Sat:	0.38	0.38	0.38	0.18	0.18	0.14	0.29	0.23	0.23	0.16	0.16	0.16
Crit Moves:		****					****					
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.91	0.91	0.91	0.44	0.44	0.33	0.82	0.66	0.66	0.46	0.46	0.46
Uniform Del:	16.4	16.4	16.4	12.5	12.5	11.9	17.8	16.5	16.5	15.1	15.1	15.1
IncremntDel:	21.0	21.0	21.0	2.2	2.2	1.8	18.7	7.0	7.0	3.3	3.3	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.4	37.4	37.4	14.7	14.7	13.6	36.5	23.5	23.5	18.5	18.5	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	37.4	37.4	14.7	14.7	13.6	36.5	23.5	23.5	18.5	18.5	18.5
LOS by Move:	D	D	D	B	B	B	D	C	C	B	B	B
HCM2kAvgQ:	11	11	11	4	4	2	8	6	6	4	4	4

Note: Queue reported is the number of cars per lane.

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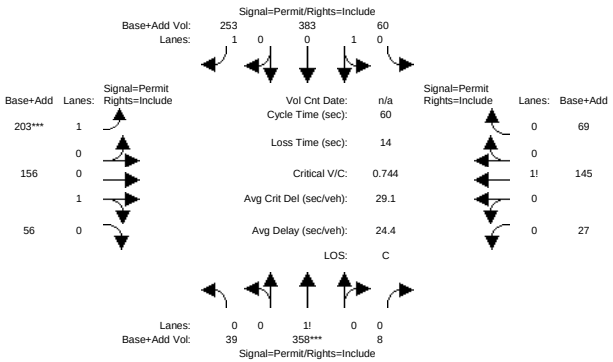
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #6: Stanyan / Frederick



Street Name: Stanyan Street Frederick Street
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green:	25	25	25	25	25	25	21	21	21	21	21	21
Y+R:	9.0	9.0	9.0	9.0	9.0	9.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	39	351	8	60	380	253	202	156	56	24	144	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	351	8	60	380	253	202	156	56	24	144	69
Added Vol:	0	7	0	0	3	0	1	0	0	3	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	358	8	60	383	253	203	156	56	27	145	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	41	381	9	64	407	269	216	166	60	29	154	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	381	9	64	407	269	216	166	60	29	154	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	381	9	64	407	269	216	166	60	29	154	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	0.64	0.64	0.75	0.75	0.60	0.52	0.72	0.70	0.66	0.67	0.65
Lanes:	0.10	0.88	0.02	0.14	0.86	1.00	1.00	0.73	0.27	0.11	0.60	0.29
Final Sat.:	118	1081	24	193	1232	1133	990	997	358	141	756	360
Capacity Analysis Module:												
Vol/Sat:	0.35	0.35	0.35	0.33	0.33	0.24	0.22	0.17	0.17	0.20	0.20	0.20
Crit Moves:		****					****					
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.85	0.85	0.85	0.79	0.79	0.57	0.62	0.48	0.48	0.58	0.58	0.58
Uniform Del:	15.8	15.8	15.8	15.3	15.3	13.4	16.2	15.2	15.2	15.9	15.9	15.9
IncremntDel:	15.8	15.8	15.8	10.5	10.5	4.9	8.2	3.4	3.4	5.6	5.6	5.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.5	31.5	31.5	25.7	25.7	18.3	24.4	18.6	18.6	21.5	21.5	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5	31.5	31.5	25.7	25.7	18.3	24.4	18.6	18.6	21.5	21.5	21.5
LOS by Move:	C	C	C	C	C	B	C	B	B	C	C	C
HCM2kAvgQ:	9	9	9	7	7	3	5	4	4	5	5	5

Note: Queue reported is the number of cars per lane.

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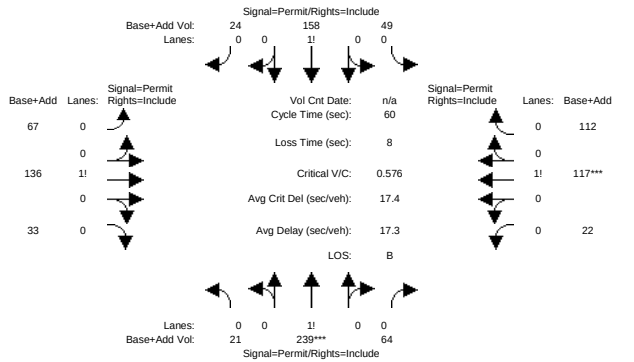
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #7: 9th Ave / Irving



Street Name:	9th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	21	238	64	48	157	24	67	129	33	22	113	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	238	64	48	157	24	67	129	33	22	113	112
Added Vol:	0	1	0	1	1	0	0	7	0	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	239	64	49	158	24	67	136	33	22	117	112
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	23	266	71	54	176	27	74	151	37	24	130	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	266	71	54	176	27	74	151	37	24	130	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	266	71	54	176	27	74	151	37	24	130	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.69	0.69	0.63	0.63	0.63	0.62	0.63	0.62	0.66	0.66	0.64
Lanes:	0.06	0.74	0.20	0.21	0.69	0.10	0.29	0.57	0.14	0.09	0.46	0.45
Final Sat.:	85	970	260	255	821	125	337	684	166	108	576	552
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.21	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.23
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.53	0.53	0.53	0.41	0.41	0.41	0.63	0.63	0.63	0.64	0.64	0.64
Uniform Del:	9.6	9.6	9.6	8.9	8.9	8.9	16.3	16.3	16.3	16.4	16.4	16.4
IncremntDel:	2.9	2.9	2.9	2.0	2.0	2.0	7.1	7.1	7.1	7.2	7.2	7.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.6	12.6	12.6	10.9	10.9	10.9	23.4	23.4	23.4	23.6	23.6	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.6	12.6	12.6	10.9	10.9	10.9	23.4	23.4	23.4	23.6	23.6	23.6
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	5	5	5	3	3	3	4	4	4	5	5	5

Note: Queue reported is the number of cars per lane.

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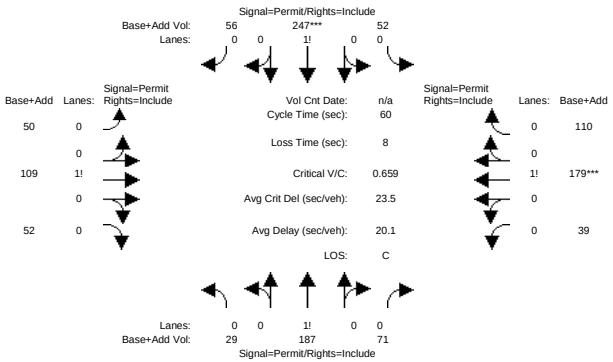
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #7: 9th Ave / Irving



Street Name:	9th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	32	32	32	32	32	32	20	20	20	20	20	20
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	29	185	71	51	245	56	50	100	52	39	173	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	185	71	51	245	56	50	100	52	39	173	110
Added Vol:	0	2	0	1	2	0	0	9	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	187	71	52	247	56	50	109	52	39	179	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	30	195	74	54	257	58	52	114	54	41	186	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	195	74	54	257	58	52	114	54	41	186	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	195	74	54	257	58	52	114	54	41	186	115
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.66	0.66	0.66	0.65	0.62	0.63	0.62	0.66	0.66	0.64
Lanes:	0.10	0.65	0.25	0.15	0.69	0.16	0.24	0.51	0.25	0.12	0.54	0.34
Final Sat.:	128	827	314	183	870	197	282	614	293	148	677	416
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.30	0.30	0.30	0.18	0.18	0.18	0.28	0.28	0.28
Crit Moves:					****						****	
Green/Cycle:	0.53	0.53	0.53	0.53	0.53	0.53	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.44	0.44	0.44	0.55	0.55	0.55	0.55	0.55	0.55	0.83	0.83	0.83
Uniform Del:	8.5	8.5	8.5	9.3	9.3	9.3	16.4	16.4	16.4	18.4	18.4	18.4
IncremntDel:	2.1	2.1	2.1	3.3	3.3	3.3	5.5	5.5	5.5	17.0	17.0	17.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.6	10.6	10.6	12.6	12.6	12.6	21.9	21.9	21.9	35.4	35.4	35.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.6	10.6	10.6	12.6	12.6	12.6	21.9	21.9	21.9	35.4	35.4	35.4
LOS by Move:	B	B	B	B	B	B	C	C	C	D	D	D
HCM2kAvgQ:	4	4	4	4	4	4	4	4	4	7	7	6

Note: Queue reported is the number of cars per lane.

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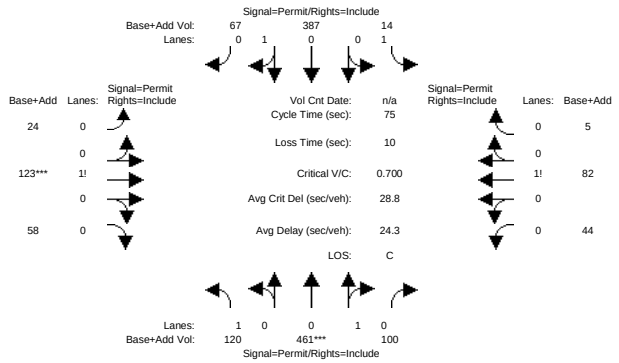
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #8: 7th Ave / Irving



Street Name:	7th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	38	38	38	38	38	38	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	120	460	92	11	386	67	24	116	58	39	78	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	460	92	11	386	67	24	116	58	39	78	5
Added Vol:	0	1	8	3	1	0	0	7	0	5	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	461	100	14	387	67	24	123	58	44	82	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	129	496	108	15	416	72	26	132	62	47	88	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	496	108	15	416	72	26	132	62	47	88	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	496	108	15	416	72	26	132	62	47	88	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.31	0.73	0.72	0.23	0.73	0.72	0.68	0.69	0.68	0.62	0.63	0.63
Lanes:	1.00	0.82	0.18	1.00	0.85	0.15	0.12	0.59	0.29	0.34	0.62	0.04
Final Sat.:	580	1132	246	433	1181	204	152	780	368	401	748	46
Capacity Analysis Module:												
Vol/Sat:	0.22	0.44	0.44	0.03	0.35	0.35	0.17	0.17	0.17	0.12	0.12	0.12
Crit Moves:		****						****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.37	0.37	0.37	0.37	0.37	0.37
Volume/Cap:	0.45	0.88	0.88	0.07	0.70	0.70	0.46	0.46	0.46	0.32	0.32	0.32
Uniform Del:	12.2	16.9	16.9	9.8	14.7	14.7	18.3	18.3	18.3	17.2	17.2	17.2
IncremntDel:	4.9	14.6	14.6	0.6	5.9	5.9	3.2	3.2	3.2	1.9	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.1	31.5	31.5	10.5	20.6	20.6	21.4	21.4	21.4	19.1	19.1	19.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	31.5	31.5	10.5	20.6	20.6	21.4	21.4	21.4	19.1	19.1	19.1
LOS by Move:	B	C	C	B	C	C	C	C	C	B	B	B
HCM2kAvgQ:	2	12	12	0	10	10	4	4	4	2	2	2

Note: Queue reported is the number of cars per lane.

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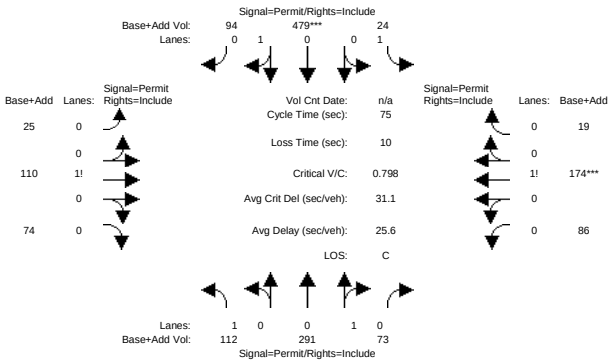
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #8: 7th Ave / Irving



Street Name:	7th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	38	38	38	38	38	38	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	112	290	69	22	478	94	25	99	74	82	168	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	112	290	69	22	478	94	25	99	74	82	168	19
Added Vol:	0	1	4	2	1	0	0	11	0	4	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	112	291	73	24	479	94	25	110	74	86	174	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	119	310	78	26	510	100	27	117	79	91	185	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	310	78	26	510	100	27	117	79	91	185	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	310	78	26	510	100	27	117	79	91	185	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.22	0.72	0.72	0.38	0.73	0.72	0.66	0.67	0.65	0.62	0.62	0.62
Lanes:	1.00	0.80	0.20	1.00	0.83	0.17	0.12	0.52	0.36	0.31	0.62	0.07
Final Sat.:	424	1097	275	719	1154	226	150	662	445	364	737	80
Capacity Analysis Module:												
Vol/Sat:	0.28	0.28	0.28	0.04	0.44	0.44	0.18	0.18	0.18	0.25	0.25	0.25
Crit Moves:					****						****	
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.37	0.37	0.37	0.37	0.37	0.37
Volume/Cap:	0.56	0.56	0.56	0.07	0.88	0.88	0.48	0.48	0.48	0.68	0.68	0.68
Uniform Del:	13.2	13.2	13.2	9.8	17.0	17.0	18.4	18.4	18.4	20.2	20.2	20.2
IncremntDel:	10.4	3.3	3.3	0.4	15.3	15.3	3.5	3.5	3.5	8.4	8.4	8.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	23.6	16.6	16.6	10.2	32.3	32.3	21.9	21.9	21.9	28.6	28.6	28.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.6	16.6	16.6	10.2	32.3	32.3	21.9	21.9	21.9	28.6	28.6	28.6
LOS by Move:	C	B	B	B	C	C	C	C	C	C	C	C
HCM2kAvgQ:	2	6	6	0	16	16	4	4	4	6	6	6

Note: Queue reported is the number of cars per lane.

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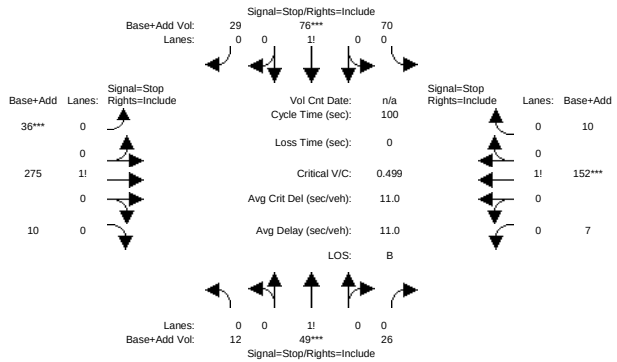
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #9: 4th Ave / Irving



Street Name:	4th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	12	46	26	67	76	29	36	257	10	7	143	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	46	26	67	76	29	36	257	10	7	143	9
Added Vol:	0	3	0	3	0	0	0	18	0	0	9	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	49	26	70	76	29	36	275	10	7	152	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	13	54	29	77	84	32	40	302	11	8	167	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	54	29	77	84	32	40	302	11	8	167	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	54	29	77	84	32	40	302	11	8	167	11
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.14	0.56	0.30	0.40	0.43	0.17	0.11	0.86	0.03	0.04	0.90	0.06
Final Sat.:	83	341	181	251	272	104	79	606	22	28	599	39
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.31	0.31	0.31	0.50	0.50	0.50	0.28	0.28	0.28
Crit Moves:		****			****		****				****	
Delay/Veh:	9.2	9.2	9.2	10.4	10.4	10.4	12.4	12.4	12.4	9.9	9.9	9.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.2	9.2	9.2	10.4	10.4	10.4	12.4	12.4	12.4	9.9	9.9	9.9
LOS by Move:	A	A	A	B	B	B	B	B	B	A	A	A
ApproachDel:		9.2			10.4			12.4			9.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.2			10.4			12.4			9.9	
LOS by Appr:		A			B			B			A	
AllWayAvgQ:	0.1	0.1	0.1	0.4	0.4	0.4	0.9	0.9	0.9	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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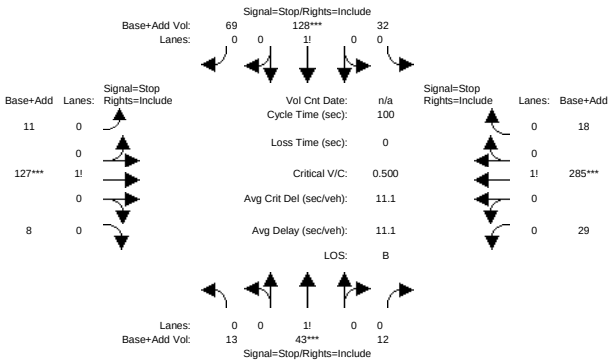
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #9: 4th Ave / Irving



Street Name:	4th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	13	40	12	29	128	69	11	110	8	29	275	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	40	12	29	128	69	11	110	8	29	275	17
Added Vol:	0	3	0	3	0	0	0	17	0	0	10	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	43	12	32	128	69	11	127	8	29	285	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	14	46	13	34	136	73	12	135	9	31	303	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	46	13	34	136	73	12	135	9	31	303	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	46	13	34	136	73	12	135	9	31	303	19
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.63	0.18	0.14	0.56	0.30	0.08	0.87	0.05	0.09	0.86	0.05
Final Sat.:	114	376	105	93	370	200	49	569	36	62	607	38
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.37	0.37	0.37	0.24	0.24	0.24	0.50	0.50	0.50
Crit Moves:		****			****			****			****	
Delay/Veh:	9.1	9.1	9.1	10.7	10.7	10.7	9.6	9.6	9.6	12.4	12.4	12.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.1	9.1	9.1	10.7	10.7	10.7	9.6	9.6	9.6	12.4	12.4	12.4
LOS by Move:	A	A	A	B	B	B	A	A	A	B	B	B
ApproachDel:		9.1			10.7			9.6			12.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.1			10.7			9.6			12.4	
LOS by Appr:		A			B			A			B	
AllWayAvgQ:	0.1	0.1	0.1	0.5	0.5	0.5	0.3	0.3	0.3	0.9	0.9	0.9

Note: Queue reported is the number of cars per lane.

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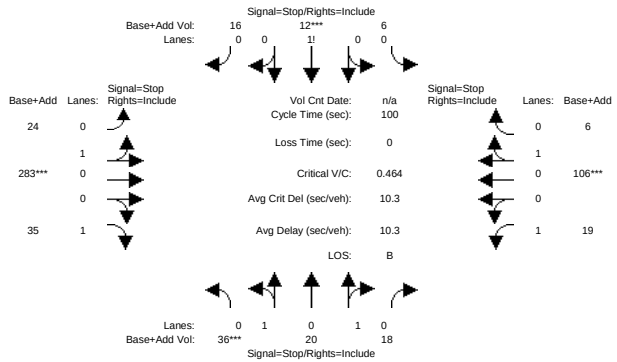
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #10: 2nd Avenue / Irving



Street Name:	2nd Avenue						Irving					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	32	16	11	6	11	16	24	271	25	17	97	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	16	11	6	11	16	24	271	25	17	97	6
Added Vol:	4	4	7	0	1	0	0	12	10	2	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	20	18	6	12	16	24	283	35	19	106	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	39	22	19	6	13	17	26	304	38	20	114	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	22	19	6	13	17	26	304	38	20	114	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	22	19	6	13	17	26	304	38	20	114	6
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.97	0.54	0.49	0.18	0.35	0.47	0.08	0.92	1.00	1.00	0.95	0.05
Final Sat.:	526	331	300	105	211	281	56	656	829	622	651	37
Capacity Analysis Module:												
Vol/Sat:	0.07	0.06	0.06	0.06	0.06	0.06	0.46	0.46	0.05	0.03	0.17	0.17
Crit Moves:	****				****			****			****	
Delay/Veh:	9.4	8.5	8.4	8.9	8.9	8.9	11.8	11.8	7.2	8.5	8.9	8.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.4	8.5	8.4	8.9	8.9	8.9	11.8	11.8	7.2	8.5	8.9	8.9
LOS by Move:	A	A	A	A	A	A	B	B	A	A	A	A
ApproachDel:	8.9			8.9			11.4			8.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.9			8.9			11.4			8.8		
LOS by Appr:	A			A			B			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.8	0.8	0.0	0.0	0.2	0.2

Note: Queue reported is the number of cars per lane.

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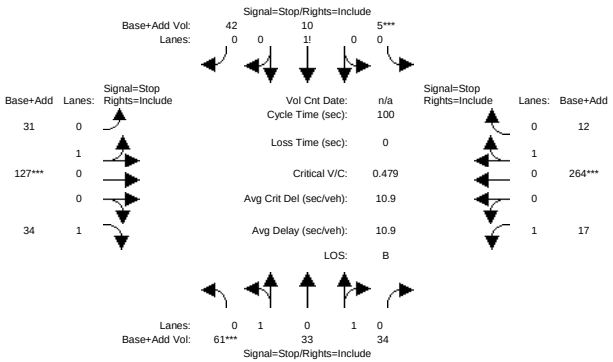
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #10: 2nd Avenue / Irving



Street Name:	2nd Avenue						Irving					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	58	26	30	5	7	42	31	117	24	16	256	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	26	30	5	7	42	31	117	24	16	256	12
Added Vol:	3	7	4	0	3	0	0	10	10	1	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	33	34	5	10	42	31	127	34	17	264	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	70	38	39	6	11	48	36	146	39	20	303	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	38	39	6	11	48	36	146	39	20	303	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	38	39	6	11	48	36	146	39	20	303	14
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.52	0.53	0.09	0.17	0.74	0.20	0.80	1.00	1.00	0.96	0.04
Final Sat.:	498	304	316	51	101	424	123	505	726	600	633	29
Capacity Analysis Module:												
Vol/Sat:	0.14	0.12	0.12	0.11	0.11	0.11	0.29	0.29	0.05	0.03	0.48	0.48
Crit Moves:	****			****				****			****	
Delay/Veh:	10.1	9.1	9.0	9.4	9.4	9.4	10.4	10.4	7.7	8.7	12.6	12.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.1	9.1	9.0	9.4	9.4	9.4	10.4	10.4	7.7	8.7	12.6	12.6
LOS by Move:	B	A	A	A	A	A	B	B	A	A	B	B
ApproachDel:	9.6			9.4			9.9			12.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	9.6			9.4			9.9			12.4		
LOS by Appr:	A			A			A			B		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.4	0.1	0.0	0.8	0.8

Note: Queue reported is the number of cars per lane.

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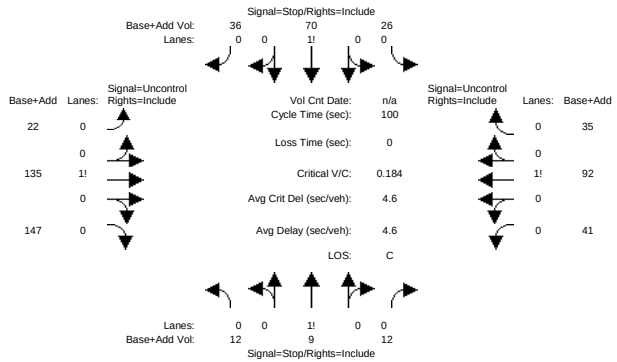
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #11: Arguello / Irving-Carl




```
Street Name:            Arguello                    Carl - Irving
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3    8     6    26   70    34    22  128   135    35   92    35
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3    8     6    26   70    34    22  128   135    35   92    35
Added Vol:      9    1     6     0    0     2     0    7    12     6    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   12    9    12    26   70    36    22  135   147    41   92    35
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:    13   10    13    28   76    39    24  147   160    45  100    38
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   13   10    13    28   76    39    24  147   160    45  100    38
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  540  502   227   494  563   119   138 xxxx xxxxx   307 xxxx xxxxx
Potent Cap.:  452  472   813   486  436   933  1446 xxxx xxxxx  1254 xxxx xxxxx
Move Cap.:    358  447   813   451  413   933  1446 xxxx xxxxx  1254 xxxx xxxxx
Volume/Cap:  0.04 0.02  0.02  0.06 0.18  0.04  0.02 xxxx  xxxx  0.04 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx   8.0 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A     *     *     A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  482 xxxxx  xxxx  496 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx  1.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 13.1 xxxxx xxxxx 15.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    C     *     *    *     *     *    *     *
ApproachDel:      13.1            15.2           xxxxxx           xxxxxx
ApproachLOS:         B              C               *                *
Note: Queue reported is the number of cars per lane.
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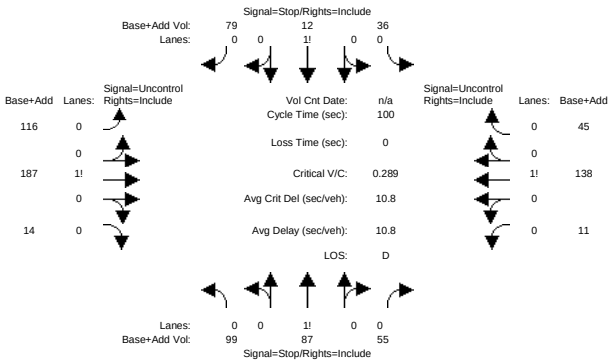
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #11: Arguello / Irving-Carl




```
Street Name:            Arguello                    Carl - Irving
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      91   83    50    36   10    78   116  183     4     7  138    45
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   91   83    50    36   10    78   116  183     4     7  138    45
Added Vol:      8    4     5     0    2     1     0    4    10     4    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   99   87    55    36   12    79   116  187    14    11  138    45
User Adj:    0.60 0.70  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.84 0.84  0.84  0.84 0.84  0.84  0.84 0.84  0.84  0.84 0.84  0.84
PHF Volume:    71   73    65    43   14    94   138  223    17    13  164    54
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   71   73    65    43   14    94   138  223    17    13  164    54
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  779  751   231   793  733   191   218 xxxx xxxxx   239 xxxx xxxxx
Potent Cap.:  313  340   808   306  348   851  1352 xxxx xxxxx  1327 xxxx xxxxx
Move Cap.:    244  299   808   209  306   851  1352 xxxx xxxxx  1327 xxxx xxxxx
Volume/Cap:  0.29 0.24  0.08  0.21 0.05  0.11  0.10 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.3 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.0 xxxx xxxxx   7.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A     *     *     A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  340 xxxxx  xxxx  417 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  3.9 xxxxx xxxxx  1.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 31.0 xxxxx xxxxx 18.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    D     *     *    C     *     *    *     *     *    *     *
ApproachDel:      31.0            18.5           xxxxxx           xxxxxx
ApproachLOS:         D              C               *                *
Note: Queue reported is the number of cars per lane.
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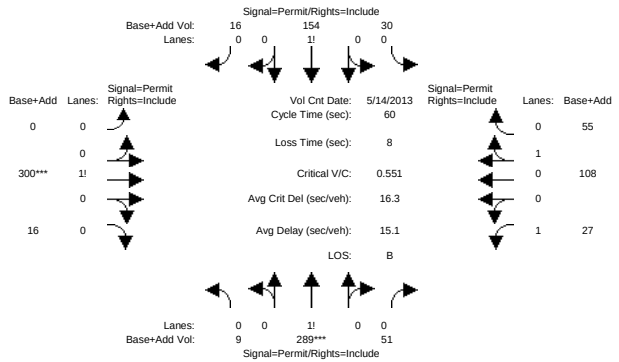
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #12: 9th Avenue / Judah Street



Street Name:	9th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 14 May 2013 <<												
Base Vol:	9	289	51	29	154	16	0	298	16	27	105	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	289	51	29	154	16	0	298	16	27	105	54
Added Vol:	0	0	0	1	0	0	0	2	0	0	3	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	289	51	30	154	16	0	300	16	27	108	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	9	301	53	31	160	17	0	313	17	28	113	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	301	53	31	160	17	0	313	17	28	113	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	301	53	31	160	17	0	313	17	28	113	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.71	0.67	0.67	0.67	1.00	0.83	0.83	0.61	0.69	0.68
Lanes:	0.02	0.83	0.15	0.15	0.77	0.08	0.00	0.95	0.05	1.00	0.66	0.34
Final Sat.:	35	1119	197	191	978	102	0	1497	80	1151	867	441
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.16	0.16	0.16	0.00	0.21	0.21	0.02	0.13	0.13
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.00	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.52	0.52	0.52	0.32	0.32	0.32	0.00	0.60	0.60	0.07	0.37	0.37
Uniform Del:	9.6	9.6	9.6	8.4	8.4	8.4	0.0	16.0	16.0	13.0	14.6	14.6
IncremntDel:	2.8	2.8	2.8	1.3	1.3	1.3	0.0	4.7	4.7	0.3	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.4	12.4	12.4	9.7	9.7	9.7	0.0	20.7	20.7	13.3	16.9	16.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.4	12.4	12.4	9.7	9.7	9.7	0.0	20.7	20.7	13.3	16.9	16.9
LOS by Move:	B	B	B	A	A	A	A	C	C	B	B	B
HCM2kAvgQ:	5	5	5	2	2	2	0	5	5	0	3	3

Note: Queue reported is the number of cars per lane.

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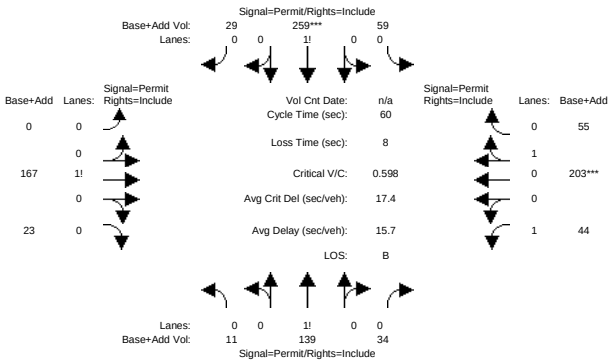
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #12: 9th Avenue / Judah Street



Street Name:	9th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	11	139	34	57	259	29	0	165	23	44	199	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	139	34	57	259	29	0	165	23	44	199	53
Added Vol:	0	0	0	2	0	0	0	2	0	0	4	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	139	34	59	259	29	0	167	23	44	203	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	12	154	38	66	288	32	0	186	26	49	226	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	154	38	66	288	32	0	186	26	49	226	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	154	38	66	288	32	0	186	26	49	226	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.70	0.69	0.66	0.67	0.66	1.00	0.82	0.82	0.59	0.71	0.70
Lanes:	0.06	0.75	0.19	0.17	0.75	0.08	0.00	0.88	0.12	1.00	0.78	0.22
Final Sat.:	79	997	244	215	944	106	0	1372	189	1117	1055	286
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.30	0.30	0.30	0.00	0.14	0.14	0.04	0.21	0.21
Crit Moves:					****						****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.00	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.30	0.30	0.30	0.59	0.59	0.59	0.00	0.39	0.39	0.13	0.61	0.61
Uniform Del:	8.3	8.3	8.3	10.1	10.1	10.1	0.0	14.7	14.7	13.3	16.1	16.1
IncremntDel:	1.1	1.1	1.1	3.9	3.9	3.9	0.0	2.1	2.1	0.7	5.8	5.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	9.4	9.4	9.4	14.0	14.0	14.0	0.0	16.7	16.7	13.9	22.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.4	9.4	9.4	14.0	14.0	14.0	0.0	16.7	16.7	13.9	22.0	22.0
LOS by Move:	A	A	A	B	B	B	A	B	B	B	C	C
HCM2kAvgQ:	2	2	2	5	5	5	0	3	3	1	5	5

Note: Queue reported is the number of cars per lane.

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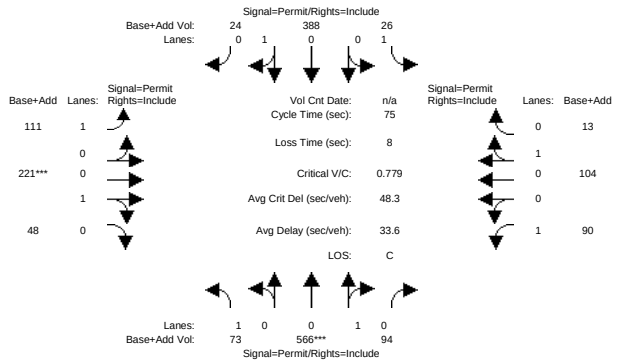
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #13: 7th Avenue / Judah Street



Street Name:	7th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	36	36	36	36	36	36	31	31	31	31	31	31
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	73	557	90	26	381	24	111	219	48	86	101	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	557	90	26	381	24	111	219	48	86	101	13
Added Vol:	0	9	4	0	7	0	0	2	0	4	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	73	566	94	26	388	24	111	221	48	90	104	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	75	584	97	27	400	25	114	228	49	93	107	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	584	97	27	400	25	114	228	49	93	107	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	584	97	27	400	25	114	228	49	93	107	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.33	0.73	0.73	0.15	0.74	0.74	0.55	0.71	0.70	0.42	0.72	0.71
Lanes:	1.00	0.86	0.14	1.00	0.94	0.06	1.00	0.82	0.18	1.00	0.89	0.11
Final Sat.:	628	1189	197	289	1323	82	1038	1109	241	792	1213	152
Capacity Analysis Module:												
Vol/Sat:	0.12	0.49	0.49	0.09	0.30	0.30	0.11	0.21	0.21	0.12	0.09	0.09
Crit Moves:		****						****				
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Volume/Cap:	0.25	1.02	1.02	0.19	0.63	0.63	0.27	0.50	0.50	0.28	0.21	0.21
Uniform Del:	11.5	19.5	19.5	11.2	14.5	14.5	14.5	16.2	16.2	14.6	14.2	14.2
IncremntDel:	2.0	40.6	40.6	3.1	4.4	4.4	1.5	3.1	3.1	2.2	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.5	60.1	60.1	14.3	19.0	19.0	16.0	19.4	19.4	16.8	15.0	15.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.5	60.1	60.1	14.3	19.0	19.0	16.0	19.4	19.4	16.8	15.0	15.0
LOS by Move:	B	E	E	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	1	18	18	0	7	7	2	5	5	2	2	2

Note: Queue reported is the number of cars per lane.

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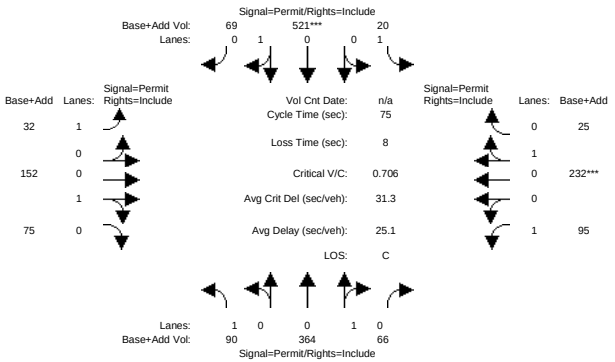
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #13: 7th Avenue / Judah Street



Street Name:	7th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	36	36	36	36	36	36	31	31	31	31	31	31
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	90	359	64	20	516	69	32	148	75	93	226	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	359	64	20	516	69	32	148	75	93	226	25
Added Vol:	0	5	2	0	5	0	0	4	0	2	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	364	66	20	521	69	32	152	75	95	232	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	93	375	68	21	537	71	33	157	77	98	239	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	375	68	21	537	71	33	157	77	98	239	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	375	68	21	537	71	33	157	77	98	239	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.20	0.73	0.72	0.32	0.73	0.73	0.43	0.70	0.68	0.45	0.72	0.72
Lanes:	1.00	0.85	0.15	1.00	0.88	0.12	1.00	0.67	0.33	1.00	0.90	0.10
Final Sat.:	384	1171	212	602	1229	163	811	879	434	862	1235	133
Capacity Analysis Module:												
Vol/Sat:	0.24	0.32	0.32	0.03	0.44	0.44	0.04	0.18	0.18	0.11	0.19	0.19
Crit Moves:					****						****	
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Volume/Cap:	0.50	0.67	0.67	0.07	0.91	0.91	0.10	0.43	0.43	0.27	0.47	0.47
Uniform Del:	13.4	14.9	14.9	10.5	18.0	18.0	13.5	15.7	15.7	14.6	16.0	16.0
IncremntDel:	9.5	5.3	5.3	0.5	18.7	18.7	0.6	2.5	2.5	1.9	2.8	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	22.9	20.2	20.2	11.0	36.8	36.8	14.0	18.2	18.2	16.5	18.8	18.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.9	20.2	20.2	11.0	36.8	36.8	14.0	18.2	18.2	16.5	18.8	18.8
LOS by Move:	C	C	C	B	D	D	B	B	B	B	B	B
HCM2kAvgQ:	1	8	7	0	14	14	1	4	4	2	5	5

Note: Queue reported is the number of cars per lane.

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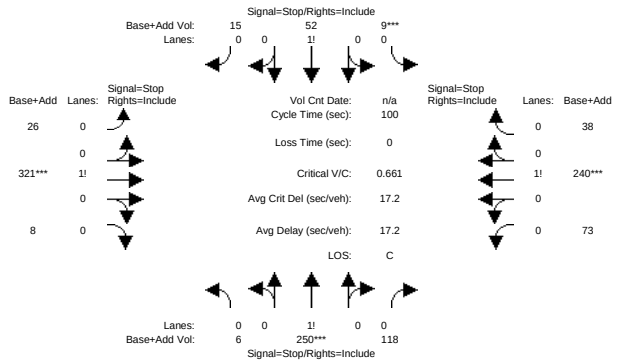
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #14: 6th Avenue / Judah Street



Street Name:	6th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	6	250	118	9	52	15	26	315	8	73	233	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	250	118	9	52	15	26	315	8	73	233	38
Added Vol:	0	0	0	0	0	0	0	6	0	0	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	250	118	9	52	15	26	321	8	73	240	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	6	258	122	9	54	15	27	331	8	75	247	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	258	122	9	54	15	27	331	8	75	247	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	258	122	9	54	15	27	331	8	75	247	39
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.02	0.67	0.31	0.12	0.68	0.20	0.07	0.91	0.02	0.21	0.68	0.11
Final Sat.:	9	390	184	52	300	87	43	525	13	121	398	63
Capacity Analysis Module:												
Vol/Sat:	0.66	0.66	0.66	0.18	0.18	0.18	0.63	0.63	0.63	0.62	0.62	0.62
Crit Moves:		****		****				****			****	
Delay/Veh:	18.3	18.3	18.3	10.8	10.8	10.8	17.5	17.5	17.5	17.2	17.2	17.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.3	18.3	18.3	10.8	10.8	10.8	17.5	17.5	17.5	17.2	17.2	17.2
LOS by Move:	C	C	C	B	B	B	C	C	C	C	C	C
ApproachDel:		18.3			10.8			17.5			17.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		18.3			10.8			17.5			17.2	
LOS by Appr:		C			B			C			C	
AllWayAvgQ:	1.5	1.5	1.5	0.1	0.1	0.1	1.4	1.4	1.4	1.3	1.3	1.3

Note: Queue reported is the number of cars per lane.

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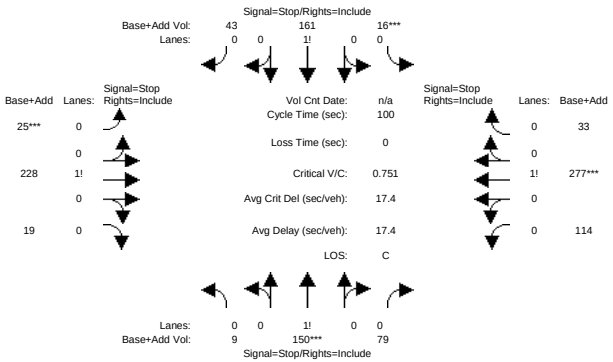
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #14: 6th Avenue / Judah Street



Street Name:	6th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	9	150	79	16	161	43	25	222	19	114	269	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	150	79	16	161	43	25	222	19	114	269	33
Added Vol:	0	0	0	0	0	0	0	6	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	150	79	16	161	43	25	228	19	114	277	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	9	156	82	17	168	45	26	238	20	119	289	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	156	82	17	168	45	26	238	20	119	289	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	156	82	17	168	45	26	238	20	119	289	34
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.63	0.33	0.07	0.73	0.20	0.09	0.84	0.07	0.27	0.65	0.08
Final Sat.:	20	326	172	37	368	98	50	453	38	158	384	46
Capacity Analysis Module:												
Vol/Sat:	0.48	0.48	0.48	0.46	0.46	0.46	0.52	0.52	0.52	0.75	0.75	0.75
Crit Moves:		****		****				****			****	
Delay/Veh:	14.0	14.0	14.0	13.7	13.7	13.7	14.8	14.8	14.8	22.9	22.9	22.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.0	14.0	14.0	13.7	13.7	13.7	14.8	14.8	14.8	22.9	22.9	22.9
LOS by Move:	B	B	B	B	B	B	B	B	B	C	C	C
ApproachDel:		14.0			13.7			14.8			22.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.0			13.7			14.8			22.9	
LOS by Appr:		B			B			B			C	
AllWayAvgQ:	0.7	0.7	0.7	0.6	0.6	0.6	0.9	0.9	0.9	2.3	2.3	2.3

Note: Queue reported is the number of cars per lane.

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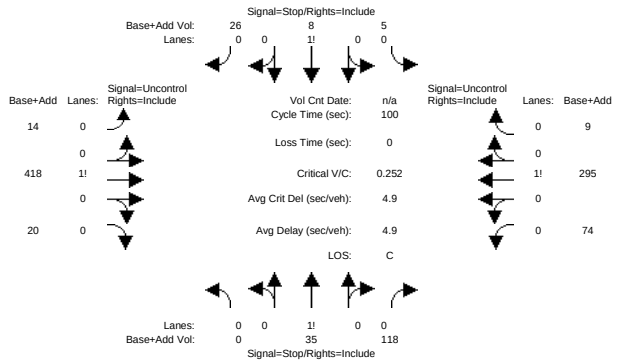
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #15: 5th Avenue / Judah Street



Street Name:	5th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	0	34	117	5	8	26	14	412	20	73	288	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	34	117	5	8	26	14	412	20	73	288	9
Added Vol:	0	1	1	0	0	0	0	6	0	1	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	35	118	5	8	26	14	418	20	74	295	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	36	123	5	8	27	15	435	21	77	307	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	36	123	5	8	27	15	435	21	77	307	9
Critical Gap Module:												
Critical Gp:	xxxxx	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	1046	546	1121	1052	412	367	xxxx	xxxxx	506	xxxx	xxxxx
Potent Cap.:	xxxx	228	538	183	227	640	1192	xxxx	xxxxx	1059	xxxx	xxxxx
Move Cap.:	xxxx	188	488	99	187	580	1135	xxxx	xxxxx	1008	xxxx	xxxxx
Volume/Cap:	xxxx	0.19	0.25	0.05	0.04	0.05	0.01	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	8.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	358	xxxx	282	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	2.2	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	22.9	xxxxx	19.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	C	*	C	*	*	*	*	*	*	*
ApproachDel:		22.9			19.9			xxxxxx			xxxxxx	
ApproachLOS:		C			C			*			*	

Note: Queue reported is the number of cars per lane.

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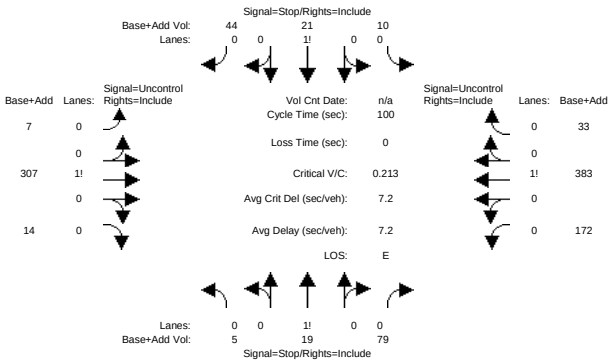
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #15: 5th Avenue / Judah Street



Street Name:	5th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	5	17	79	10	21	44	7	301	14	172	375	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	17	79	10	21	44	7	301	14	172	375	33
Added Vol:	0	2	0	0	0	0	0	6	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	19	79	10	21	44	7	307	14	172	383	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	6	22	90	11	24	50	8	349	16	195	435	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	22	90	11	24	50	8	349	16	195	435	38
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1355	1336	457	1373	1326	554	523	xxxx	xxxxx	415	xxxx	xxxxx
Potent Cap.:	127	153	604	123	156	532	1044	xxxx	xxxxx	1144	xxxx	xxxxx
Move Cap.:	73	110	548	67	112	483	994	xxxx	xxxxx	1090	xxxx	xxxxx
Volume/Cap:	0.08	0.20	0.16	0.17	0.21	0.10	0.01	xxxx	xxxx	0.18	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	9.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	267	xxxxx	xxxx	175	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	2.1	xxxxx	xxxxx	2.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	28.6	xxxxx	xxxxx	43.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	E	*	*	*	*	*	*	*
ApproachDel:		28.6			43.6			xxxxxx			xxxxxx	
ApproachLOS:		D			E			*			*	

Note: Queue reported is the number of cars per lane.

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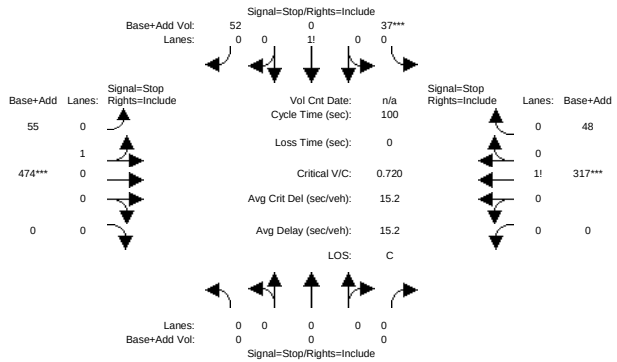
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #16: 4th Avenue / Parnassus




```
Street Name:            4th Avenue                    Parnassus
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0    37     0    52    55   467     0     0   309    45
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0    37     0    52    55   467     0     0   309    45
Added Vol:      0     0     0     0     0     0     0     7     0     0     8     3
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     0     0    37     0    52    55   474     0     0   317    48
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:     0     0     0    39     0    55    58   499     0     0   334    51
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0    39     0    55    58   499     0     0   334    51
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0     0     0    39     0    55    58   499     0     0   334    51
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  0.00  0.00  0.41  0.01  0.58  0.10  0.90  0.00  0.00  0.87  0.13
Final Sat.:     0     0     0   242     0   339    80   693     0     0   654    99
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx  xxxx  xxxx  0.16  0.00  0.16  0.72  0.72  xxxx  xxxx  0.51  0.51
Crit Moves:                     ****                ****                ****
Delay/Veh:    0.0   0.0   0.0   9.5   9.5   9.5  18.2  18.2   0.0   0.0  12.3  12.3
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0   9.5   9.5   9.5  18.2  18.2   0.0   0.0  12.3  12.3
LOS by Move:    *     *     *     A     A     A     C     C     *     *     B     B
ApproachDel:       xxxxxx             9.5            18.2            12.3
Delay Adj:          xxxxx            1.00            1.00            1.00
ApprAdjDel:        xxxxxx             9.5            18.2            12.3
LOS by Appr:            *               A               C               B
AllWayAvgQ:   0.0   0.0   0.0   0.2   0.2   0.2   2.3   2.3   2.3   1.0   1.0   1.0
Note: Queue reported is the number of cars per lane.
```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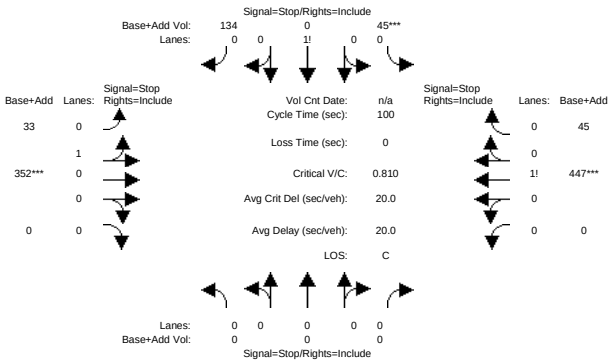
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #16: 4th Avenue / Parnassus




```
Street Name:            4th Avenue                    Parnassus
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0    45     0   134    33   346     0     0   438    42
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0    45     0   134    33   346     0     0   438    42
Added Vol:      0     0     0     0     0     0     0     6     0     0     9     3
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     0     0    45     0   134    33   352     0     0   447    45
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.86  0.86  0.86  0.86  0.86  0.86  0.86  0.86  0.86  0.86  0.86  0.86
PHF Volume:     0     0     0    52     0   156    38   409     0     0   520    52
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0    52     0   156    38   409     0     0   520    52
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0     0     0    52     0   156    38   409     0     0   520    52
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  0.00  0.00  0.25  0.00  0.75  0.09  0.91  0.00  0.00  0.91  0.09
Final Sat.:     0     0     0   146     0   434    58   615     0     0   642    65
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx  xxxx  xxxx  0.36  xxxx  0.36  0.67  0.67  xxxx  xxxx  0.81  0.81
Crit Moves:                     ****                ****                ****
Delay/Veh:    0.0   0.0   0.0  11.6   0.0  11.6  17.5  17.5   0.0   0.0  25.1  25.1
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  11.6   0.0  11.6  17.5  17.5   0.0   0.0  25.1  25.1
LOS by Move:    *     *     *     B     *     B     C     C     *     *     D     D
ApproachDel:       xxxxxx            11.6            17.5            25.1
Delay Adj:          xxxxx            1.00            1.00            1.00
ApprAdjDel:        xxxxxx            11.6            17.5            25.1
LOS by Appr:            *               B               C               D
AllWayAvgQ:   0.0   0.0   0.0   0.5   0.5   0.5   1.7   1.7   1.7   3.3   3.3   3.3
Note: Queue reported is the number of cars per lane.
```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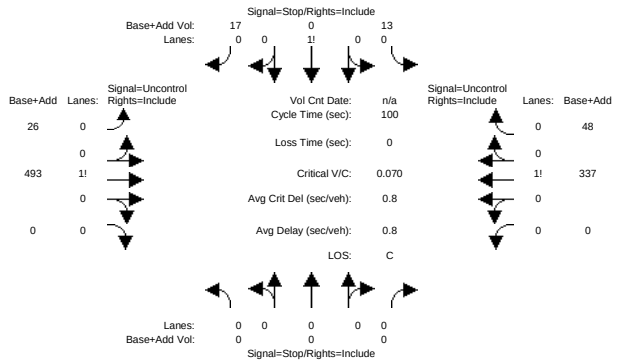
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #17: 3rd Avenue / Parnassus




```
Street Name:            3rd Avenue                    Parnassus
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    11    0    17    26  486     0     0  326    48
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    11    0    17    26  486     0     0  326    48
Added Vol:      0    0     0     2    0     0     0    7     0     0   11     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0    13    0    17    26  493     0     0  337    48
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91
PHF Volume:     0    0     0    14    0    19    29  542     0     0  370    53
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    14    0    19    29  542     0     0  370    53
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.4  6.5   6.2   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1096 1096   497   473 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   236  213   573  1089 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   203  188   503  1037 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.07 0.00  0.04  0.03 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A     *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  306 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.4 xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 18.2 xxxxx   8.6 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    C     *     A     *     *     *    *     *
ApproachDel:    xxxxxx            18.2           xxxxxx           xxxxxx
ApproachLOS:         *              C              *                *
Note: Queue reported is the number of cars per lane.
```

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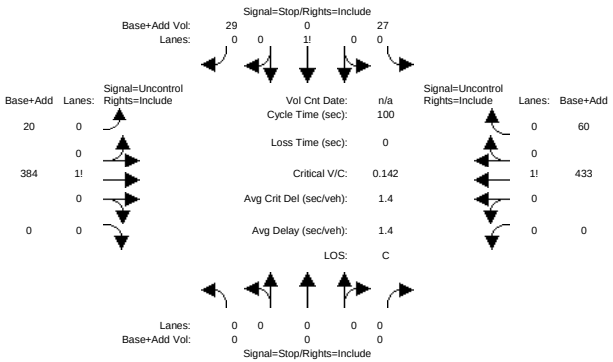
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #17: 3rd Avenue / Parnassus




```
Street Name:            3rd Avenue                    Parnassus
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    26    0    29    20  378     0     0  422    60
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    26    0    29    20  378     0     0  422    60
Added Vol:      0    0     0     1    0     0     0    6     0     0   11     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0    27    0    29    20  384     0     0  433    60
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91  0.91 0.91  0.91
PHF Volume:     0    0     0    30    0    32    22  422     0     0  476    66
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    30    0    32    22  422     0     0  476    66
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.4  6.5   6.2   4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1075 1075   609   592 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   243  220   495   984 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx   209  194   434   937 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.14 0.00  0.07  0.02 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.9 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A     *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  286 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.8 xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 21.0 xxxxx   8.9 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    C     *     A     *     *     *    *     *
ApproachDel:    xxxxxx            21.0           xxxxxx           xxxxxx
ApproachLOS:         *              C              *                *
Note: Queue reported is the number of cars per lane.
```

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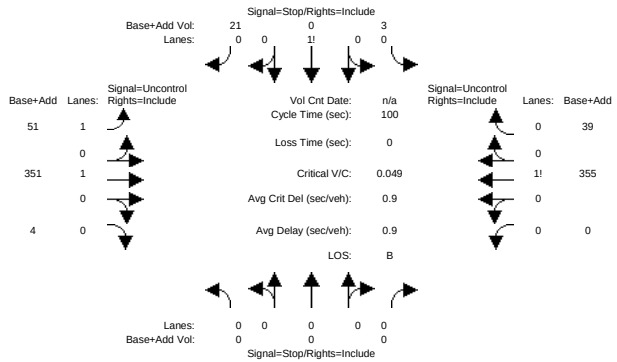
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #18: Hillway / Parnassus



Street Name:	Hillway						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Volume Module:												
Base Vol:	0	0	0	3	0	21	51	348	4	0	347	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	3	0	21	51	348	4	0	347	39
Added Vol:	0	0	0	0	0	0	0	3	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	3	0	21	51	351	4	0	355	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	0	3	0	21	52	358	4	0	362	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	3	0	21	52	358	4	0	362	40
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	946	948	482	452	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	290	261	584	1109	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	253	225	530	1056	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	0.00	0.04	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	466	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			13.1			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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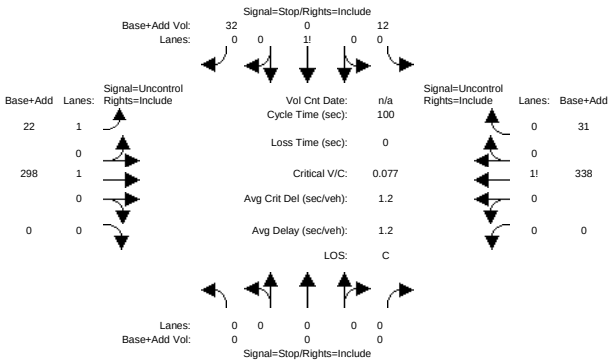
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #18: Hillway / Parnassus



Street Name:	Hillway						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Volume Module:												
Base Vol:	0	0	0	12	0	32	22	297	0	0	333	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	0	32	22	297	0	0	333	31
Added Vol:	0	0	0	0	0	0	0	1	0	0	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	12	0	32	22	298	0	0	338	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
PHF Volume:	0	0	0	14	0	39	27	359	0	0	407	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	14	0	39	27	359	0	0	407	37
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	938	938	526	495	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	293	264	552	1069	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	261	234	501	1018	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	0.00	0.08	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	400	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	15.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			15.4			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

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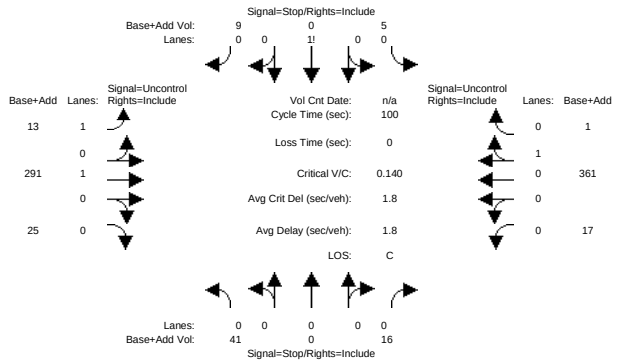
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #19: Hill Point / Parnassus



Street Name:	Hill Point						Parnassus Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	41	0	16	5	0	9	13	288	25	17	353	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	0	16	5	0	9	13	288	25	17	353	1
Added Vol:	0	0	0	0	0	0	0	3	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	0	16	5	0	9	13	291	25	17	361	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	43	0	17	5	0	9	14	306	26	18	380	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	43	0	17	5	0	9	14	306	26	18	380	1
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	768	764	319	772	776	381	381	xxxx	xxxxx	333	xxxx	xxxxx
Potent Cap.:	319	334	721	317	328	667	1177	xxxx	xxxxx	1227	xxxx	xxxxx
Move Cap.:	308	325	721	303	320	667	1177	xxxx	xxxxx	1227	xxxx	xxxxx
Volume/Cap:	0.14	0.00	0.02	0.02	0.00	0.01	0.01	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	8.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	367	xxxxx	xxxx	467	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.6	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	16.7	xxxxx	xxxxx	13.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	B	*	*	*	*	*	*	*
ApproachDel:		16.7			13.0			xxxxx			xxxxx	
ApproachLOS:		C			B			*			*	

Note: Queue reported is the number of cars per lane.

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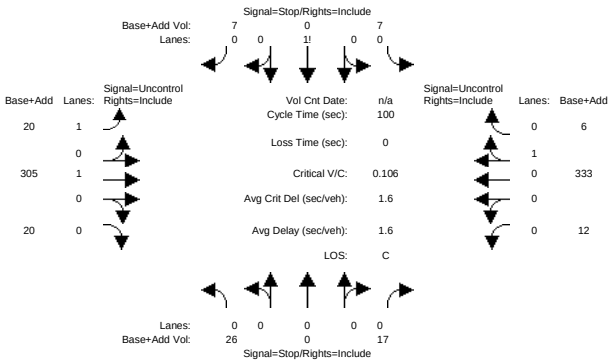
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #19: Hill Point / Parnassus



Street Name:	Hill Point						Parnassus Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	26	0	17	7	0	7	20	304	20	12	328	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	0	17	7	0	7	20	304	20	12	328	6
Added Vol:	0	0	0	0	0	0	0	1	0	0	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	0	17	7	0	7	20	305	20	12	333	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	30	0	20	8	0	8	23	351	23	14	383	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	30	0	20	8	0	8	23	351	23	14	383	7
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	826	825	362	832	833	386	390	xxxx	xxxxx	374	xxxx	xxxxx
Potent Cap.:	291	308	683	289	304	662	1169	xxxx	xxxxx	1185	xxxx	xxxxx
Move Cap.:	281	298	683	274	295	662	1169	xxxx	xxxxx	1185	xxxx	xxxxx
Volume/Cap:	0.11	0.00	0.03	0.03	0.00	0.01	0.02	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	366	xxxxx	xxxx	387	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.5	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	16.4	xxxxx	xxxxx	14.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	B	*	*	*	*	*	*	*
ApproachDel:		16.4			14.7			xxxxx			xxxxx	
ApproachLOS:		C			B			*			*	

Note: Queue reported is the number of cars per lane.

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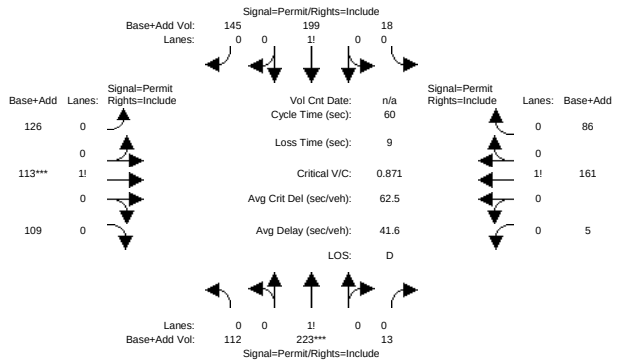
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #20: Stanyan / Parnassus



Street Name:	Stanyan						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	21	21	21	21	21	21
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	107	220	13	18	191	143	126	113	106	5	161	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	220	13	18	191	143	126	113	106	5	161	86
Added Vol:	5	3	0	0	8	2	0	0	3	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	112	223	13	18	199	145	126	113	109	5	161	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	123	245	14	20	219	159	138	124	120	5	177	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	245	14	20	219	159	138	124	120	5	177	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	245	14	20	219	159	138	124	120	5	177	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.58	0.58	0.69	0.69	0.67	0.51	0.52	0.51	0.69	0.69	0.68
Lanes:	0.32	0.64	0.04	0.05	0.54	0.41	0.36	0.32	0.32	0.02	0.63	0.35
Final Sat.:	355	707	41	64	713	520	352	315	304	26	833	445
Capacity Analysis Module:												
Vol/Sat:	0.35	0.35	0.35	0.31	0.31	0.31	0.39	0.39	0.39	0.21	0.21	0.21
Crit Moves:		****						****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.69	0.69	0.69	0.61	0.61	0.61	1.12	1.12	1.12	0.61	0.61	0.61
Uniform Del:	11.5	11.5	11.5	10.8	10.8	10.8	19.5	19.5	19.5	16.1	16.1	16.1
IncremntDel:	7.0	7.0	7.0	4.3	4.3	4.3	87.0	87.0	87.0	5.9	5.9	5.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	18.5	18.5	18.5	15.1	15.1	15.1	106.5	106	106.5	22.0	22.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.5	18.5	18.5	15.1	15.1	15.1	106.5	106	106.5	22.0	22.0	22.0
LOS by Move:	B	B	B	B	B	B	F	F	F	C	C	C
HCM2kAvgQ:	7	7	7	6	6	6	14	14	14	5	5	5

Note: Queue reported is the number of cars per lane.

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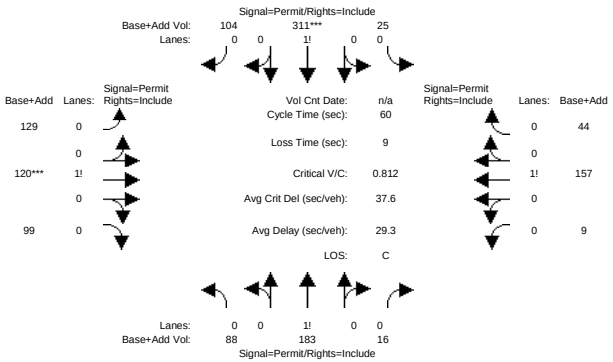
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #20: Stanyan / Parnassus



Street Name:	Stanyan						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	21	21	21	21	21	21
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	87	182	16	25	309	101	129	120	98	9	157	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	182	16	25	309	101	129	120	98	9	157	44
Added Vol:	1	1	0	0	2	3	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	183	16	25	311	104	129	120	99	9	157	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	92	191	17	26	324	108	134	125	103	9	164	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	191	17	26	324	108	134	125	103	9	164	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	191	17	26	324	108	134	125	103	9	164	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.58	0.58	0.70	0.70	0.69	0.55	0.56	0.55	0.70	0.70	0.69
Lanes:	0.31	0.64	0.05	0.06	0.70	0.24	0.37	0.34	0.29	0.04	0.75	0.21
Final Sat.:	339	705	62	76	941	315	389	361	298	57	987	277
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.34	0.34	0.34	0.35	0.35	0.35	0.17	0.17	0.17
Crit Moves:					****			****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.54	0.54	0.54	0.69	0.69	0.69	0.99	0.99	0.99	0.47	0.47	0.47
Uniform Del:	10.3	10.3	10.3	11.4	11.4	11.4	19.4	19.4	19.4	15.2	15.2	15.2
IncremntDel:	3.8	3.8	3.8	5.7	5.7	5.7	44.1	44.1	44.1	3.4	3.4	3.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.0	14.0	14.0	17.2	17.2	17.2	63.5	63.5	63.5	18.6	18.6	18.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.0	14.0	14.0	17.2	17.2	17.2	63.5	63.5	63.5	18.6	18.6	18.6
LOS by Move:	B	B	B	B	B	B	E	E	E	B	B	B
HCM2kAvgQ:	5	5	5	7	7	7	10	10	10	4	4	4

Note: Queue reported is the number of cars per lane.

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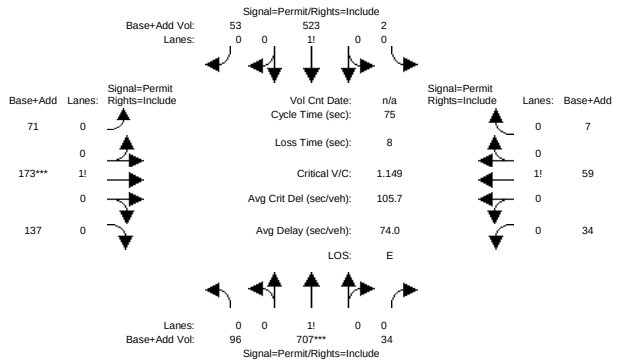
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #21: 7th Avenue / Kirkham Street




```
Street Name:            7th Avenue                    Kirkham Street
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    45   45   45    45   45   45    22   22   22    22   22   22
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      96  695   32     1  514   53    71  172  137    32   58    6
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   96  695   32     1  514   53    71  172  137    32   58    6
Added Vol:      0   12    2     1    9    0     0    1    0     2    1    1
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   96  707   34     2  523   53    71  173  137    34   59    7
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96
PHF Volume:   100  736   35     2  545   55    74  180  143    35   61    7
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  100  736   35     2  545   55    74  180  143    35   61    7
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  100  736   35     2  545   55    74  180  143    35   61    7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.65 0.65  0.65  0.74 0.74  0.73  0.64 0.65  0.63  0.58 0.58  0.58
Lanes:       0.11 0.85  0.04  0.01 0.90  0.09  0.19 0.45  0.36  0.34 0.59  0.07
Final Sat.:   142 1049   50     5 1266   128   228  556   440   376  653    77
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.70 0.70  0.70  0.43 0.43  0.43  0.32 0.32  0.32  0.09 0.09  0.09
Crit Moves:       ****                      ****
Green/Cycle: 0.60 0.60  0.60  0.60 0.60  0.60  0.29 0.29  0.29  0.29 0.29  0.29
Volume/Cap:  1.17 1.17  1.17  0.72 0.72  0.72  1.11 1.11  1.11  0.32 0.32  0.32
Uniform Del: 15.0 15.0  15.0  10.5 10.5  10.5  26.5 26.5  26.5  20.7 20.7  20.7
IncremntDel: 90.8 90.8  90.8   5.2  5.2   5.2  79.1 79.1  79.1   2.6  2.6   2.6
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:  105.8  106 105.8  15.8 15.8  15.8 105.6  106 105.6  23.3 23.3  23.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 105.8  106 105.8  15.8 15.8  15.8 105.6  106 105.6  23.3 23.3  23.3
LOS by Move:    F    F     F     B    B     B     F    F     F     C    C     C
HCM2kAvgQ:     39   39    39    10   10    10    18   18    18     2    2     2
Note: Queue reported is the number of cars per lane.
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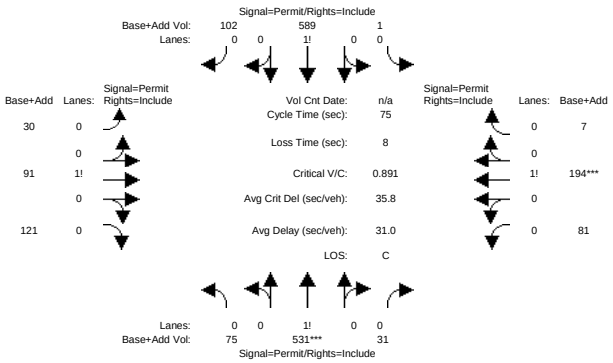
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #21: 7th Avenue / Kirkham Street




```
Street Name:            7th Avenue                    Kirkham Street
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    45   45   45    45   45   45    22   22   22    22   22   22
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      75  524   30     0  583  102    30   89  121    80  192    6
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   75  524   30     0  583  102    30   89  121    80  192    6
Added Vol:      0    7    1     1    6    0     0    2    0     1    2    1
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   75  531   31     1  589  102    30   91  121    81  194    7
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:   77  547   32     1  607  105    31   94  125    84  200    7
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  77  547   32     1  607  105    31   94  125    84  200    7
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  77  547   32     1  607  105    31   94  125    84  200    7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.64 0.64  0.64  0.73 0.73  0.73  0.65 0.66  0.63  0.59 0.60  0.60
Lanes:       0.12 0.83  0.05  0.01 0.85  0.14  0.12 0.37  0.51  0.29 0.69  0.02
Final Sat.:   143 1014   59     2 1182   205   151  459   610   327  783    28
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.54 0.54  0.54  0.51 0.51  0.51  0.20 0.20  0.20  0.26 0.26  0.26
Crit Moves:       ****                      ****
Green/Cycle: 0.60 0.60  0.60  0.60 0.60  0.60  0.29 0.29  0.29  0.29 0.29  0.29
Volume/Cap:  0.90 0.90  0.90  0.86 0.86  0.86  0.70 0.70  0.70  0.87 0.87  0.87
Uniform Del: 13.0 13.0  13.0  12.3 12.3  12.3  23.5 23.5  23.5  25.2 25.2  25.2
IncremntDel: 16.3 16.3  16.3  11.0 11.0  11.0  10.7 10.7  10.7  25.4 25.4  25.4
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   29.3 29.3  29.3  23.4 23.4  23.4  34.2 34.2  34.2  50.5 50.5  50.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  29.3 29.3  29.3  23.4 23.4  23.4  34.2 34.2  34.2  50.5 50.5  50.5
LOS by Move:    C    C     C     C    C     C     C    C     C     D    D     D
HCM2kAvgQ:     17   17    17    14   14    14     7    7     7    10   10    10
Note: Queue reported is the number of cars per lane.
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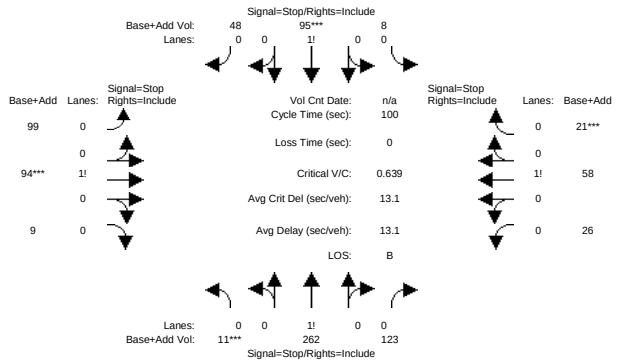
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #22: 6th Avenue / Kirkham Street



Street Name:	6th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	11	262	123	8	95	48	99	90	9	26	54	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	262	123	8	95	48	99	90	9	26	54	21
Added Vol:	0	0	0	0	0	0	0	4	0	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	262	123	8	95	48	99	94	9	26	58	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	13	298	140	9	108	55	113	107	10	30	66	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	298	140	9	108	55	113	107	10	30	66	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	298	140	9	108	55	113	107	10	30	66	24
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.03	0.66	0.31	0.05	0.63	0.32	0.49	0.47	0.04	0.25	0.55	0.20
Final Sat.:	20	466	219	33	393	199	287	272	26	138	308	111
Capacity Analysis Module:												
Vol/Sat:	0.64	0.64	0.64	0.27	0.27	0.27	0.39	0.39	0.39	0.21	0.21	0.21
Crit Moves:	****				****			****				****
Delay/Veh:	15.6	15.6	15.6	10.1	10.1	10.1	11.9	11.9	11.9	10.1	10.1	10.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.6	15.6	15.6	10.1	10.1	10.1	11.9	11.9	11.9	10.1	10.1	10.1
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:	15.6			10.1			11.9			10.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	15.6			10.1			11.9			10.1		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	1.5	1.5	1.5	0.3	0.3	0.3	0.5	0.5	0.5	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

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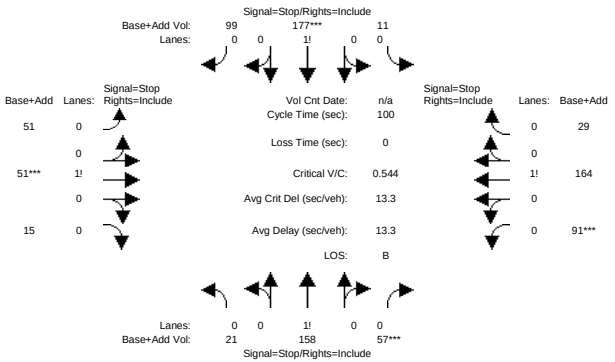
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #22: 6th Avenue / Kirkham Street



Street Name:	6th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	21	158	57	11	177	99	51	47	15	91	161	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	158	57	11	177	99	51	47	15	91	161	29
Added Vol:	0	0	0	0	0	0	0	4	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	158	57	11	177	99	51	51	15	91	164	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	24	180	65	13	201	113	58	58	17	103	186	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	180	65	13	201	113	58	58	17	103	186	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	180	65	13	201	113	58	58	17	103	186	33
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.67	0.24	0.04	0.62	0.34	0.43	0.44	0.13	0.32	0.58	0.10
Final Sat.:	53	401	145	24	385	215	228	228	67	190	343	61
Capacity Analysis Module:												
Vol/Sat:	0.45	0.45	0.45	0.52	0.52	0.52	0.25	0.25	0.25	0.54	0.54	0.54
Crit Moves:			****		****			****			****	
Delay/Veh:	12.5	12.5	12.5	13.6	13.6	13.6	10.8	10.8	10.8	14.5	14.5	14.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	12.5	12.5	13.6	13.6	13.6	10.8	10.8	10.8	14.5	14.5	14.5
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
ApproachDel:	12.5			13.6			10.8			14.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.5			13.6			10.8			14.5		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.7	0.7	0.7	0.9	0.9	0.9	0.3	0.3	0.3	1.0	1.0	1.0

Note: Queue reported is the number of cars per lane.

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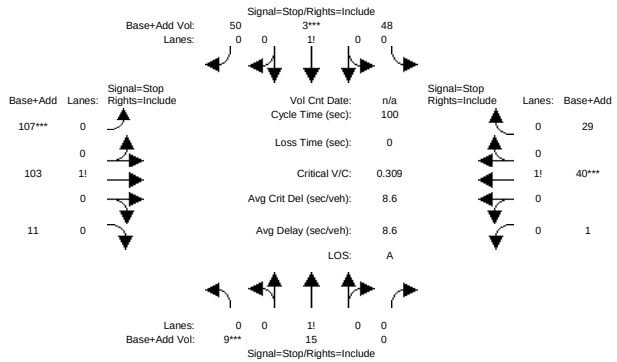
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #23: 5th Avenue / Kirkham Street



Street Name:	5th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	9	15	0	47	3	50	107	99	11	1	36	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	15	0	47	3	50	107	99	11	1	36	28
Added Vol:	0	0	0	1	0	0	0	4	0	0	4	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	15	0	48	3	50	107	103	11	1	40	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	10	17	0	54	3	56	120	116	12	1	45	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	17	0	54	3	56	120	116	12	1	45	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	17	0	54	3	56	120	116	12	1	45	33
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.38	0.62	0.00	0.48	0.03	0.49	0.48	0.47	0.05	0.01	0.58	0.41
Final Sat.:	262	437	0	363	23	378	389	375	40	12	467	339
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	xxxx	0.15	0.15	0.15	0.31	0.31	0.31	0.10	0.10	0.10
Crit Moves:	****				****		****				****	
Delay/Veh:	8.0	8.0	0.0	8.2	8.2	8.2	9.2	9.2	9.2	7.7	7.7	7.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.0	8.0	0.0	8.2	8.2	8.2	9.2	9.2	9.2	7.7	7.7	7.7
LOS by Move:	A	A	*	A	A	A	A	A	A	A	A	A
ApproachDel:	8.0			8.2			9.2			7.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.0			8.2			9.2			7.7		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.0	0.0	0.0	0.2	0.2	0.2	0.4	0.4	0.4	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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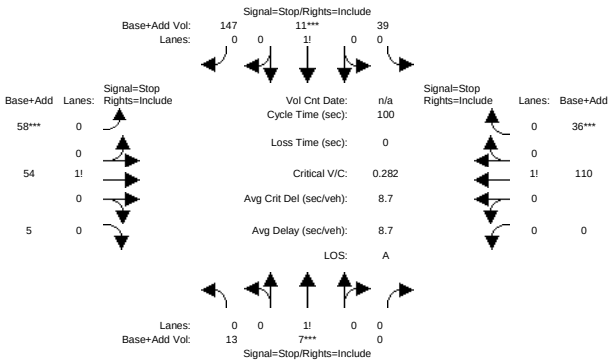
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #23: 5th Avenue / Kirkham Street



Street Name:	5th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	13	7	0	38	11	147	58	50	5	0	107	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	7	0	38	11	147	58	50	5	0	107	34
Added Vol:	0	0	0	1	0	0	0	4	0	0	3	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	7	0	39	11	147	58	54	5	0	110	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	15	8	0	45	13	171	67	63	6	0	128	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	8	0	45	13	171	67	63	6	0	128	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	8	0	45	13	171	67	63	6	0	128	42
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.65	0.35	0.00	0.20	0.05	0.75	0.50	0.46	0.04	0.00	0.75	0.25
Final Sat.:	437	235	0	161	45	607	361	336	31	0	579	190
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	xxxx	0.28	0.28	0.28	0.19	0.19	0.19	xxxx	0.22	0.22
Crit Moves:		****			****		****					****
Delay/Veh:	8.1	8.1	0.0	8.7	8.7	8.7	8.7	8.7	8.7	0.0	8.6	8.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	0.0	8.7	8.7	8.7	8.7	8.7	8.7	0.0	8.6	8.6
LOS by Move:	A	A	*	A	A	A	A	A	A	*	A	A
ApproachDel:	8.1			8.7			8.7			8.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.1			8.7			8.7			8.6		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.0	0.0	0.0	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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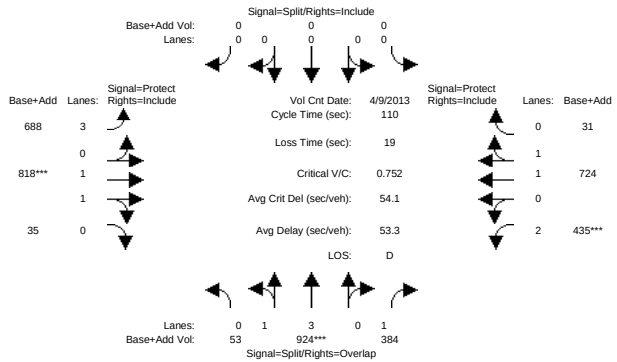
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module: >> Count Date: 9 Apr 2013 << 7:00-8:45am												
Base Vol:	53	873	379	0	0	0	682	817	35	319	711	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	873	379	0	0	0	682	817	35	319	711	31
Added Vol:	0	51	5	0	0	0	6	1	0	116	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	924	384	0	0	0	688	818	35	435	724	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	56	973	404	0	0	0	724	861	37	458	762	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	973	404	0	0	0	724	861	37	458	762	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	973	404	0	0	0	724	861	37	458	762	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.80	0.79	0.81	0.80
Lanes:	0.22	3.78	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	318	5545	1345	0	0	0	4480	2934	126	2987	2934	126
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.30	0.00	0.00	0.00	0.16	0.29	0.29	0.15	0.26	0.26
Crit Moves:		****						****			****	
Green/Cycle:	0.35	0.35	0.49	0.00	0.00	0.00	0.16	0.34	0.34	0.14	0.31	0.31
Volume/Cap:	0.49	0.49	0.61	0.00	0.00	0.00	0.99	0.87	0.87	1.12	0.84	0.84
Uniform Del:	27.8	27.8	20.4	0.0	0.0	0.0	45.9	34.3	34.3	47.5	35.5	35.5
IncremntDel:	0.8	0.8	4.2	0.0	0.0	0.0	30.4	10.2	10.2	82.9	8.9	8.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.6	28.6	24.6	0.0	0.0	0.0	76.3	44.4	44.4	130.4	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.6	28.6	24.6	0.0	0.0	0.0	76.3	44.4	44.4	130.4	44.4	44.4
LOS by Move:	C	C	C	A	A	A	E	D	D	F	D	D
HCM2kAvgQ:	7	7	9	0	0	0	9	14	14	15	16	16

Note: Queue reported is the number of cars per lane.

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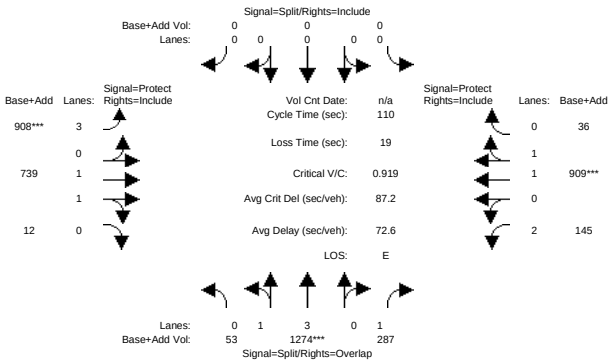
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	53	948	255	0	0	0	872	732	12	130	907	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	948	255	0	0	0	872	732	12	130	907	36
Added Vol:	0	326	32	0	0	0	36	7	0	15	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	1274	287	0	0	0	908	739	12	145	909	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	55	1313	296	0	0	0	936	762	12	149	937	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	1313	296	0	0	0	936	762	12	149	937	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	1313	296	0	0	0	936	762	12	149	937	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.81	0.79	0.81	0.80
Lanes:	0.16	3.84	1.00	0.00	0.00	0.00	3.00	1.97	0.03	2.00	1.92	0.08
Final Sat.:	234	5635	1356	0	0	0	4480	3024	49	2987	2943	117
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.22	0.00	0.00	0.00	0.21	0.25	0.25	0.05	0.32	0.32
Crit Moves:		****					****				****	
Green/Cycle:	0.35	0.35	0.48	0.00	0.00	0.00	0.16	0.35	0.35	0.12	0.31	0.31
Volume/Cap:	0.66	0.66	0.46	0.00	0.00	0.00	1.28	0.72	0.72	0.41	1.03	1.03
Uniform Del:	29.9	29.9	19.2	0.0	0.0	0.0	46.0	31.1	31.1	44.5	38.0	38.0
IncremntDel:	1.6	1.6	2.3	0.0	0.0	0.0	135.1	4.2	4.2	3.3	37.2	37.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.5	31.5	21.5	0.0	0.0	0.0	181.1	35.3	35.3	47.9	75.2	75.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5	31.5	21.5	0.0	0.0	0.0	181.1	35.3	35.3	47.9	75.2	75.2
LOS by Move:	C	C	C	A	A	A	F	D	D	D	E	E
HCM2kAvgQ:	10	10	6	0	0	0	19	11	11	3	25	25

Note: Queue reported is the number of cars per lane.

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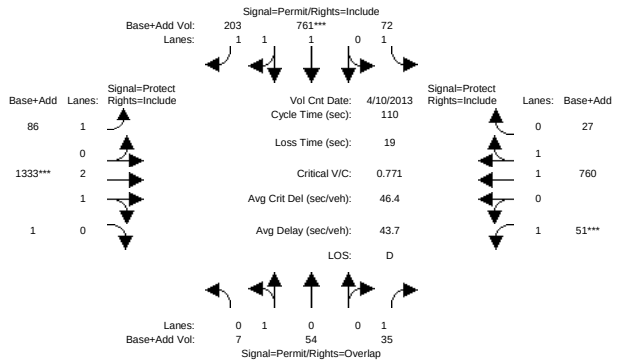
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module: >> Count Date: 10 Apr 2013 << 7:00-8:45am												
Base Vol:	7	47	28	72	335	203	86	1333	1	38	760	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	47	28	72	335	203	86	1333	1	38	760	27
Added Vol:	0	7	7	0	426	0	0	0	0	13	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	54	35	72	761	203	86	1333	1	51	760	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	8	58	38	77	818	218	92	1433	1	55	817	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	58	38	77	818	218	92	1433	1	55	817	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	58	38	77	818	218	92	1433	1	55	817	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	0.78	0.69	0.58	0.78	0.77	0.81	0.77	0.78	0.81	0.80	0.80
Lanes:	0.11	0.89	1.00	1.00	2.00	1.00	1.00	2.99	0.01	1.00	1.93	0.07
Final Sat.:	170	1311	1319	1111	2980	1468	1539	4377	2	1539	2930	104
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.03	0.07	0.27	0.15	0.06	0.33	0.33	0.04	0.28	0.28
Crit Moves:					****			****		****		
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.12	0.12	0.06	0.20	0.77	0.42	0.44	0.97	0.97	0.26	0.83	0.83
Uniform Del:	24.0	24.0	14.7	24.6	31.6	26.9	43.6	36.0	36.0	42.5	33.6	33.6
IncremntDel:	0.5	0.5	0.2	1.1	4.4	0.5	6.6	17.9	17.9	3.0	7.8	7.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	24.5	24.5	14.8	25.7	36.0	27.4	50.2	53.9	53.9	45.5	41.4	41.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.5	24.5	14.8	25.7	36.0	27.4	50.2	53.9	53.9	45.5	41.4	41.4
LOS by Move:	C	C	B	C	D	C	D	D	D	D	D	D
HCM2kAvgQ:	1	1	1	2	15	6	3	23	23	2	14	14

Note: Queue reported is the number of cars per lane.

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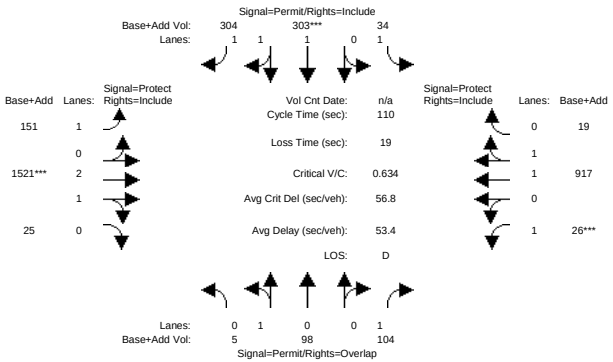
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	5	60	61	34	250	304	151	1521	25	24	917	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	60	61	34	250	304	151	1521	25	24	917	19
Added Vol:	0	38	43	0	53	0	0	0	0	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	98	104	34	303	304	151	1521	25	26	917	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	5	101	107	35	312	313	156	1568	26	27	945	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	101	107	35	312	313	156	1568	26	27	945	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	101	107	35	312	313	156	1568	26	27	945	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.84	0.84	0.59	0.50	0.75	0.64	0.81	0.81	0.77	0.81	0.80
Lanes:	0.05	0.95	1.00	1.00	1.37	1.63	1.00	2.95	0.05	1.00	1.96	0.04
Final Sat.:	77	1517	1126	942	1957	1963	1539	4514	74	1539	3007	62
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.10	0.04	0.16	0.16	0.10	0.35	0.35	0.02	0.31	0.31
Crit Moves:					****			****		****		
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.19	0.19	0.19	0.10	0.45	0.45	0.74	1.03	1.03	0.13	0.93	0.93
Uniform Del:	24.5	24.5	15.8	23.8	27.3	27.3	45.6	36.5	36.5	41.7	35.3	35.3
IncremntDel:	0.7	0.7	0.8	0.6	1.1	1.1	20.9	31.8	31.8	1.3	16.1	16.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.3	25.3	16.5	24.4	28.3	28.3	66.5	68.3	68.3	43.0	51.4	51.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.3	25.3	16.5	24.4	28.3	28.3	66.5	68.3	68.3	43.0	51.4	51.4
LOS by Move:	C	C	B	C	C	C	E	E	E	D	D	D
HCM2kAvgQ:	2	2	2	1	6	6	7	28	27	1	16	16

Note: Queue reported is the number of cars per lane.

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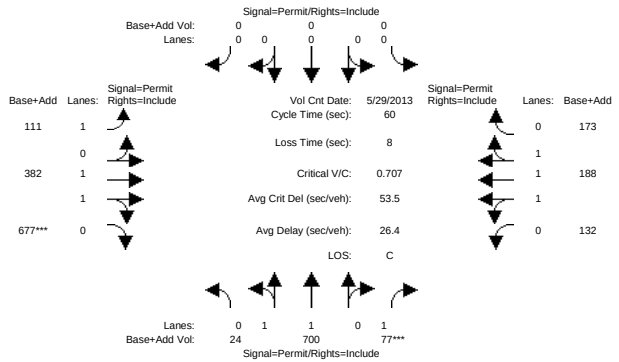
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #26: 7th St/Brannan




```
Street Name:            7th Street                    Brannan Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0   21     0   21    0     0   31   31    31    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am
Base Vol:      24  661   70     0    0    0   111  382  268    71  188  173
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   24  661   70     0    0    0   111  382  268    71  188  173
Added Vol:      0   39    7     0    0    0     0    0  409    61    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   24  700   77     0    0    0   111  382  677   132  188  173
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92
PHF Volume:    26  758   83     0    0    0   120  413  733   143  203  187
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   26  758   83     0    0    0   120  413  733   143  203  187
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   26  758   83     0    0    0   120  413  733   143  203  187
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.81 0.63  1.00 1.00 1.00  0.38 0.73 0.71  0.47 0.47 0.47
Lanes:       0.07 1.93 1.00  0.00 0.00 0.00  1.00 1.00 1.00  0.83 1.17 1.00
Final Sat.:   102 2965 1200     0    0    0   719 1392 1349   738 1051  886
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.26 0.26 0.07  0.00 0.00 0.00  0.17 0.30 0.54  0.19 0.19 0.21
Crit Moves:            ****                          ****
Green/Cycle: 0.35 0.35 0.35  0.00 0.00 0.00  0.52 0.52 0.52  0.52 0.52 0.52
Volume/Cap:  0.73 0.73 0.20  0.00 0.00 0.00  0.32 0.57 1.05  0.37 0.37 0.41
Uniform Del: 17.0 17.0 13.6   0.0  0.0  0.0   8.4 10.0 14.5   8.7  8.7  8.9
IncremntDel:  4.4  4.4  1.1   0.0  0.0  0.0   2.3  1.2 41.8   0.8  0.8  1.0
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  0.00 0.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   21.4 21.4 14.7   0.0  0.0  0.0  10.7 11.2 56.3   9.4  9.4  9.8
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  21.4 21.4 14.7   0.0  0.0  0.0  10.7 11.2 56.3   9.4  9.4  9.8
LOS by Move:    C    C    B     A    A    A     B    B    E     A    A    A
HCM2kAvgQ:      8    8    1     0    0    0     2    6   25     2    2    3
Note: Queue reported is the number of cars per lane.
```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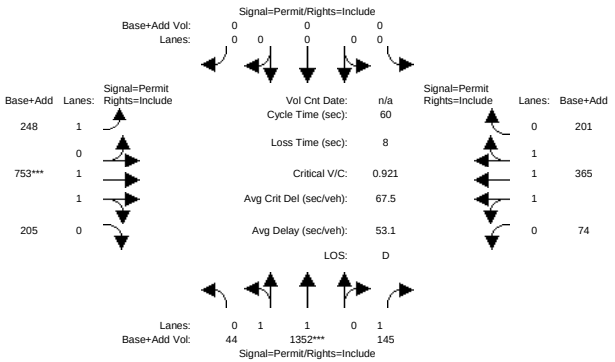
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #26: 7th St/Brannan




```
Street Name:            7th Street                    Brannan Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0   24     0   24    0     0   28   28    28    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      44 1109   98     0    0    0   248  753  154    66  365  201
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   44 1109   98     0    0    0   248  753  154    66  365  201
Added Vol:      0  243   47     0    0    0     0    0   51     8    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   44 1352  145     0    0    0   248  753  205    74  365  201
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:    45 1388  149     0    0    0   255  773  210    76  375  206
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   45 1388  149     0    0    0   255  773  210    76  375  206
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   45 1388  149     0    0    0   255  773  210    76  375  206
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.81 0.63  1.00 1.00 1.00  0.32 0.78 0.78  0.54 0.54 0.53
Lanes:       0.06 1.94 1.00  0.00 0.00 0.00  1.00 1.57 0.43  0.35 1.70 0.95
Final Sat.:   97 2970 1201     0    0    0   616 2337  636   352 1739  957
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.47 0.47 0.12  0.00 0.00 0.00  0.41 0.33 0.33  0.22 0.22 0.22
Crit Moves:       ****                          ****
Green/Cycle: 0.40 0.40 0.40  0.00 0.00 0.00  0.47 0.47 0.47  0.47 0.47 0.47
Volume/Cap:  1.17 1.17 0.31  0.00 0.00 0.00  0.89 0.71 0.71  0.46 0.46 0.46
Uniform Del: 18.0 18.0 12.3   0.0  0.0  0.0  14.5 12.8 12.8  10.9 10.9 10.9
IncremntDel: 84.9 84.9  1.7   0.0  0.0  0.0  30.5  3.1  3.1   1.1  1.1  1.1
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  0.00 0.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:  102.9  103 14.0   0.0  0.0  0.0  45.0 15.8 15.8  12.0 12.0 12.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh: 102.9  103 14.0   0.0  0.0  0.0  45.0 15.8 15.8  12.0 12.0 12.0
LOS by Move:    F    F    B     A    A    A     D    B    B     B    B    B
HCM2kAvgQ:     31   31    2     0    0    0     8    9    9     4    4    4
Note: Queue reported is the number of cars per lane.
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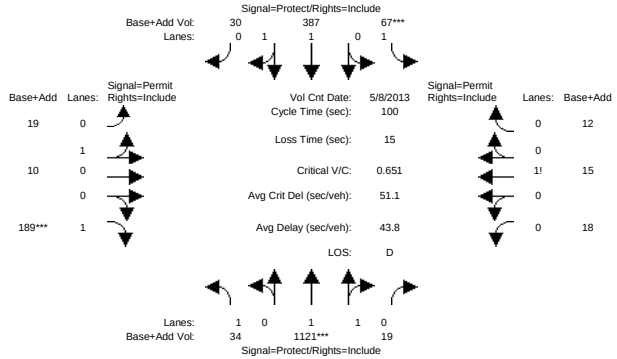
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	36	36	17	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	34	1072	19	67	286	15	13	10	55	18	15	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	1072	19	67	286	15	13	10	55	18	15	12
Added Vol:	0	49	0	0	101	15	6	0	134	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	1121	19	67	387	30	19	10	189	18	15	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	36	1180	20	71	407	32	20	11	199	19	16	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1180	20	71	407	32	20	11	199	19	16	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	1180	20	71	407	32	20	11	199	19	16	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.71	0.73	0.69	0.73	0.75	0.74
Lanes:	1.00	1.96	0.04	1.00	1.86	0.14	0.66	0.34	1.00	0.40	0.33	0.27
Final Sat.:	1539	3315	56	1539	2825	219	895	471	1313	563	469	375
Capacity Analysis Module:												
Vol/Sat:	0.02	0.36	0.36	0.05	0.14	0.14	0.02	0.02	0.15	0.03	0.03	0.03
Crit Moves:		****			****				****			
Green/Cycle:	0.15	0.36	0.36	0.17	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.15	0.99	0.99	0.27	0.38	0.38	0.07	0.07	0.47	0.11	0.11	0.11
Uniform Del:	37.0	31.8	31.8	36.1	22.5	22.5	23.6	23.6	27.2	23.9	23.9	23.9
IncremntDel:	1.4	23.3	23.3	2.5	0.9	0.9	0.3	0.3	3.8	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	55.1	55.1	38.6	23.4	23.4	24.0	24.0	31.0	24.4	24.4	24.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	55.1	55.1	38.6	23.4	23.4	24.0	24.0	31.0	24.4	24.4	24.4
LOS by Move:	D	E	E	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	21	19	2	5	5	1	1	5	1	1	1

Note: Queue reported is the number of cars per lane.

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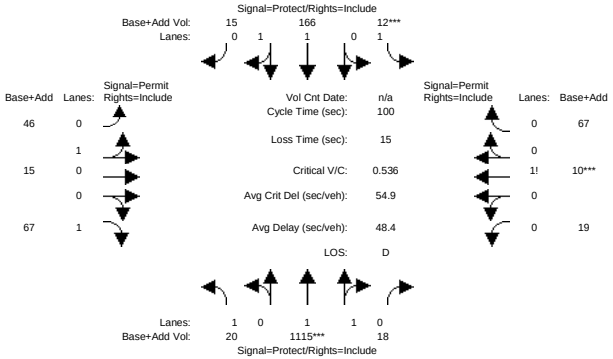
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	16	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	794	18	12	154	13	9	15	56	19	10	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	794	18	12	154	13	9	15	56	19	10	67
Added Vol:	0	321	0	0	12	2	37	0	11	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1115	18	12	166	15	46	15	67	19	10	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	1174	19	13	175	16	48	16	71	20	11	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1174	19	13	175	16	48	16	71	20	11	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1174	19	13	175	16	48	16	71	20	11	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.80	0.79	0.61	0.65	0.65	0.72	0.73	0.67
Lanes:	1.00	1.97	0.03	1.00	1.83	0.17	0.77	0.23	1.00	0.19	0.10	0.71
Final Sat.:	1539	3173	51	1539	2787	252	887	289	1226	259	136	912
Capacity Analysis Module:												
Vol/Sat:	0.01	0.37	0.37	0.01	0.06	0.06	0.05	0.05	0.06	0.08	0.08	0.08
Crit Moves:		****			****						****	
Green/Cycle:	0.15	0.37	0.37	0.16	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.09	1.00	1.00	0.05	0.17	0.17	0.17	0.17	0.18	0.24	0.24	0.24
Uniform Del:	36.6	31.5	31.5	35.6	20.5	20.5	24.5	24.5	24.5	25.1	25.1	25.1
IncremntDel:	0.8	26.0	26.0	0.4	0.3	0.3	1.0	1.0	1.0	1.4	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.4	57.5	57.5	36.0	20.8	20.8	25.4	25.4	25.5	26.4	26.4	26.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	57.5	57.5	36.0	20.8	20.8	25.4	25.4	25.5	26.4	26.4	26.4
LOS by Move:	D	E	E	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	21	20	0	2	2	1	1	2	2	3	2

Note: Queue reported is the number of cars per lane.

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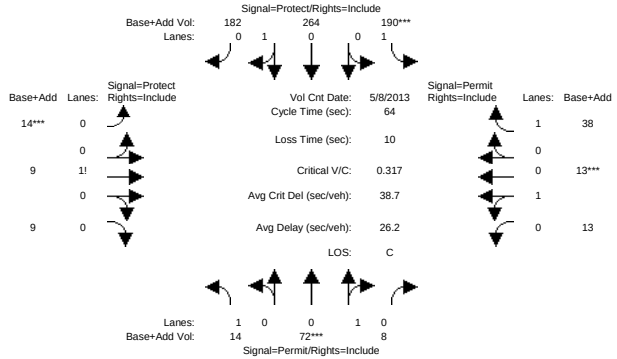
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	21	21	11	32	0	12	22	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	14	60	6	56	129	12	12	5	9	6	6	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	60	6	56	129	12	12	5	9	6	6	38
Added Vol:	0	12	2	134	135	170	2	4	0	7	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	72	8	190	264	182	14	9	9	13	13	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	16	85	9	224	311	214	16	11	11	15	15	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	85	9	224	311	214	16	11	11	15	15	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	85	9	224	311	214	16	11	11	15	15	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.19	0.67	0.67	0.81	0.80	0.78	0.70	0.70	0.69	0.80	0.83	0.68
Lanes:	1.00	0.90	0.10	1.00	0.59	0.41	0.43	0.28	0.29	0.51	0.49	1.00
Final Sat.:	361	1148	128	1539	893	616	581	373	373	772	772	1286
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.15	0.35	0.35	0.03	0.03	0.03	0.02	0.02	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.17	0.50	0.50	0.19	0.34	0.34	0.16	0.16	0.16
Volume/Cap:	0.14	0.23	0.23	0.85	0.70	0.70	0.15	0.08	0.08	0.13	0.13	0.22
Uniform Del:	15.1	15.6	15.6	25.7	12.3	12.3	21.7	14.2	14.2	23.2	23.2	23.6
IncremntDel:	2.4	1.2	1.2	26.9	5.3	5.3	1.3	0.4	0.4	1.1	1.1	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.6	16.8	16.8	52.5	17.5	17.5	23.0	14.5	14.5	24.3	24.3	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.6	16.8	16.8	52.5	17.5	17.5	23.0	14.5	14.5	24.3	24.3	26.1
LOS by Move:	B	B	B	D	B	B	C	B	B	C	C	C
HCM2kAvgQ:	0	2	1	5	8	8	0	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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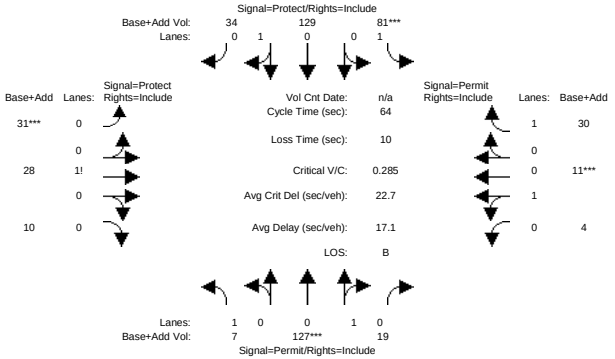
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	21	21	21	14	35	35	9	19	19	10	10	10
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	7	57	4	70	110	10	19	6	10	3	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	57	4	70	110	10	19	6	10	3	10	30
Added Vol:	0	70	15	11	19	24	12	22	0	1	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	127	19	81	129	34	31	28	10	4	11	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	7	134	20	85	136	36	33	29	11	4	12	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	134	20	85	136	36	33	29	11	4	12	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	134	20	85	136	36	33	29	11	4	12	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.41	0.67	0.64	0.81	0.83	0.79	0.72	0.72	0.68	0.78	0.84	0.65
Lanes:	1.00	0.86	0.14	1.00	0.78	0.22	0.45	0.40	0.15	0.28	0.72	1.00
Final Sat.:	773	1100	165	1539	1231	325	606	547	195	417	1147	1227
Capacity Analysis Module:												
Vol/Sat:	0.01	0.12	0.12	0.06	0.11	0.11	0.05	0.05	0.05	0.01	0.01	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.03	0.37	0.37	0.25	0.20	0.20	0.38	0.18	0.18	0.06	0.06	0.16
Uniform Del:	14.6	16.4	16.4	20.7	7.4	7.4	25.0	16.7	16.7	23.0	23.0	23.4
IncremntDel:	0.2	2.5	2.5	1.8	0.5	0.5	5.8	1.0	1.0	0.5	0.5	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.8	19.0	19.0	22.5	7.9	7.9	30.8	17.7	17.7	23.5	23.5	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	19.0	19.0	22.5	7.9	7.9	30.8	17.7	17.7	23.5	23.5	25.2
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	3	3	1	2	2	1	1	0	0	0	1

Note: Queue reported is the number of cars per lane.

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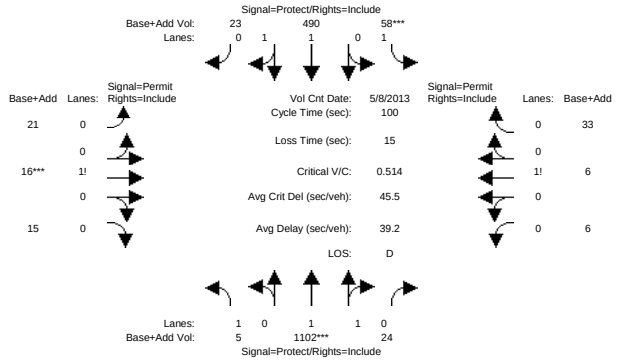
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	5	1063	24	58	265	12	10	16	15	6	6	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1063	24	58	265	12	10	16	15	6	6	33
Added Vol:	0	39	0	0	225	11	11	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1102	24	58	490	23	21	16	15	6	6	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	5	1160	25	61	516	24	22	17	16	6	6	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1160	25	61	516	24	22	17	16	6	6	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1160	25	61	516	24	22	17	16	6	6	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.64	0.65	0.64	0.75	0.75	0.73
Lanes:	1.00	1.95	0.05	1.00	1.91	0.09	0.41	0.30	0.29	0.13	0.13	0.74
Final Sat.:	1539	3298	72	1539	2920	137	490	374	350	185	185	1019
Capacity Analysis Module:												
Vol/Sat:	0.00	0.35	0.35	0.04	0.18	0.18	0.05	0.05	0.05	0.03	0.03	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.02	0.95	0.95	0.26	0.48	0.48	0.14	0.14	0.14	0.10	0.10	0.10
Uniform Del:	36.2	30.6	30.6	37.6	24.1	24.1	23.5	23.5	23.5	23.2	23.2	23.2
IncremntDel:	0.2	16.1	16.1	2.8	1.4	1.4	0.7	0.7	0.7	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.4	46.7	46.7	40.4	25.5	25.5	24.2	24.2	24.2	23.7	23.7	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.4	46.7	46.7	40.4	25.5	25.5	24.2	24.2	24.2	23.7	23.7	23.7
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	24	22	2	7	7	1	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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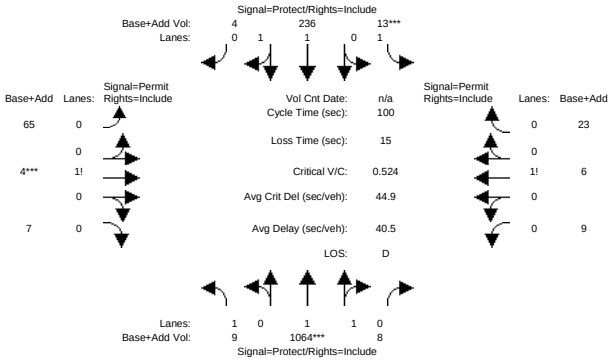
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	9	804	8	13	214	2	5	4	7	9	6	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	804	8	13	214	2	5	4	7	9	6	23
Added Vol:	0	260	0	0	22	2	60	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	1064	8	13	236	4	65	4	7	9	6	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	1120	8	14	248	4	68	4	7	9	6	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1120	8	14	248	4	68	4	7	9	6	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1120	8	14	248	4	68	4	7	9	6	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.80	0.47	0.56	0.55	0.71	0.74	0.66
Lanes:	1.00	1.98	0.02	1.00	1.97	0.03	0.87	0.05	0.08	0.23	0.14	0.63
Final Sat.:	1539	3204	24	1539	3018	51	785	48	85	307	204	784
Capacity Analysis Module:												
Vol/Sat:	0.01	0.35	0.35	0.01	0.08	0.08	0.09	0.09	0.09	0.03	0.03	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.04	0.94	0.94	0.06	0.22	0.22	0.26	0.26	0.26	0.09	0.09	0.09
Uniform Del:	36.3	30.5	30.5	36.4	21.6	21.6	24.6	24.6	24.6	23.2	23.2	23.2
IncremntDel:	0.3	15.8	15.8	0.5	0.5	0.5	2.1	2.1	2.1	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.7	46.3	46.3	36.9	22.1	22.1	26.7	26.7	26.7	23.6	23.6	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	46.3	46.3	36.9	22.1	22.1	26.7	26.7	26.7	23.6	23.6	23.6
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	23	22	0	3	3	2	2	2	1	1	1

Note: Queue reported is the number of cars per lane.

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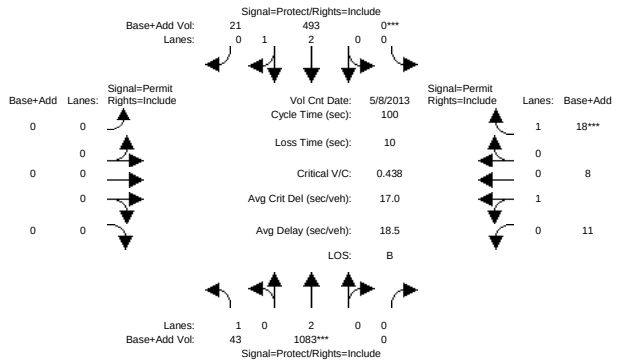
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	5	1045	0	0	283	11	0	0	0	11	8	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1045	0	0	283	11	0	0	0	11	8	18
Added Vol:	38	38	0	0	210	10	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	1083	0	0	493	21	0	0	0	11	8	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	46	1163	0	0	530	23	0	0	0	12	9	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	1163	0	0	530	23	0	0	0	12	9	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	1163	0	0	530	23	0	0	0	12	9	19
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.79	0.81	0.62
Lanes:	1.00	2.00	0.00	0.00	2.88	0.12	0.00	0.00	0.00	0.59	0.41	1.00
Final Sat.:	1539	3079	0	0	4217	180	0	0	0	882	642	1179
Capacity Analysis Module:												
Vol/Sat:	0.03	0.38	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.01	0.01	0.02
Crit Moves:		****		****								****
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.20	0.66	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.04	0.04	0.05
Uniform Del:	36.9	14.9	0.0	0.0	19.5	19.5	0.0	0.0	0.0	22.7	22.7	22.8
IncremntDel:	1.8	2.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	38.8	16.8	0.0	0.0	19.9	19.9	0.0	0.0	0.0	22.9	22.9	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.8	16.8	0.0	0.0	19.9	19.9	0.0	0.0	0.0	22.9	22.9	23.1
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	13	0	0	4	4	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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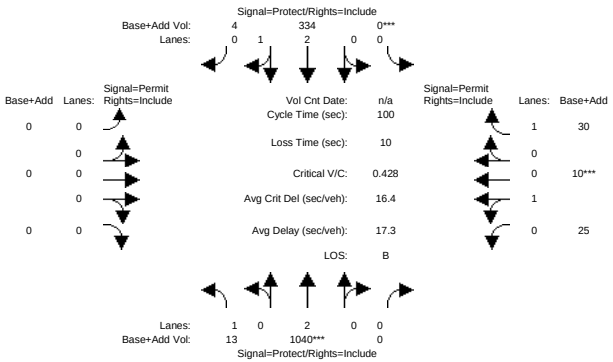
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	6	784	0	0	315	2	0	0	0	25	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	784	0	0	315	2	0	0	0	25	10	30
Added Vol:	7	256	0	0	19	2	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	1040	0	0	334	4	0	0	0	25	10	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	14	1106	0	0	355	4	0	0	0	27	11	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	1106	0	0	355	4	0	0	0	27	11	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	1106	0	0	355	4	0	0	0	27	11	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.75	0.80	0.60
Lanes:	1.00	2.00	0.00	0.00	2.96	0.04	0.00	0.00	0.00	0.73	0.27	1.00
Final Sat.:	1539	3079	0	0	4363	52	0	0	0	1039	416	1147
Capacity Analysis Module:												
Vol/Sat:	0.01	0.36	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.03	0.03	0.03
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.06	0.63	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.08	0.08	0.08
Uniform Del:	36.2	14.4	0.0	0.0	18.5	18.5	0.0	0.0	0.0	23.0	23.0	23.1
IncremntDel:	0.5	1.7	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	36.6	16.2	0.0	0.0	18.8	18.8	0.0	0.0	0.0	23.3	23.3	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	16.2	0.0	0.0	18.8	18.8	0.0	0.0	0.0	23.3	23.3	23.5
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	0	12	0	0	3	3	0	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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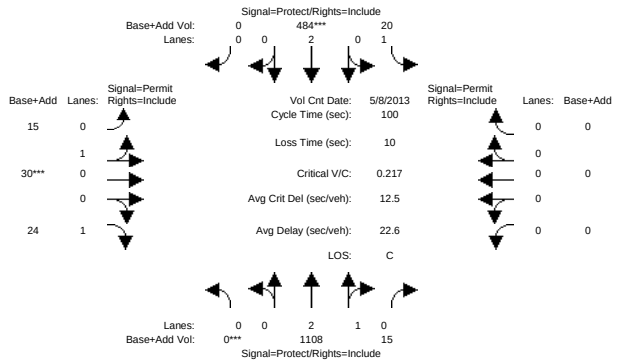
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	0	1045	15	20	274	0	2	30	18	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1045	15	20	274	0	2	30	18	0	0	0
Added Vol:	0	63	0	0	210	0	13	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1108	15	20	484	0	15	30	24	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1164	16	21	508	0	16	32	25	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1164	16	21	508	0	16	32	25	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1164	16	21	508	0	16	32	25	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.81	0.82	0.62	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.34	0.66	1.00	0.00	0.00	0.00
Final Sat.:	0	4356	59	1539	3079	0	520	1039	1186	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.01	0.17	0.00	0.03	0.03	0.02	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.68	0.68	0.08	0.29	0.00	0.09	0.09	0.06	0.00	0.00	0.00
Uniform Del:	0.0	24.9	24.9	34.5	11.1	0.0	23.1	23.1	22.9	0.0	0.0	0.0
IncremntDel:	0.0	2.1	2.1	0.6	0.4	0.0	0.4	0.4	0.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	27.0	27.0	35.1	11.5	0.0	23.5	23.5	23.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.0	27.0	35.1	11.5	0.0	23.5	23.5	23.2	0.0	0.0	0.0
LOS by Move:	A	C	C	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	12	12	1	4	0	1	1	1	0	0	0

Note: Queue reported is the number of cars per lane.

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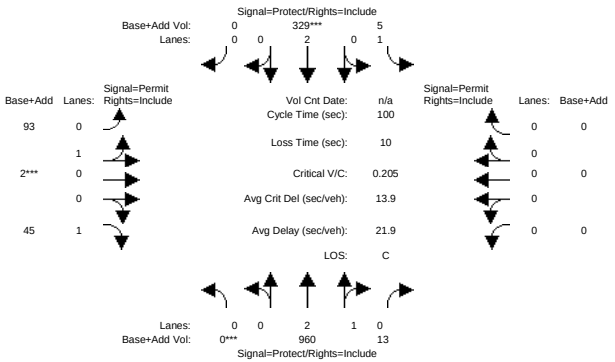
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	772	13	5	310	0	18	2	9	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	772	13	5	310	0	18	2	9	0	0	0
Added Vol:	0	188	0	0	19	0	75	0	36	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	960	13	5	329	0	93	2	45	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1011	14	5	346	0	98	2	47	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1011	14	5	346	0	98	2	47	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1011	14	5	346	0	98	2	47	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.73	0.77	0.63	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	4356	59	1539	3079	0	1365	29	1188	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.23	0.00	0.11	0.00	0.07	0.07	0.04	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.59	0.59	0.02	0.20	0.00	0.22	0.22	0.12	0.00	0.00	0.00
Uniform Del:	0.0	23.8	23.8	34.2	10.4	0.0	24.2	24.2	23.4	0.0	0.0	0.0
IncremntDel:	0.0	1.5	1.5	0.1	0.3	0.0	1.1	1.1	0.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	25.2	25.2	34.3	10.7	0.0	25.3	25.3	24.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	25.2	25.2	34.3	10.7	0.0	25.3	25.3	24.0	0.0	0.0	0.0
LOS by Move:	A	C	C	C	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	10	10	0	3	0	2	2	1	0	0	0

Note: Queue reported is the number of cars per lane.

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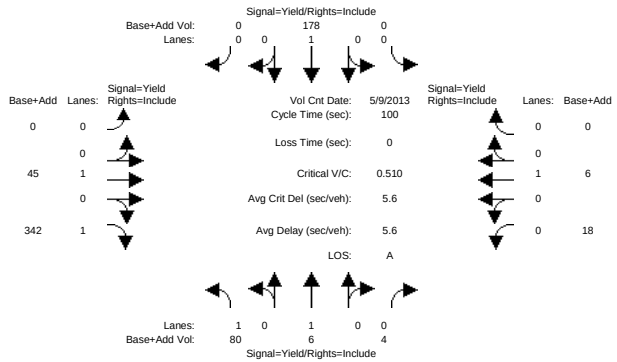
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
Existing Plus Project AM

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	17	0	0	0	0	0	0	0	17	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	0	0	0	0	0	0	17	0	0	0
Added Vol:	63	6	4	0	178	0	0	45	325	18	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	6	4	0	178	0	0	45	342	18	6	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	111	8	6	0	247	0	0	63	475	25	8	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	8	6	0	247	0	0	63	475	25	8	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	8	6	0	247	0	0	63	475	25	8	0
PCE Module:												
AutoPCE:	111	8	6	0	247	0	0	63	475	25	8	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	111	8	6	0	247	0	0	63	475	25	8	0

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	63	144	272	119
MaxVolume:	1166	1122	1053	1136
PedVolume:	0	0	0	0
AdjMaxVol:	1166	1122	1053	1136
ApproachVol:	125	247	538	33
ApproachV/C:	0.11	0.22	0.51	0.03
ApproachDel:	3.5	4.1	6.9	3.3
ApproachLOS:	A	A	A	A
Queue:	0.4	0.8	3.0	0.1

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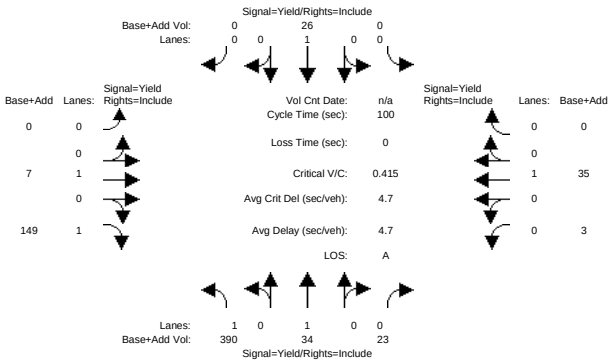
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
Existing Plus Project PM

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	32	0	1	0	0	0	0	0	103	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	0	1	0	0	0	0	0	103	0	0	0
Added Vol:	358	34	22	0	26	0	0	7	46	3	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	390	34	23	0	26	0	0	7	149	3	35	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	433	38	26	0	29	0	0	8	166	3	39	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	433	38	26	0	29	0	0	8	166	3	39	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	433	38	26	0	29	0	0	8	166	3	39	0
PCE Module:												
AutoPCE:	433	38	26	0	29	0	0	8	166	3	39	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	433	38	26	0	29	0	0	8	166	3	39	0

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	8	476	32	471
MaxVolume:	1196	943	1183	946
PedVolume:	0	0	0	0
AdjMaxVol:	1196	943	1183	946
ApproachVol:	497	29	173	42
ApproachV/C:	0.42	0.03	0.15	0.04
ApproachDel:	5.1	3.9	3.6	4.0
ApproachLOS:	A	A	A	A
Queue:	2.1	0.1	0.5	0.1

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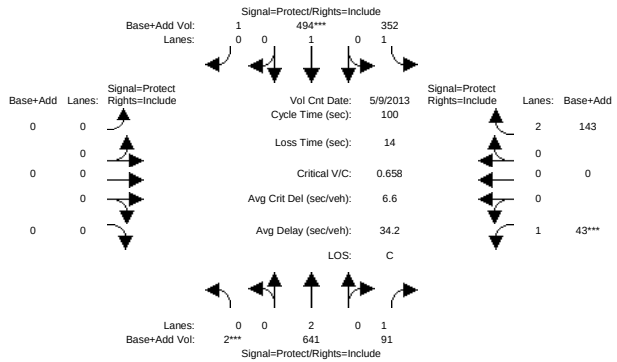
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	2	620	30	44	332	1	0	0	0	29	0	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	620	30	44	332	1	0	0	0	29	0	88
Added Vol:	0	21	61	308	162	0	0	0	0	14	0	55
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	641	91	352	494	1	0	0	0	43	0	143
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	2	669	95	367	516	1	0	0	0	45	0	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	669	95	367	516	1	0	0	0	45	0	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	669	95	367	516	1	0	0	0	45	0	149
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.57	0.81	0.85	0.85	1.00	1.00	1.00	0.81	1.00	0.53
Lanes:	0.01	1.99	1.00	1.00	0.99	0.01	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	10	3069	1079	1539	1617	3	0	0	0	1539	0	2000
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.09	0.24	0.32	0.32	0.00	0.00	0.00	0.03	0.00	0.07
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.37	0.37	0.24	0.61	0.61	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	xxxx	0.59	0.24	0.98	0.52	0.52	0.00	0.00	0.00	0.12	0.00	0.30
Uniform Del:	0.0	25.6	22.0	37.6	11.2	11.2	0.0	0.0	0.0	29.0	0.0	30.4
IncremntDel:	0.0	2.3	1.4	42.1	2.0	2.0	0.0	0.0	0.0	0.6	0.0	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	27.9	23.4	79.7	13.1	13.1	0.0	0.0	0.0	29.6	0.0	31.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.9	23.4	79.7	13.1	13.1	0.0	0.0	0.0	29.6	0.0	31.9
LOS by Move:	A	C	C	E	B	B	A	A	A	C	A	C
HCM2kAvgQ:	10	9	2	17	9	9	0	0	0	1	0	2

Note: Queue reported is the number of cars per lane.

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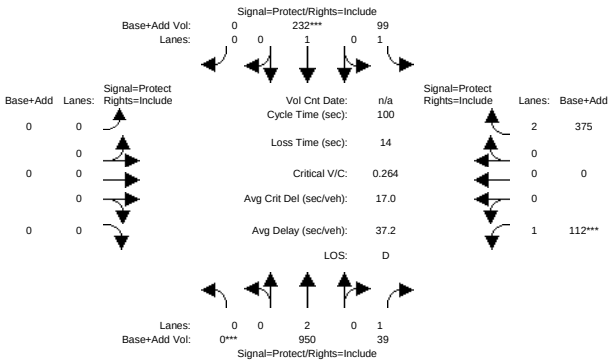
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	786	29	57	215	0	0	0	0	26	0	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	786	29	57	215	0	0	0	0	26	0	67
Added Vol:	0	164	10	42	17	0	0	0	0	86	0	308
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	950	39	99	232	0	0	0	0	112	0	375
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1000	41	104	244	0	0	0	0	118	0	395
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1000	41	104	244	0	0	0	0	118	0	395
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1000	41	104	244	0	0	0	0	118	0	395
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.41	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.42
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	784	1539	1620	0	0	0	0	1539	0	1580
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.05	0.07	0.15	0.00	0.00	0.00	0.00	0.08	0.00	0.25
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.44	0.44	0.17	0.61	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.74	0.12	0.40	0.25	0.00	0.00	0.00	0.00	0.31	0.00	1.00
Uniform Del:	0.0	23.3	16.6	36.9	9.0	0.0	0.0	0.0	0.0	30.5	0.0	37.5
IncremntDel:	0.0	3.7	0.7	4.4	0.6	0.0	0.0	0.0	0.0	2.1	0.0	45.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	27.0	17.3	41.3	9.6	0.0	0.0	0.0	0.0	32.5	0.0	82.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.0	17.3	41.3	9.6	0.0	0.0	0.0	0.0	32.5	0.0	82.7
LOS by Move:	A	C	B	D	A	A	A	A	A	C	A	F
HCM2kAvgQ:	0	15	1	3	3	0	0	0	0	3	0	12

Note: Queue reported is the number of cars per lane.

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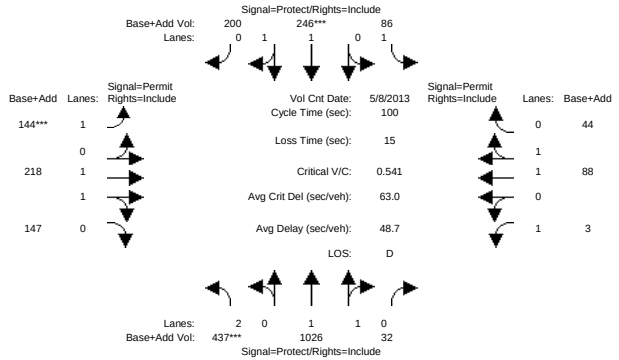
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	297	986	10	18	206	73	124	62	125	2	80	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	297	986	10	18	206	73	124	62	125	2	80	40
Added Vol:	140	40	22	68	40	127	20	156	22	1	8	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	437	1026	32	86	246	200	144	218	147	3	88	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	454	1067	33	89	256	208	150	227	153	3	91	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	454	1067	33	89	256	208	150	227	153	3	91	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	454	1067	33	89	256	208	150	227	153	3	91	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.76	0.74	0.54	0.71	0.70	0.40	0.72	0.71
Lanes:	2.00	1.94	0.06	1.00	1.09	0.91	1.00	1.19	0.81	1.00	1.33	0.67
Final Sat.:	2987	2974	93	1539	1571	1277	1032	1609	1085	759	1819	910
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.36	0.06	0.16	0.16	0.15	0.14	0.14	0.00	0.05	0.05
Crit Moves:	****				****		****					
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	1.09	0.94	0.94	0.48	0.45	0.45	0.41	0.40	0.40	0.01	0.14	0.14
Uniform Del:	43.0	30.0	30.0	41.1	24.5	24.5	24.7	24.6	24.6	21.2	22.2	22.2
IncremntDel:	69.3	15.9	15.9	8.8	1.4	1.4	3.5	1.3	1.3	0.1	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	112.3	45.9	45.9	49.9	25.9	25.9	28.2	25.9	25.9	21.3	22.6	22.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	112.3	45.9	45.9	49.9	25.9	25.9	28.2	25.9	25.9	21.3	22.6	22.6
LOS by Move:	F	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	9	17	17	3	6	6	3	5	5	0	2	2

Note: Queue reported is the number of cars per lane.

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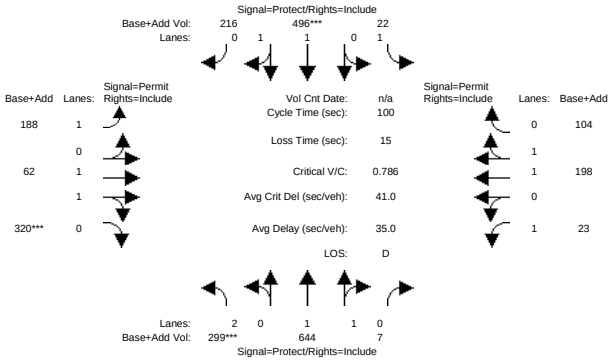
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	256	624	5	18	348	146	78	52	257	3	71	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	256	624	5	18	348	146	78	52	257	3	71	47
Added Vol:	43	20	2	4	148	70	110	10	63	20	127	57
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	299	644	7	22	496	216	188	62	320	23	198	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	322	692	8	24	533	232	202	67	344	25	213	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	322	692	8	24	533	232	202	67	344	25	213	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	322	692	8	24	533	232	202	67	344	25	213	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.77	0.75	0.42	0.66	0.61	0.37	0.72	0.70
Lanes:	2.00	1.98	0.02	1.00	1.38	0.62	1.00	1.00	1.00	1.00	1.30	0.70
Final Sat.:	2987	3040	33	1539	2030	884	802	1261	1157	699	1773	931
Capacity Analysis Module:												
Vol/Sat:	0.11	0.23	0.23	0.02	0.26	0.26	0.25	0.05	0.30	0.04	0.12	0.12
Crit Moves:	****				****				****			
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.77	0.60	0.60	0.13	0.73	0.73	0.72	0.15	0.85	0.10	0.34	0.34
Uniform Del:	41.4	24.9	24.9	39.3	27.8	27.8	28.2	22.3	30.1	21.9	24.0	24.0
IncremntDel:	12.8	2.3	2.3	1.4	4.5	4.5	14.7	0.1	16.8	0.8	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.2	27.2	27.2	40.8	32.3	32.3	43.0	22.4	46.9	22.7	25.0	25.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.2	27.2	27.2	40.8	32.3	32.3	43.0	22.4	46.9	22.7	25.0	25.0
LOS by Move:	D	C	C	D	C	C	D	C	D	C	C	C
HCM2kAvgQ:	5	9	9	1	12	12	6	1	12	1	4	4

Note: Queue reported is the number of cars per lane.

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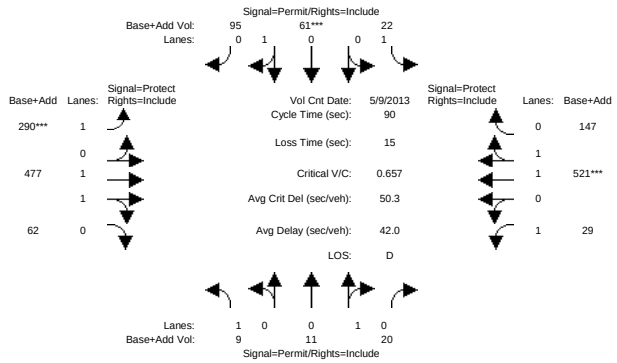
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	30	30	30	17	30	30	15	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	4	2	17	22	3	86	106	283	22	21	323	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	2	17	22	3	86	106	283	22	21	323	78
Added Vol:	5	9	3	0	58	9	184	194	40	8	198	69
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	11	20	22	61	95	290	477	62	29	521	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	12	21	23	64	100	305	501	65	30	547	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	12	21	23	64	100	305	501	65	30	547	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	12	21	23	64	100	305	501	65	30	547	154
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.51	0.77	0.75	0.60	0.78	0.75	0.81	0.75	0.74	0.81	0.78	0.77
Lanes:	1.00	0.35	0.65	1.00	0.38	0.62	1.00	1.77	0.23	1.00	1.55	0.45
Final Sat.:	977	509	926	1149	566	882	1539	2509	326	1539	2313	653
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.02	0.02	0.11	0.11	0.20	0.20	0.20	0.02	0.24	0.24
Crit Moves:					****		****				****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.19	0.33	0.33	0.17	0.31	0.31
Volume/Cap:	0.03	0.07	0.07	0.06	0.34	0.34	1.05	0.60	0.60	0.12	0.76	0.76
Uniform Del:	20.2	20.5	20.5	20.4	22.6	22.6	36.5	25.0	25.0	31.9	28.0	28.0
IncremntDel:	0.2	0.3	0.3	0.3	1.9	1.9	65.8	2.8	2.8	0.9	5.9	5.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.4	20.7	20.7	20.7	24.5	24.5	102.3	27.8	27.8	32.8	33.8	33.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.4	20.7	20.7	20.7	24.5	24.5	102.3	27.8	27.8	32.8	33.8	33.8
LOS by Move:	C	C	C	C	C	C	F	C	C	C	C	C
HCM2kAvgQ:	0	1	1	0	4	4	12	7	7	1	10	10

Note: Queue reported is the number of cars per lane.

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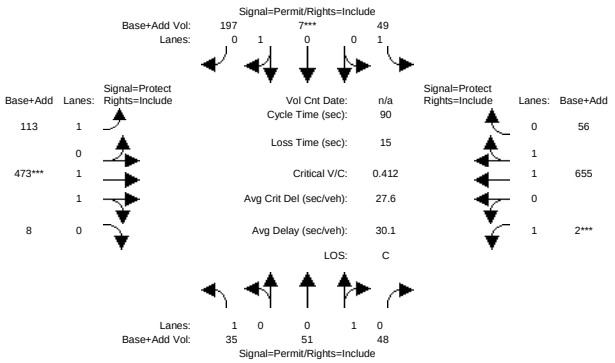
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	30	30	30	15	50	50	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	8	1	35	46	1	142	82	306	4	1	428	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	1	35	46	1	142	82	306	4	1	428	44
Added Vol:	27	50	13	3	6	55	31	167	4	1	227	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	51	48	49	7	197	113	473	8	2	655	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	38	56	53	54	8	216	124	520	9	2	720	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	56	53	54	8	216	124	520	9	2	720	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	56	53	54	8	216	124	520	9	2	720	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.40	0.79	0.77	0.55	0.73	0.69	0.81	0.76	0.76	0.81	0.80	0.80
Lanes:	1.00	0.51	0.49	1.00	0.03	0.97	1.00	1.97	0.03	1.00	1.84	0.16
Final Sat.:	751	764	719	1050	45	1269	1539	2830	48	1539	2801	239
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.05	0.17	0.17	0.08	0.18	0.18	0.00	0.26	0.26
Crit Moves:					****			****			****	
Green/Cycle:	0.27	0.27	0.27	0.27	0.27	0.27	0.20	0.45	0.45	0.14	0.39	0.39
Volume/Cap:	0.19	0.27	0.27	0.19	0.63	0.63	0.41	0.40	0.40	0.01	0.65	0.65
Uniform Del:	30.7	31.4	31.4	30.7	35.1	35.1	38.6	20.0	20.0	41.1	27.2	27.2
IncremntDel:	2.0	1.6	1.6	1.4	8.0	8.0	4.1	0.9	0.9	0.1	2.8	2.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.7	33.0	33.0	32.1	43.1	43.1	42.6	21.0	21.0	41.2	30.0	30.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.7	33.0	33.0	32.1	43.1	43.1	42.6	21.0	21.0	41.2	30.0	30.0
LOS by Move:	C	C	C	C	D	D	D	C	C	D	C	C
HCM2kAvgQ:	1	3	3	1	8	8	4	6	6	0	12	12

Note: Queue reported is the number of cars per lane.

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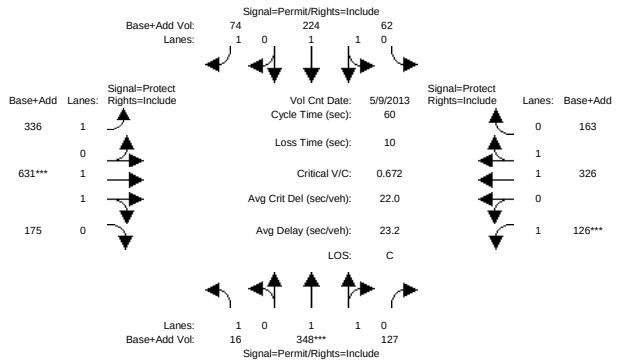
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #36: 16th/Owens




```
Street Name:            Owens St                        16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   15   15     15   15   15     20   25   25     10   15   15
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:      0    0    0     53    1   70    219  348    0     5  299  100
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   0    0    0     53    1   70    219  348    0     5  299  100
Added Vol:    16  348  127      9  223    4    117  283  175   121   27   63
PasserByVol:   0    0    0      0    0    0      0    0    0     0    0    0
Initial Fut:  16  348  127     62  224   74    336  631  175   126  326  163
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:   17  366  134     65  236   78    354  664  184   133  343  172
Reduct Vol:    0    0    0      0    0    0      0    0    0     0    0    0
Reduced Vol:  17  366  134     65  236   78    354  664  184   133  343  172
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  17  366  134     65  236   78    354  664  184   133  343  172
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900   1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.43 0.78 0.77   0.59 0.59 0.69  0.81 0.73 0.73  0.81 0.77 0.76
Lanes:       1.00 1.46 0.54   0.44 1.56 1.00  1.00 1.56 0.44  1.00 1.33 0.67
Final Sat.:   826 2158  788    484 1749 1315  1539 2181  605  1539 1938  969
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.17 0.17   0.13 0.13 0.06  0.23 0.30 0.30  0.09 0.18 0.18
Crit Moves:       ****                          ****           ****
Green/Cycle: 0.25 0.25 0.25   0.25 0.25 0.25  0.33 0.42 0.42  0.17 0.25 0.25
Volume/Cap:  0.08 0.68 0.68   0.54 0.54 0.24  0.69 0.73 0.73  0.52 0.71 0.71
Uniform Del: 17.2 20.3 20.3   19.5 19.5 17.9  17.3 14.7 14.7  22.8 20.5 20.5
IncremntDel:  0.8  5.0  5.0    3.7  3.7  1.7   7.4  4.1  4.1   7.3  5.8  5.8
InitQueuDel:  0.0  0.0  0.0    0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   18.0 25.3 25.3   23.2 23.2 19.6  24.7 18.7 18.7  30.1 26.3 26.3
User DelAdj: 1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  18.0 25.3 25.3   23.2 23.2 19.6  24.7 18.7 18.7  30.1 26.3 26.3
LOS by Move:    B    C    C      C    C    B     C    B    B     C    C    C
HCM2kAvgQ:      0    6    6      3    3    1     5    7    7     2    5    5
Note: Queue reported is the number of cars per lane.
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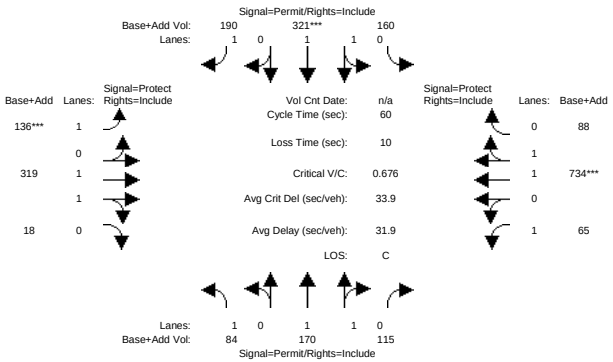
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #36: 16th/Owens




```
Street Name:            Owens St                        16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   15   15     15   15   15     10   20   20     20   10   20   20
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    1    102    0  167    117  289    0     0  501   77
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   0    0    1    102    0  167    117  289    0     0  501   77
Added Vol:    84  170  114     58  321   23     19   30   18    65  233   11
PasserByVol:   0    0    0      0    0    0      0    0    0     0    0    0
Initial Fut:  84  170  115    160  321  190    136  319   18    65  734   88
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95   0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:   88  179  121    168  338  200    143  336   19    68  773   93
Reduct Vol:    0    0    0      0    0    0      0    0    0     0    0    0
Reduced Vol:  88  179  121    168  338  200    143  336   19    68  773   93
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  88  179  121    168  338  200    143  336   19    68  773   93
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900   1900 1900 1900  1900 1900 1900
Adjustment:  0.29 0.76 0.73  0.56 0.57 0.65   0.81 0.75 0.75  0.81 0.80 0.79
Lanes:       1.00 1.17 0.83  0.67 1.33 1.00   1.00 1.89 0.11  1.00 1.78 0.22
Final Sat.:   549 1696 1147   714 1432 1241   1539 2710  153  1539 2703  324
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.11 0.11  0.24 0.24 0.16   0.09 0.12 0.12  0.04 0.29 0.29
Crit Moves:                       ****           ****           ****
Green/Cycle: 0.35 0.35 0.35  0.35 0.35 0.35   0.14 0.37 0.37  0.19 0.42 0.42
Volume/Cap:  0.46 0.30 0.30  0.68 0.68 0.46   0.68 0.33 0.33  0.24 0.68 0.68
Uniform Del: 27.8 26.1 26.1  30.5 30.5 27.8   45.1 24.6 24.6  38.1 25.7 25.7
IncremntDel:  7.8  0.8  0.8   4.9  4.9  3.5   16.0  0.8  0.8   1.9  2.9  2.9
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0    0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   35.6 26.8 26.8  35.4 35.4 31.3   61.1 25.5 25.5  40.0 28.6 28.6
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00   1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  35.6 26.8 26.8  35.4 35.4 31.3   61.1 25.5 25.5  40.0 28.6 28.6
LOS by Move:    D    C    C     D    D    C     E    C    C     D    C    C
HCM2kAvgQ:      3    4    4     9    9    6     5    4    4     2   13   13
Note: Queue reported is the number of cars per lane.
```

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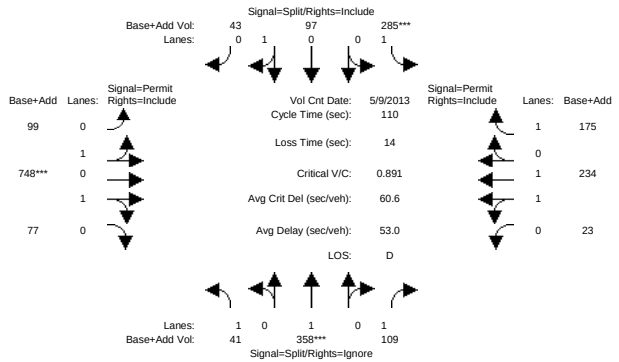
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	41	358	109	123	97	34	38	336	77	23	208	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	358	109	123	97	34	38	336	77	23	208	154
Added Vol:	0	0	0	162	0	9	61	412	0	0	26	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	358	109	285	97	43	99	748	77	23	234	175
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	42	365	0	291	99	44	101	763	79	23	239	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	365	0	291	99	44	101	763	79	23	239	179
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	365	0	291	99	44	101	763	79	23	239	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.71	0.70	0.64	0.64	0.64	0.64	0.64	0.68
Lanes:	1.00	1.00	1.00	1.00	0.69	0.31	0.21	1.62	0.17	0.18	1.82	1.00
Final Sat.:	1539	1620	1900	1539	931	413	261	1970	203	218	2214	1297
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.00	0.19	0.11	0.11	0.39	0.39	0.39	0.11	0.11	0.14
Crit Moves:		****		****				****				
Green/Cycle:	0.25	0.25	0.00	0.22	0.22	0.22	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.11	0.90	0.00	0.85	0.48	0.48	0.90	0.90	0.90	0.25	0.25	0.32
Uniform Del:	40.5	50.9	0.0	52.3	47.5	47.5	37.3	37.3	37.3	25.6	25.6	26.5
IncremntDel:	0.6	26.0	0.0	22.8	5.5	5.5	12.5	12.5	12.5	0.6	0.6	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.1	76.9	0.0	75.1	52.9	52.9	49.8	49.8	49.8	26.2	26.2	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.1	76.9	0.0	75.1	52.9	52.9	49.8	49.8	49.8	26.2	26.2	28.0
LOS by Move:	D	E	A	E	D	D	D	D	D	C	C	C
HCM2kAvgQ:	1	19	0	15	6	6	23	23	23	4	4	5

Note: Queue reported is the number of cars per lane.

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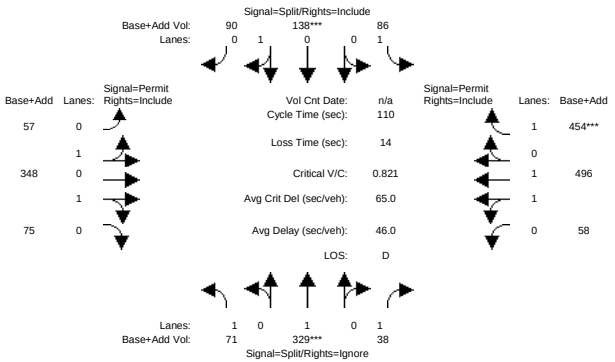
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	71	329	38	69	138	35	47	299	75	58	320	290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	329	38	69	138	35	47	299	75	58	320	290
Added Vol:	0	0	0	17	0	55	10	49	0	0	176	164
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	329	38	86	138	90	57	348	75	58	496	454
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	72	336	0	88	141	92	58	355	77	59	506	463
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	336	0	88	141	92	58	355	77	59	506	463
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	336	0	88	141	92	58	355	77	59	506	463
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.70	0.68	0.59	0.59	0.59	0.67	0.67	0.69
Lanes:	1.00	1.00	1.00	1.00	0.60	0.40	0.24	1.45	0.31	0.21	1.79	1.00
Final Sat.:	1539	1620	1900	1539	799	521	268	1635	352	267	2287	1303
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.00	0.06	0.18	0.18	0.22	0.22	0.22	0.22	0.22	0.36
Crit Moves:		****			****							****
Green/Cycle:	0.21	0.21	0.00	0.22	0.22	0.22	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	0.22	0.97	0.00	0.26	0.80	0.80	0.47	0.47	0.47	0.48	0.48	0.77
Uniform Del:	45.3	54.5	0.0	45.0	51.5	51.5	25.7	25.7	25.7	25.8	25.8	31.2
IncremntDel:	1.5	40.6	0.0	1.8	19.8	19.8	1.5	1.5	1.5	1.4	1.4	9.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.9	95.1	0.0	46.8	71.3	71.3	27.2	27.2	27.2	27.2	27.2	40.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.9	95.1	0.0	46.8	71.3	71.3	27.2	27.2	27.2	27.2	27.2	40.1
LOS by Move:	D	F	A	D	E	E	C	C	C	C	C	D
HCM2kAvgQ:	3	19	0	3	11	11	8	8	8	9	9	17

Note: Queue reported is the number of cars per lane.

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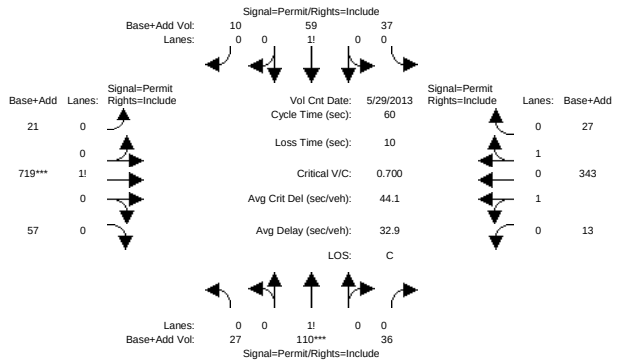
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am												
Base Vol:	27	110	16	17	59	10	21	525	57	9	322	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	110	16	17	59	10	21	525	57	9	322	25
Added Vol:	0	0	20	20	0	0	0	194	0	4	21	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	110	36	37	59	10	21	719	57	13	343	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	30	121	40	41	65	11	23	790	63	14	377	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	121	40	41	65	11	23	790	63	14	377	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	121	40	41	65	11	23	790	63	14	377	30
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.85	0.85	0.85	0.97	0.97	0.97	0.87	0.87	0.87
Lanes:	0.16	0.63	0.21	0.35	0.56	0.09	0.03	0.90	0.07	0.07	1.79	0.14
Final Sat.:	273	1111	364	564	900	153	49	1666	132	112	2951	232
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.07	0.07	0.07	0.47	0.47	0.47	0.13	0.13	0.13
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.30	0.30	0.30	0.20	0.20	0.20	1.02	1.02	1.02	0.27	0.27	0.27
Uniform Del:	13.5	13.5	13.5	13.0	13.0	13.0	16.0	16.0	16.0	9.8	9.8	9.8
IncremntDel:	0.3	0.3	0.3	0.2	0.2	0.2	34.7	34.7	34.7	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.8	13.8	13.8	13.1	13.1	13.1	50.7	50.7	50.7	9.9	9.9	9.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.8	13.8	13.8	13.1	13.1	13.1	50.7	50.7	50.7	9.9	9.9	9.9
LOS by Move:	B	B	B	B	B	B	D	D	D	A	A	A
HCM2kAvgQ:	3	3	3	2	2	2	18	18	18	3	3	3

Note: Queue reported is the number of cars per lane.

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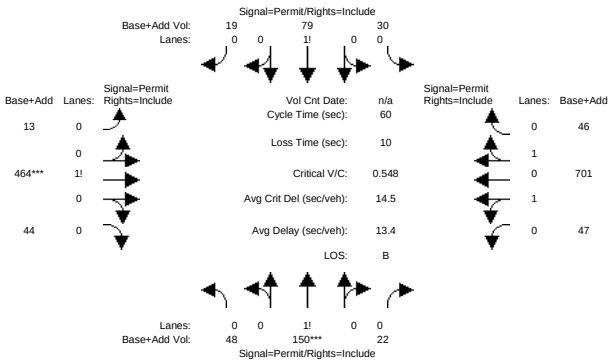
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	48	150	19	27	79	19	13	439	44	24	568	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	150	19	27	79	19	13	439	44	24	568	30
Added Vol:	0	0	3	3	0	0	0	25	0	23	133	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	150	22	30	79	19	13	464	44	47	701	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	53	165	24	33	87	21	14	510	48	52	770	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	165	24	33	87	21	14	510	48	52	770	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	165	24	33	87	21	14	510	48	52	770	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.88	0.88	0.88	0.96	0.96	0.96	0.84	0.84	0.84
Lanes:	0.22	0.68	0.10	0.23	0.62	0.15	0.02	0.90	0.08	0.12	1.76	0.12
Final Sat.:	372	1162	170	391	1030	248	45	1622	154	190	2827	185
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.08	0.08	0.08	0.31	0.31	0.31	0.27	0.27	0.27
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.39	0.39	0.39	0.23	0.23	0.23	0.67	0.67	0.67	0.58	0.58	0.58
Uniform Del:	14.0	14.0	14.0	13.1	13.1	13.1	12.4	12.4	12.4	11.7	11.7	11.7
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	2.1	2.1	2.1	0.6	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.4	14.4	14.4	13.3	13.3	13.3	14.6	14.6	14.6	12.3	12.3	12.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.4	14.4	14.4	13.3	13.3	13.3	14.6	14.6	14.6	12.3	12.3	12.3
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	2	2	2	8	8	8	7	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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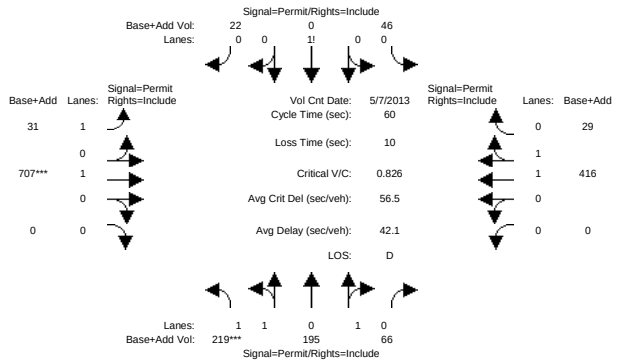
Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	219	195	42	26	0	22	31	557	0	0	398	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	219	195	42	26	0	22	31	557	0	0	398	27
Added Vol:	0	0	24	20	0	0	0	150	0	0	18	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	219	195	66	46	0	22	31	707	0	0	416	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	235	210	71	49	0	24	33	760	0	0	447	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	210	71	49	0	24	33	760	0	0	447	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	210	71	49	0	24	33	760	0	0	447	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.60	0.60	0.49	1.00	0.50	0.41	0.75	1.00	1.00	0.75	0.75
Lanes:	1.39	1.20	0.41	0.68	0.00	0.32	1.00	1.00	0.00	0.00	1.87	0.13
Final Sat.:	1546	1377	466	638	0	305	775	1418	0	0	2671	186
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.08	0.00	0.08	0.04	0.54	0.00	0.00	0.17	0.17
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.44	0.44	0.44	0.22	0.00	0.22	0.09	1.11	0.00	0.00	0.35	0.35
Uniform Del:	15.0	15.0	15.0	13.7	0.0	13.7	8.4	15.5	0.0	0.0	9.6	9.6
IncremntDel:	1.2	1.2	1.2	1.5	0.0	1.5	0.5	68.3	0.0	0.0	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	16.1	16.1	16.1	15.3	0.0	15.3	8.8	83.8	0.0	0.0	10.3	10.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.1	16.1	16.1	15.3	0.0	15.3	8.8	83.8	0.0	0.0	10.3	10.3
LOS by Move:	B	B	B	B	A	B	A	F	A	A	B	B
HCM2kAvgQ:	3	3	3	1	0	1	0	23	0	0	3	3

Note: Queue reported is the number of cars per lane.

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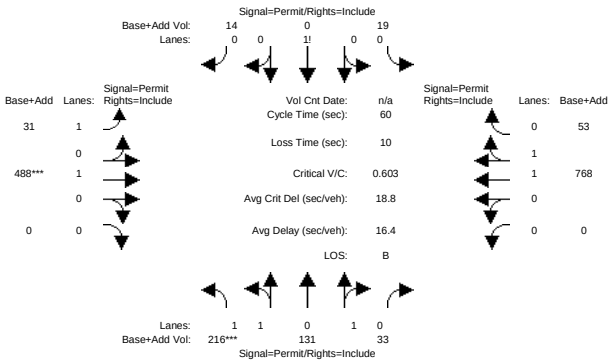
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	216	131	30	16	0	14	31	469	0	0	651	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	131	30	16	0	14	31	469	0	0	651	37
Added Vol:	0	0	3	3	0	0	0	19	0	0	117	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	131	33	19	0	14	31	488	0	0	768	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	237	144	36	21	0	15	34	536	0	0	844	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	144	36	21	0	15	34	536	0	0	844	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	144	36	21	0	15	34	536	0	0	844	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.60	0.60	0.57	1.00	0.58	0.23	0.75	1.00	1.00	0.75	0.75
Lanes:	1.73	1.01	0.26	0.58	0.00	0.42	1.00	1.00	0.00	0.00	1.87	0.13
Final Sat.:	1910	1158	292	624	0	460	429	1418	0	0	2673	184
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.03	0.00	0.03	0.08	0.38	0.00	0.00	0.32	0.32
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.36	0.36	0.36	0.10	0.00	0.10	0.16	0.78	0.00	0.00	0.65	0.65
Uniform Del:	14.5	14.5	14.5	13.1	0.0	13.1	8.7	12.9	0.0	0.0	11.7	11.7
IncremntDel:	0.8	0.8	0.8	0.5	0.0	0.5	1.7	8.7	0.0	0.0	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	13.6	0.0	13.6	10.4	21.6	0.0	0.0	14.1	14.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	13.6	0.0	13.6	10.4	21.6	0.0	0.0	14.1	14.1
LOS by Move:	B	B	B	B	A	B	B	C	A	A	B	B
HCM2kAvgQ:	2	2	2	1	0	1	0	8	0	0	7	7

Note: Queue reported is the number of cars per lane.

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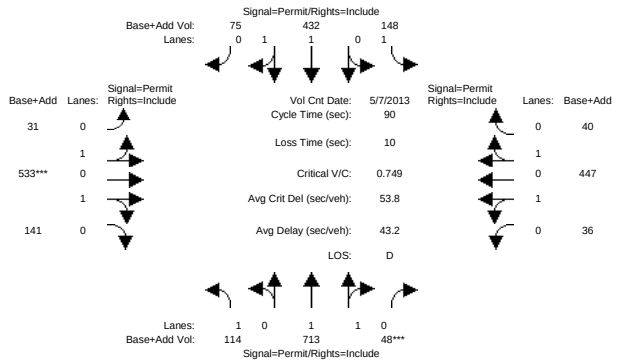
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #40: 16th/Potrero



Street Name: Potrero Ave 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	54	0	54	54	0	54	0	26	0	0	26	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:30am												
Base Vol:	114	713	48	129	432	75	31	403	141	36	431	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	713	48	129	432	75	31	403	141	36	431	37
Added Vol:	0	0	0	19	0	0	0	130	0	0	16	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	713	48	148	432	75	31	533	141	36	447	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	735	49	153	445	77	32	549	145	37	461	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	735	49	153	445	77	32	549	145	37	461	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	735	49	153	445	77	32	549	145	37	461	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.34	0.59	0.72	0.25	0.58	0.70	0.65	0.59	0.64	0.57	0.51	0.57
Lanes:	1.00	1.90	0.10	1.00	1.75	0.25	0.08	1.55	0.37	0.12	1.74	0.14
Final Sat.:	648	2115	142	473	1926	334	100	1727	457	134	1668	149
Capacity Analysis Module:												
Vol/Sat:	0.18	0.35	0.35	0.32	0.23	0.23	0.32	0.32	0.32	0.28	0.28	0.28
Crit Moves:			****					****				
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.30	0.58	0.58	0.54	0.39	0.39	1.10	1.10	1.10	0.96	0.96	0.96
Uniform Del:	8.8	11.0	11.0	10.6	9.4	9.4	32.0	32.0	32.0	31.4	31.4	31.4
IncremntDel:	2.0	1.8	1.8	7.1	0.8	0.8	66.0	66.0	66.0	28.5	28.5	28.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.8	12.8	12.8	17.7	10.2	10.2	98.0	98.0	98.0	59.9	59.9	59.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.8	12.8	12.8	17.7	10.2	10.2	98.0	98.0	98.0	59.9	59.9	59.9
LOS by Move:	B	B	B	B	B	B	F	F	F	E	E	E
HCM2kAvgQ:	2	8	9	3	4	5	20	19	20	11	10	11

Note: Queue reported is the number of cars per lane.

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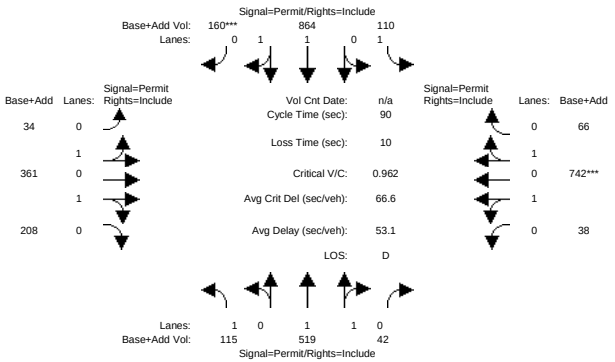
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #40: 16th/Potrero



Street Name: Potrero Ave 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	50	0	50	50	0	50	0	30	0	0	30	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	115	519	42	107	864	160	34	344	208	38	640	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	519	42	107	864	160	34	344	208	38	640	51
Added Vol:	0	0	0	3	0	0	0	17	0	0	102	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	519	42	110	864	160	34	361	208	38	742	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	119	535	43	113	891	165	35	372	214	39	765	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	535	43	113	891	165	35	372	214	39	765	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	535	43	113	891	165	35	372	214	39	765	68
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.16	0.59	0.72	0.31	0.58	0.70	0.55	0.49	0.53	0.65	0.58	0.65
Lanes:	1.00	1.88	0.12	1.00	1.73	0.27	0.10	1.25	0.65	0.08	1.78	0.14
Final Sat.:	312	2089	169	593	1907	353	108	1148	662	101	1969	175
Capacity Analysis Module:												
Vol/Sat:	0.38	0.26	0.26	0.19	0.47	0.47	0.32	0.32	0.32	0.39	0.39	0.39
Crit Moves:						****					****	
Green/Cycle:	0.56	0.56	0.56	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.68	0.46	0.46	0.34	0.84	0.84	0.97	0.97	0.97	1.17	1.17	1.17
Uniform Del:	14.3	11.9	11.9	11.0	16.7	16.7	29.6	29.6	29.6	30.0	30.0	30.0
IncremntDel:	19.8	1.2	1.2	2.8	6.9	6.9	29.4	29.4	29.4	88.6	88.6	88.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.2	13.2	13.2	13.8	23.6	23.6	59.0	59.0	59.0	118.6	119	118.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	13.2	13.2	13.8	23.6	23.6	59.0	59.0	59.0	118.6	119	118.6
LOS by Move:	C	B	B	B	C	C	E	E	E	F	F	F
HCM2kAvgQ:	4	5	6	2	15	18	15	14	15	24	22	24

Note: Queue reported is the number of cars per lane.

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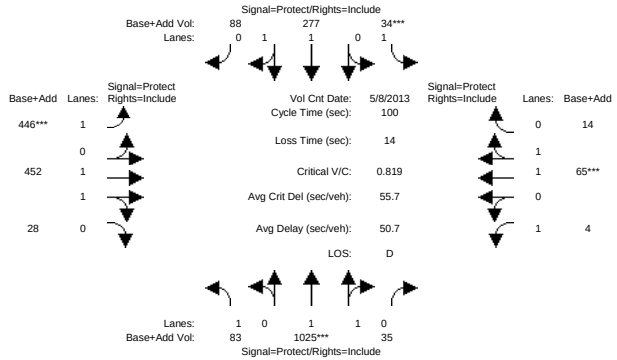
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	39	39	10	25	25	35	18	18	15	8	8
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	44	870	24	11	255	69	401	332	23	3	58	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	870	24	11	255	69	401	332	23	3	58	12
Added Vol:	39	155	11	23	22	19	45	120	5	1	7	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1025	35	34	277	88	446	452	28	4	65	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	86	1059	36	35	286	91	461	467	29	4	67	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	1059	36	35	286	91	461	467	29	4	67	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	1059	36	35	286	91	461	467	29	4	67	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.80	0.81	0.77	0.76	0.81	0.75	0.75	0.81	0.79	0.78
Lanes:	1.00	1.93	0.07	1.00	1.51	0.49	1.00	1.88	0.12	1.00	1.64	0.36
Final Sat.:	1539	2933	100	1539	2220	705	1539	2693	167	1539	2458	529
Capacity Analysis Module:												
Vol/Sat:	0.06	0.36	0.36	0.02	0.13	0.13	0.30	0.17	0.17	0.00	0.03	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.21	0.37	0.37	0.09	0.26	0.26	0.33	0.22	0.22	0.18	0.08	0.08
Volume/Cap:	0.27	0.98	0.98	0.24	0.50	0.50	0.91	0.78	0.78	0.01	0.36	0.36
Uniform Del:	35.4	33.1	33.1	44.5	33.6	33.6	33.9	38.7	38.7	35.5	46.6	46.6
IncremntDel:	2.1	22.8	22.8	3.9	2.4	2.4	22.4	9.0	9.0	0.1	4.5	4.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.5	56.0	56.0	48.4	36.0	36.0	56.3	47.7	47.7	35.6	51.0	51.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.5	56.0	56.0	48.4	36.0	36.0	56.3	47.7	47.7	35.6	51.0	51.0
LOS by Move:	D	E	E	D	D	D	E	D	D	D	D	D
HCM2kAvgQ:	2	25	25	1	6	5	16	8	8	0	2	2

Note: Queue reported is the number of cars per lane.

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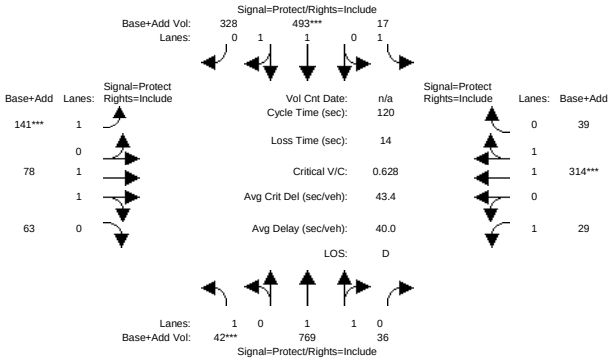
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	48	48	12	46	46	23	23	23	23	23	23
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	38	743	35	16	352	240	131	69	40	19	202	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	743	35	16	352	240	131	69	40	19	202	11
Added Vol:	4	26	1	1	141	88	10	9	23	10	112	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	769	36	17	493	328	141	78	63	29	314	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	44	809	38	18	519	345	148	82	66	31	331	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	809	38	18	519	345	148	82	66	31	331	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	809	38	18	519	345	148	82	66	31	331	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.79	0.81	0.75	0.73	0.81	0.71	0.67	0.81	0.80	0.78
Lanes:	1.00	1.91	0.09	1.00	1.18	0.82	1.00	1.08	0.92	1.00	1.77	0.23
Final Sat.:	1539	2891	135	1539	1694	1127	1539	1457	1177	1539	2687	334
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.01	0.31	0.31	0.10	0.06	0.06	0.02	0.12	0.12
Crit Moves:	****				****		****				****	
Green/Cycle:	0.12	0.40	0.40	0.10	0.38	0.38	0.19	0.19	0.19	0.19	0.19	0.19
Volume/Cap:	0.25	0.70	0.70	0.12	0.80	0.80	0.50	0.29	0.29	0.10	0.64	0.64
Uniform Del:	48.2	30.0	30.0	49.2	32.9	32.9	43.4	41.5	41.5	40.0	44.7	44.7
IncremntDel:	3.2	3.4	3.4	1.5	6.2	6.2	6.0	1.5	1.5	0.7	5.4	5.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.4	33.4	33.4	50.7	39.1	39.1	49.4	43.0	43.0	40.7	50.1	50.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.4	33.4	33.4	50.7	39.1	39.1	49.4	43.0	43.0	40.7	50.1	50.1
LOS by Move:	D	C	C	D	D	D	D	D	D	D	D	D
HCM2kAvgQ:	2	15	14	1	16	15	5	2	2	1	8	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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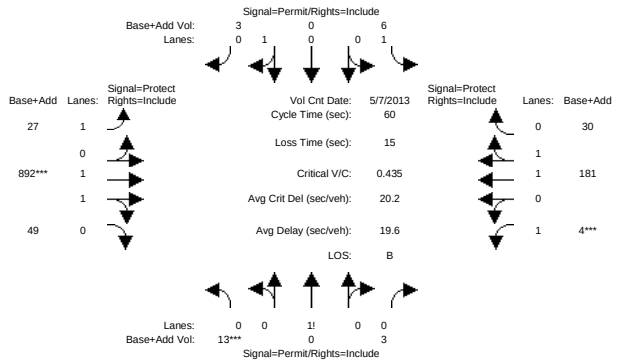
Intersection #42: Mariposa/4th

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Street Name:            4th Street                    Mariposa Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   15   15    15   15   15    15   30   30    15   30   30
Y+R:           5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am
Base Vol:      13    0     3     0    0     0     0  728   49     4  147     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
Initial Bse:   13    0     3     0    0     0     0  728   49     4  147     0
Added Vol:      0    0     0     6    0     3    27  164    0     0   34    30
PasserByVol:    0    0     0     0    0     0     0    0    0     0    0     0
Initial Fut:   13    0     3     6    0     3    27  892   49     4  181    30
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95 0.95  0.95 0.95  0.95
PHF Volume:    14    0     3     6    0     3    28  939   52     4  191    32
Reduct Vol:     0    0     0     0    0     0     0    0    0     0    0     0
Reduced Vol:   14    0     3     6    0     3    28  939   52     4  191    32
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
FinalVolume:   14    0     3     6    0     3    28  939   52     4  191    32
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900 1900  1900 1900  1900
Adjustment:  0.66 1.00  0.68  0.70 1.00  0.68  0.81 0.75 0.75  0.81 0.74  0.74
Lanes:       0.82 0.00  0.18  1.00 0.00  1.00  1.00 1.90 0.10  1.00 1.71  0.29
Final Sat.:  1021    0   236  1323    0  1295  1539 2714  149  1539 2421   401
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00  0.01  0.00 0.00  0.00  0.02 0.35  0.35  0.00 0.08  0.08
Crit Moves:  ****                             ****        ****
Green/Cycle: 0.17 0.00  0.17  0.17 0.00  0.17  0.22 0.50  0.50  0.17 0.44  0.44
Volume/Cap:  0.08 0.00  0.08  0.03 0.00  0.01  0.08 0.69  0.69  0.02 0.18  0.18
Uniform Del: 31.7  0.0  31.7  31.4  0.0  31.3  27.7 17.2  17.2  31.3 15.1  15.1
IncremntDel:  0.8  0.0   0.8   0.2  0.0   0.1   0.5  2.8   2.8   0.1  0.3   0.3
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 0.00  1.00  1.00 0.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   32.4  0.0  32.4  31.6  0.0  31.5  28.2 20.0  20.0  31.5 15.4  15.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  32.4  0.0  32.4  31.6  0.0  31.5  28.2 20.0  20.0  31.5 15.4  15.4
LOS by Move:    C    A     C     C    A     C     C    B     B     C    B     B
HCM2kAvgQ:      0    0     0     0    0     0     1   12    12     0    2     2
Note: Queue reported is the number of cars per lane.
```


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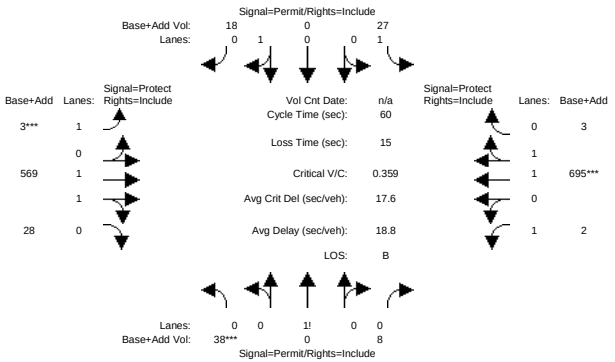
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #42: Mariposa/4th




```
Street Name:            4th Street                    Mariposa Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   15   15    15   15   15    15   30   30    15   30   30
Y+R:           5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      38    0     8     0    0     0     0  555   28     2  494     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
Initial Bse:   38    0     8     0    0     0     0  555   28     2  494     0
Added Vol:      0    0     0    27    0    18     3   14    0     0  201     3
PasserByVol:    0    0     0     0    0     0     0    0    0     0    0     0
Initial Fut:   38    0     8    27    0    18     3  569   28     2  695     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95 0.95  0.95 0.95  0.95
PHF Volume:    40    0     8    28    0    19     3  599   29     2  732     3
Reduct Vol:     0    0     0     0    0     0     0    0    0     0    0     0
Reduced Vol:   40    0     8    28    0    19     3  599   29     2  732     3
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00
FinalVolume:   40    0     8    28    0    19     3  599   29     2  732     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900 1900  1900 1900  1900
Adjustment:  0.60 1.00  0.63  0.62 1.00  0.68  0.81 0.75 0.75  0.81 0.76  0.76
Lanes:       0.83 0.00  0.17  1.00 0.00  1.00  1.00 1.91 0.09  1.00 1.99  0.01
Final Sat.:   954    0   201  1184    0  1295  1539 2732   134  1539 2871    12
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.00  0.04  0.02 0.00  0.01  0.00 0.22  0.22  0.00 0.25  0.25
Crit Moves:  ****                             ****        ****
Green/Cycle: 0.17 0.00  0.17  0.17 0.00  0.17  0.17 0.44  0.44  0.22 0.50  0.50
Volume/Cap:  0.25 0.00  0.25  0.14 0.00  0.09  0.01 0.49  0.49  0.01 0.51  0.51
Uniform Del: 32.6  0.0  32.6  32.0  0.0  31.7  31.3 17.8  17.8  27.3 15.1  15.1
IncremntDel:  3.1  0.0   3.1   1.5  0.0   0.8   0.1  1.4   1.4   0.0  1.3   1.3
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 0.00  1.00  1.00 0.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   35.7  0.0  35.7  33.5  0.0  32.5  31.4 19.2  19.2  27.3 16.4  16.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  35.7  0.0  35.7  33.5  0.0  32.5  31.4 19.2  19.2  27.3 16.4  16.4
LOS by Move:    D    A     D     C    A     C     C    B     B     C    B     B
HCM2kAvgQ:      1    0     1     1    0     0     0    7     7     0    7     7
Note: Queue reported is the number of cars per lane.
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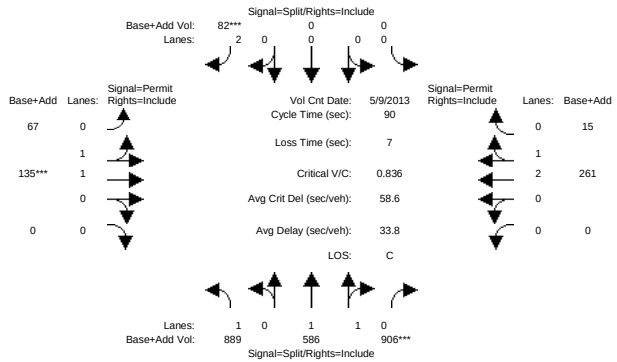
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	55	55	55	13	13	13	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	889	0	745	0	0	0	0	105	0	0	239	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	889	0	745	0	0	0	0	105	0	0	239	0
Added Vol:	0	586	161	0	0	82	67	30	0	0	22	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	889	586	906	0	0	82	67	135	0	0	261	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	922	608	940	0	0	85	70	140	0	0	271	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	922	608	940	0	0	85	70	140	0	0	271	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	922	608	940	0	0	85	70	140	0	0	271	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.76	1.00	1.00	0.61	0.67	0.71	1.00	1.00	0.89	0.85
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.69	1.31	0.00	0.00	2.83	0.17
Final Sat.:	2018	1458	1436	0	0	2325	875	1763	0	0	4784	275
Capacity Analysis Module:												
Vol/Sat:	0.46	0.42	0.65	0.00	0.00	0.04	0.08	0.08	0.00	0.00	0.06	0.06
Crit Moves:			****			****		****				
Green/Cycle:	0.61	0.61	0.61	0.00	0.00	0.14	0.17	0.17	0.00	0.00	0.17	0.17
Volume/Cap:	0.75	0.68	1.07	0.00	0.00	0.25	0.48	0.48	0.00	0.00	0.34	0.34
Uniform Del:	12.5	11.7	17.5	0.0	0.0	34.2	33.9	33.9	0.0	0.0	33.1	33.1
IncremntDel:	4.2	1.7	45.2	0.0	0.0	1.8	3.7	3.7	0.0	0.0	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	16.7	13.4	62.7	0.0	0.0	36.0	37.6	37.6	0.0	0.0	34.2	34.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.7	13.4	62.7	0.0	0.0	36.0	37.6	37.6	0.0	0.0	34.2	34.2
LOS by Move:	B	B	E	A	A	D	D	D	A	A	C	C
HCM2kAvgQ:	19	13	41	0	0	1	3	3	0	0	3	3

Note: Queue reported is the number of cars per lane.

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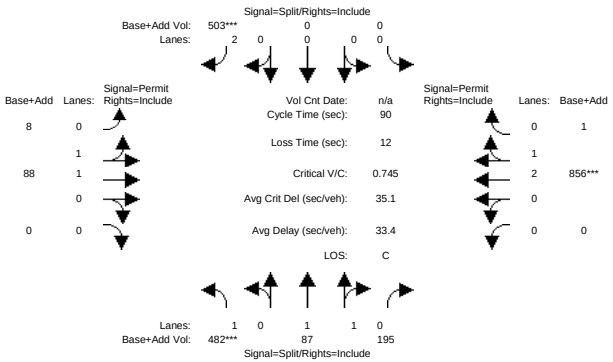
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	29	29	26	26	26	23	23	23	23	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	482	0	180	0	0	0	0	86	0	0	639	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	482	0	180	0	0	0	0	86	0	0	639	0
Added Vol:	0	87	15	0	0	503	8	2	0	0	217	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	482	87	195	0	0	503	8	88	0	0	856	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	502	91	203	0	0	524	8	92	0	0	892	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	502	91	203	0	0	524	8	92	0	0	892	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	502	91	203	0	0	524	8	92	0	0	892	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.76	0.80	1.00	1.00	0.62	0.80	0.83	1.00	1.00	0.90	0.86
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.17	1.83	0.00	0.00	2.99	0.01
Final Sat.:	2018	1437	1514	0	0	2358	263	2889	0	0	5106	6
Capacity Analysis Module:												
Vol/Sat:	0.25	0.06	0.13	0.00	0.00	0.22	0.03	0.03	0.00	0.00	0.17	0.17
Crit Moves:	****					****					****	
Green/Cycle:	0.32	0.32	0.32	0.00	0.00	0.29	0.26	0.26	0.00	0.00	0.26	0.26
Volume/Cap:	0.77	0.20	0.42	0.00	0.00	0.77	0.12	0.12	0.00	0.00	0.68	0.68
Uniform Del:	27.5	22.1	23.9	0.0	0.0	29.3	25.8	25.8	0.0	0.0	30.2	30.2
IncremntDel:	8.6	0.3	1.8	0.0	0.0	8.2	0.3	0.3	0.0	0.0	2.9	2.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	36.2	22.4	25.7	0.0	0.0	37.4	26.1	26.1	0.0	0.0	33.1	33.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.2	22.4	25.7	0.0	0.0	37.4	26.1	26.1	0.0	0.0	33.1	33.1
LOS by Move:	D	C	C	A	A	D	C	C	A	A	C	C
HCM2kAvgQ:	14	2	5	0	0	9	1	1	0	0	9	9

Note: Queue reported is the number of cars per lane.

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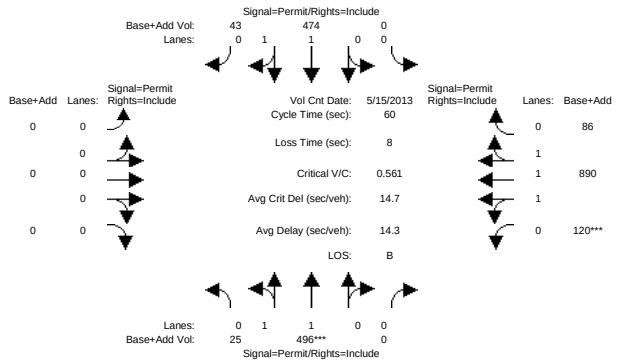
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #45: Divisadero/Pine



Street Name:	Divisadero Street						Pine Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	26	0	0	26	0	26	0	26	26	0	26
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	25	486	0	0	436	43	0	0	0	87	890	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	486	0	0	436	43	0	0	0	87	890	86
Added Vol:	0	10	0	0	38	0	0	0	0	33	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	496	0	0	474	43	0	0	0	120	890	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	26	522	0	0	499	45	0	0	0	126	937	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	522	0	0	499	45	0	0	0	126	937	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	522	0	0	499	45	0	0	0	126	937	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	1.00	1.00	0.74	0.74	1.00	1.00	1.00	0.72	0.72	0.72
Lanes:	0.10	1.90	0.00	0.00	1.83	0.17	0.00	0.00	0.00	0.33	2.43	0.24
Final Sat.:	128	2531	0	0	2588	235	0	0	0	451	3344	323
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.00	0.00	0.19	0.19	0.00	0.00	0.00	0.28	0.28	0.28
Crit Moves:		****								****		
Green/Cycle:	0.43	0.43	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.43	0.43	0.43
Volume/Cap:	0.48	0.48	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.65	0.65	0.65
Uniform Del:	12.1	12.1	0.0	0.0	11.9	11.9	0.0	0.0	0.0	13.4	13.4	13.4
IncremntDel:	1.4	1.4	0.0	0.0	1.2	1.2	0.0	0.0	0.0	1.8	1.8	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	13.5	13.5	0.0	0.0	13.1	13.1	0.0	0.0	0.0	15.2	15.2	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.5	13.5	0.0	0.0	13.1	13.1	0.0	0.0	0.0	15.2	15.2	15.2
LOS by Move:	B	B	A	A	B	B	A	A	A	B	B	B
HCM2kAvgQ:	4	4	0	0	4	4	0	0	0	7	7	7

Note: Queue reported is the number of cars per lane.

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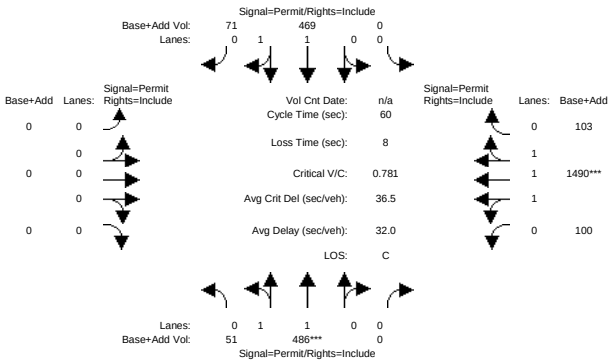
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #45: Divisadero/Pine



Street Name:	Divisadero Street						Pine Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	26	0	0	26	0	26	0	26	26	0	26
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	51	465	0	0	465	71	0	0	0	97	1490	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	465	0	0	465	71	0	0	0	97	1490	103
Added Vol:	0	21	0	0	4	0	0	0	0	3	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	486	0	0	469	71	0	0	0	100	1490	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	55	528	0	0	510	77	0	0	0	109	1620	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	528	0	0	510	77	0	0	0	109	1620	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	528	0	0	510	77	0	0	0	109	1620	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	1.00	1.00	0.74	0.73	1.00	1.00	1.00	0.73	0.73	0.73
Lanes:	0.19	1.81	0.00	0.00	1.74	0.26	0.00	0.00	0.00	0.18	2.64	0.18
Final Sat.:	236	2246	0	0	2430	368	0	0	0	246	3663	253
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.00	0.00	0.21	0.21	0.00	0.00	0.00	0.44	0.44	0.44
Crit Moves:		****									****	
Green/Cycle:	0.43	0.43	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.43	0.43	0.43
Volume/Cap:	0.54	0.54	0.00	0.00	0.48	0.48	0.00	0.00	0.00	1.02	1.02	1.02
Uniform Del:	12.6	12.6	0.0	0.0	12.2	12.2	0.0	0.0	0.0	17.0	17.0	17.0
IncremntDel:	2.0	2.0	0.0	0.0	1.4	1.4	0.0	0.0	0.0	26.4	26.4	26.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	14.6	14.6	0.0	0.0	13.6	13.6	0.0	0.0	0.0	43.4	43.4	43.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.6	14.6	0.0	0.0	13.6	13.6	0.0	0.0	0.0	43.4	43.4	43.4
LOS by Move:	B	B	A	A	B	B	A	A	A	D	D	D
HCM2kAvgQ:	4	4	0	0	5	5	0	0	0	21	21	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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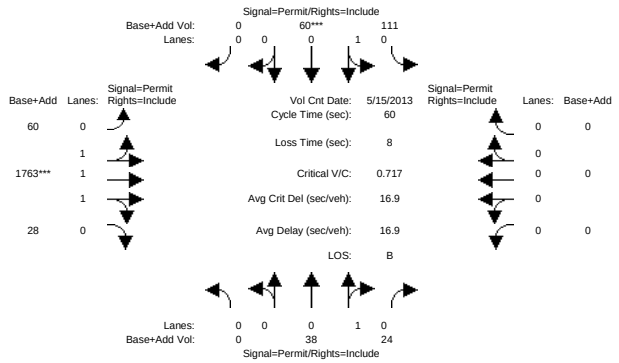
Intersection #46: Broderick/Bush



Street Name:	Broderick Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	20	20	20	0	0	32	32	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	0	38	24	111	60	0	60	1761	28	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	38	24	111	60	0	60	1761	28	0	0	0
Added Vol:	0	0	0	0	0	0	0	2	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	38	24	111	60	0	60	1763	28	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	40	25	116	63	0	63	1836	29	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	40	25	116	63	0	63	1836	29	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	40	25	116	63	0	63	1836	29	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.71	0.70	0.57	0.58	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.61	0.39	0.65	0.35	0.00	0.10	2.86	0.04	0.00	0.00	0.00
Final Sat.:	0	820	518	707	382	0	136	4010	64	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.05	0.16	0.16	0.00	0.46	0.46	0.46	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.33	0.33	0.33	0.33	0.00	0.53	0.53	0.53	0.00	0.00	0.00
Volume/Cap:	0.00	0.14	0.14	0.49	0.49	0.00	0.86	0.86	0.86	0.00	0.00	0.00
Uniform Del:	0.0	14.0	14.0	15.9	15.9	0.0	12.1	12.1	12.1	0.0	0.0	0.0
IncremntDel:	0.0	0.7	0.7	4.7	4.7	0.0	4.5	4.5	4.5	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.7	14.7	20.6	20.6	0.0	16.6	16.6	16.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.7	14.7	20.6	20.6	0.0	16.6	16.6	16.6	0.0	0.0	0.0
LOS by Move:	A	B	B	B	C	A	B	B	B	A	A	A
HCM2kAvgQ:	0	1	1	3	3	0	15	15	15	0	0	0

Note: Queue reported is the number of cars per lane.

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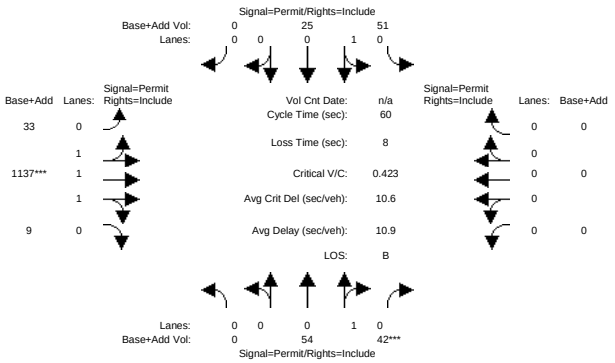
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #46: Broderick/Bush



Street Name:	Broderick Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	20	20	20	0	0	32	32	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	54	42	51	25	0	33	1137	9	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	54	42	51	25	0	33	1137	9	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	54	42	51	25	0	33	1137	9	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	56	44	53	26	0	34	1184	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	56	44	53	26	0	34	1184	9	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	56	44	53	26	0	34	1184	9	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.70	0.69	0.59	0.60	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.56	0.44	0.67	0.33	0.00	0.08	2.90	0.02	0.00	0.00	0.00
Final Sat.:	0	744	579	752	368	0	118	4068	32	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.08	0.08	0.07	0.07	0.00	0.29	0.29	0.29	0.00	0.00	0.00
Crit Moves:			****					****				
Green/Cycle:	0.00	0.33	0.33	0.33	0.33	0.00	0.53	0.53	0.53	0.00	0.00	0.00
Volume/Cap:	0.00	0.23	0.23	0.21	0.21	0.00	0.55	0.55	0.55	0.00	0.00	0.00
Uniform Del:	0.0	14.4	14.4	14.3	14.3	0.0	9.2	9.2	9.2	0.0	0.0	0.0
IncremntDel:	0.0	1.2	1.2	1.3	1.3	0.0	1.0	1.0	1.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	15.6	15.6	15.6	15.6	0.0	10.2	10.2	10.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.6	15.6	15.6	15.6	0.0	10.2	10.2	10.2	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	2	1	1	1	0	6	6	6	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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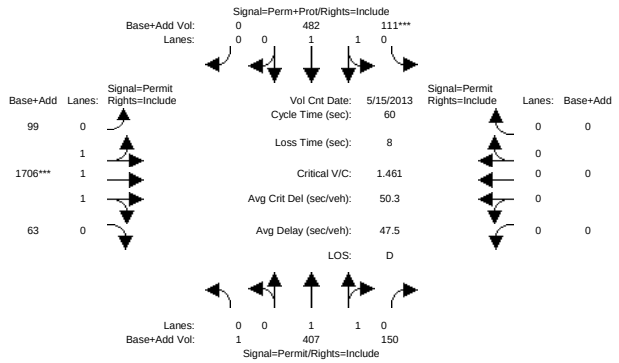
Intersection #47: Divisadero/Bush



Street Name:	Divisadero Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	17	17	6	26	0	26	26	26	0	0	0
Y+R:	4.0	9.0	9.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	1	397	131	101	421	0	99	1704	63	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	397	131	101	421	0	99	1704	63	0	0	0
Added Vol:	0	10	19	10	61	0	0	2	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	407	150	111	482	0	99	1706	63	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	428	158	117	507	0	104	1796	66	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	428	158	117	507	0	104	1796	66	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	428	158	117	507	0	104	1796	66	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.72	0.71	0.46	0.75	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.01	1.45	0.54	0.37	1.63	0.00	0.16	2.74	0.10	0.00	0.00	0.00
Final Sat.:	5	1992	734	322	2324	0	222	3821	141	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.36	0.22	0.00	0.47	0.47	0.47	0.00	0.00	0.00
Crit Moves:				****				****				
Green/Cycle:	0.00	0.28	0.28	0.43	0.43	0.00	0.43	0.43	0.43	0.00	0.00	0.00
Volume/Cap:	xxxx	0.76	0.76	0.65	0.50	0.00	1.08	1.08	1.08	0.00	0.00	0.00
Uniform Del:	0.0	19.6	19.6	0.0	12.3	0.0	17.0	17.0	17.0	0.0	0.0	0.0
IncremntDel:	0.0	6.9	6.9	3.3	1.5	0.0	48.2	48.2	48.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	26.5	26.5	3.3	13.8	0.0	65.2	65.2	65.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.5	26.5	3.3	13.8	0.0	65.2	65.2	65.2	0.0	0.0	0.0
LOS by Move:	A	C	C	A	B	A	E	E	E	A	A	A
HCM2kAvgQ:	5	7	7	5	5	0	21	21	21	0	0	0

Note: Queue reported is the number of cars per lane.

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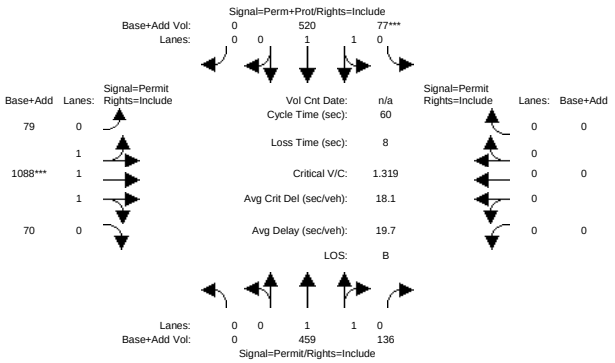
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #47: Divisadero/Bush



Street Name:	Divisadero Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	17	17	6	26	0	26	26	26	0	0	0
Y+R:	4.0	9.0	9.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	438	89	76	515	0	79	1088	70	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	438	89	76	515	0	79	1088	70	0	0	0
Added Vol:	0	21	47	1	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	459	136	77	520	0	79	1088	70	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	499	148	84	565	0	86	1183	76	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	499	148	84	565	0	86	1183	76	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	499	148	84	565	0	86	1183	76	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.73	0.73	0.61	0.76	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.00	1.54	0.46	0.26	1.74	0.00	0.19	2.64	0.17	0.00	0.00	0.00
Final Sat.:	0	2121	628	302	2499	0	266	3657	235	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.24	0.28	0.23	0.00	0.32	0.32	0.32	0.00	0.00	0.00
Crit Moves:				****				****				
Green/Cycle:	0.00	0.28	0.28	0.43	0.43	0.00	0.43	0.43	0.43	0.00	0.00	0.00
Volume/Cap:	0.00	0.83	0.83	0.58	0.52	0.00	0.75	0.75	0.75	0.00	0.00	0.00
Uniform Del:	0.0	20.1	20.1	18.0	12.4	0.0	14.2	14.2	14.2	0.0	0.0	0.0
IncremntDel:	0.0	10.0	10.0	2.2	1.6	0.0	2.9	2.9	2.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	30.1	30.1	20.3	14.0	0.0	17.1	17.1	17.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.1	30.1	20.3	14.0	0.0	17.1	17.1	17.1	0.0	0.0	0.0
LOS by Move:	A	C	C	C	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	9	9	5	5	0	8	8	8	0	0	0

Note: Queue reported is the number of cars per lane.

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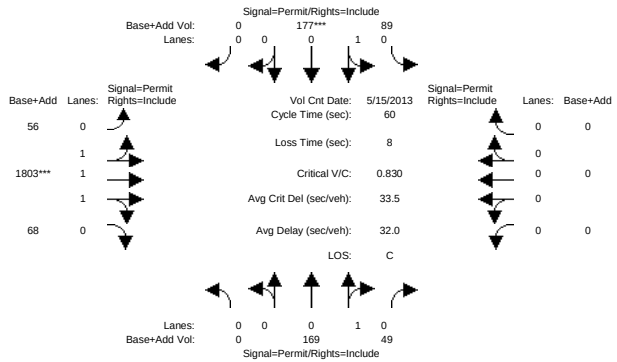
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #48: Scott/Bush



Street Name:	Scott Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	0	169	43	89	177	0	56	1784	63	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	169	43	89	177	0	56	1784	63	0	0	0
Added Vol:	0	0	6	0	0	0	0	19	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	169	49	89	177	0	56	1803	68	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	178	52	94	186	0	59	1898	72	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	178	52	94	186	0	59	1898	72	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	178	52	94	186	0	59	1898	72	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.72	0.72	0.62	0.62	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.77	0.23	0.34	0.66	0.00	0.09	2.81	0.10	0.00	0.00	0.00
Final Sat.:	0	1064	309	395	786	0	122	3931	148	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.17	0.24	0.24	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.44	0.44	0.62	0.62	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Del:	0.0	13.7	13.7	15.0	15.0	0.0	15.5	15.5	15.5	0.0	0.0	0.0
IncremntDel:	0.0	2.6	2.6	6.2	6.2	0.0	19.7	19.7	19.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	16.3	16.3	21.2	21.2	0.0	35.2	35.2	35.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	16.3	16.3	21.2	21.2	0.0	35.2	35.2	35.2	0.0	0.0	0.0
LOS by Move:	A	B	B	C	C	A	D	D	D	A	A	A
HCM2kAvgQ:	0	4	4	5	5	0	22	22	22	0	0	0

Note: Queue reported is the number of cars per lane.

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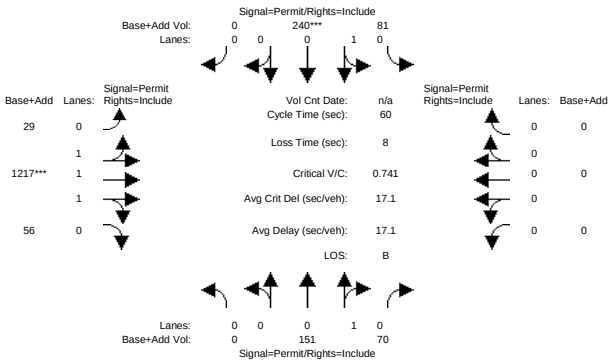
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #48: Scott/Bush



Street Name:	Scott Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	151	57	81	240	0	29	1170	55	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	151	57	81	240	0	29	1170	55	0	0	0
Added Vol:	0	0	13	0	0	0	0	47	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	151	70	81	240	0	29	1217	56	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	170	79	91	270	0	33	1367	63	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	170	79	91	270	0	33	1367	63	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	170	79	91	270	0	33	1367	63	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.71	0.70	0.64	0.65	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.68	0.32	0.25	0.75	0.00	0.07	2.80	0.13	0.00	0.00	0.00
Final Sat.:	0	923	428	310	918	0	94	3927	181	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.18	0.29	0.29	0.00	0.35	0.35	0.35	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.48	0.48	0.77	0.77	0.00	0.72	0.72	0.72	0.00	0.00	0.00
Uniform Del:	0.0	14.0	14.0	16.2	16.2	0.0	12.3	12.3	12.3	0.0	0.0	0.0
IncremntDel:	0.0	3.2	3.2	11.3	11.3	0.0	2.2	2.2	2.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	17.1	17.1	27.5	27.5	0.0	14.5	14.5	14.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.1	17.1	27.5	27.5	0.0	14.5	14.5	14.5	0.0	0.0	0.0
LOS by Move:	A	B	B	C	C	A	B	B	B	A	A	A
HCM2kAvgQ:	0	4	4	8	8	0	9	9	9	0	0	0

Note: Queue reported is the number of cars per lane.

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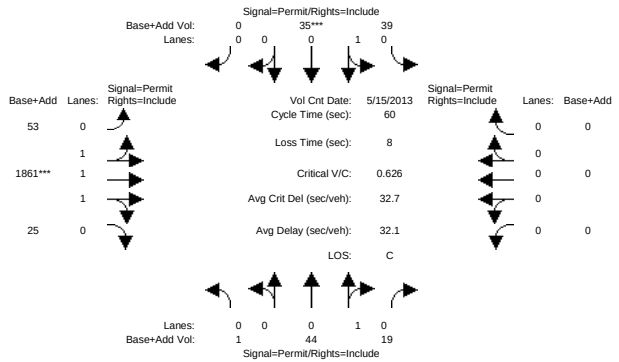
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #49: Bush/Pierce



Street Name:	Pierce Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	1	44	19	39	35	0	53	1836	25	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	44	19	39	35	0	53	1836	25	0	0	0
Added Vol:	0	0	0	0	0	0	0	25	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	44	19	39	35	0	53	1861	25	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	1	46	20	41	36	0	55	1939	26	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	46	20	41	36	0	55	1939	26	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	46	20	41	36	0	55	1939	26	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.71	0.64	0.64	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.02	0.68	0.30	0.53	0.47	0.00	0.08	2.88	0.04	0.00	0.00	0.00
Final Sat.:	21	931	402	640	575	0	115	4045	54	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.06	0.06	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.38	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.13	0.13	0.13	0.17	0.17	0.00	0.99	0.99	0.99	0.00	0.00	0.00
Uniform Del:	12.0	12.0	12.0	12.2	12.2	0.0	15.4	15.4	15.4	0.0	0.0	0.0
IncremntDel:	0.5	0.5	0.5	0.8	0.8	0.0	18.1	18.1	18.1	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	12.5	12.5	12.5	12.9	12.9	0.0	33.4	33.4	33.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	12.5	12.5	12.9	12.9	0.0	33.4	33.4	33.4	0.0	0.0	0.0
LOS by Move:	B	B	B	B	B	A	C	C	C	A	A	A
HCM2kAvgQ:	1	1	1	1	1	0	14	14	14	0	0	0

Note: Queue reported is the number of cars per lane.

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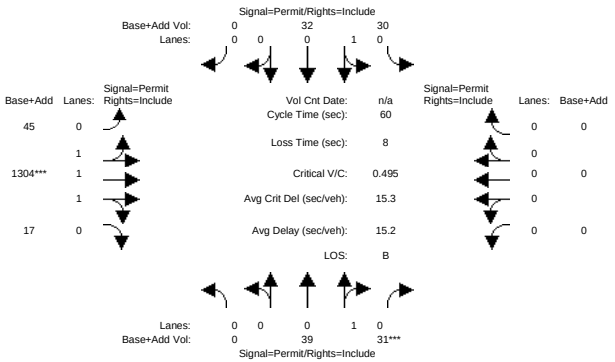
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #49: Bush/Pierce



Street Name:	Pierce Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	39	31	30	32	0	45	1244	17	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	31	30	32	0	45	1244	17	0	0	0
Added Vol:	0	0	0	0	0	0	0	60	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	39	31	30	32	0	45	1304	17	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	0	44	35	34	36	0	51	1482	19	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	44	35	34	36	0	51	1482	19	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	44	35	34	36	0	51	1482	19	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.70	0.69	0.64	0.65	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.55	0.45	0.49	0.51	0.00	0.10	2.86	0.04	0.00	0.00	0.00
Final Sat.:	0	736	585	596	636	0	139	4019	52	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.06	0.06	0.00	0.37	0.37	0.37	0.00	0.00	0.00
Crit Moves:			****					****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.16	0.16	0.15	0.15	0.00	0.76	0.76	0.76	0.00	0.00	0.00
Uniform Del:	0.0	12.1	12.1	12.1	12.1	0.0	12.7	12.7	12.7	0.0	0.0	0.0
IncremntDel:	0.0	0.7	0.7	0.7	0.7	0.0	2.8	2.8	2.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	12.8	12.8	12.8	12.8	0.0	15.5	15.5	15.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.8	12.8	12.8	12.8	0.0	15.5	15.5	15.5	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	1	1	1	1	0	9	9	9	0	0	0

Note: Queue reported is the number of cars per lane.

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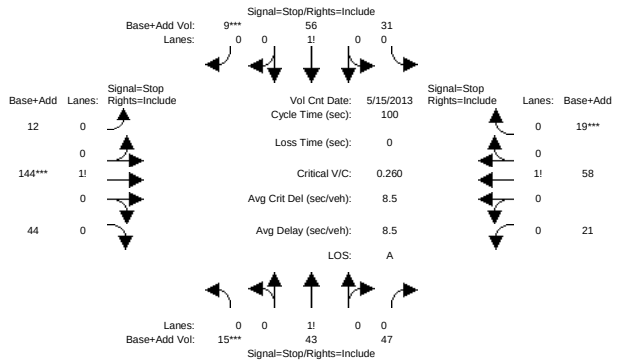
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #50: Broderick/Sutter

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Street Name:         Broderick Street                Sutter Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am
Base Vol:      15   43   47    31   56    9    12  106   44    18   55   19
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   15   43   47    31   56    9    12  106   44    18   55   19
Added Vol:      0    0    0     0    0    0     0   38    0     3    3    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   15   43   47    31   56    9    12  144   44    21   58   19
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:    15   44   48    32   58    9    12  148   45    22   60   20
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   15   44   48    32   58    9    12  148   45    22   60   20
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   15   44   48    32   58    9    12  148   45    22   60   20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.14 0.41 0.45  0.32 0.59 0.09  0.06 0.72 0.22  0.21 0.60 0.19
Final Sat.:   108  311  340   233  420   68    48  571  174   162  449  147
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.14 0.14  0.14 0.14 0.14  0.26 0.26 0.26  0.13 0.13 0.13
Crit Moves:  ****            ****      ****                    ****
Delay/Veh:    8.1  8.1  8.1   8.4  8.4  8.4   8.8  8.8  8.8   8.2  8.2  8.2
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   8.1  8.1  8.1   8.4  8.4  8.4   8.8  8.8  8.8   8.2  8.2  8.2
LOS by Move:    A    A    A     A    A    A     A    A    A     A    A    A
ApproachDel:        8.1            8.4            8.8            8.2
Delay Adj:         1.00           1.00           1.00           1.00
ApprAdjDel:         8.1            8.4            8.8            8.2
LOS by Appr:          A              A              A              A
AllWayAvgQ:   0.1  0.1  0.1   0.1  0.1  0.1   0.3  0.3  0.3   0.1  0.1  0.1
Note: Queue reported is the number of cars per lane.
```


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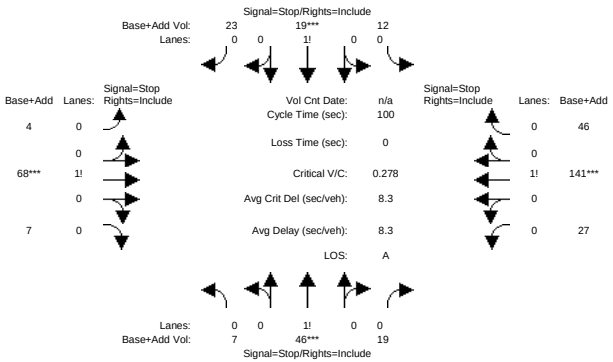
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #50: Broderick/Sutter




```
Street Name:         Broderick Street                Sutter Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       7   46   19    12   19   23     4   65    7    22  135   46
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    7   46   19    12   19   23     4   65    7    22  135   46
Added Vol:      0    0    0     0    0    0     0    3    0     5    6    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    7   46   19    12   19   23     4   68    7    27  141   46
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92
PHF Volume:     8   50   21    13   21   25     4   74    8    29  153   50
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    8   50   21    13   21   25     4   74    8    29  153   50
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    8   50   21    13   21   25     4   74    8    29  153   50
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.10 0.64 0.26  0.22 0.35 0.43  0.05 0.86 0.09  0.13 0.66 0.21
Final Sat.:    73  479  198   168  266  322    40  679   70   105  551  180
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.10 0.10  0.08 0.08 0.08  0.11 0.11 0.11  0.28 0.28 0.28
Crit Moves:       ****            ****            ****            ****
Delay/Veh:    8.0  8.0  8.0   7.8  7.8  7.8   7.9  7.9  7.9   8.7  8.7  8.7
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   8.0  8.0  8.0   7.8  7.8  7.8   7.9  7.9  7.9   8.7  8.7  8.7
LOS by Move:    A    A    A     A    A    A     A    A    A     A    A    A
ApproachDel:        8.0            7.8            7.9            8.7
Delay Adj:         1.00           1.00           1.00           1.00
ApprAdjDel:         8.0            7.8            7.9            8.7
LOS by Appr:          A              A              A              A
AllWayAvgQ:   0.1  0.1  0.1   0.1  0.1  0.1   0.1  0.1  0.1   0.4  0.4  0.4
Note: Queue reported is the number of cars per lane.
```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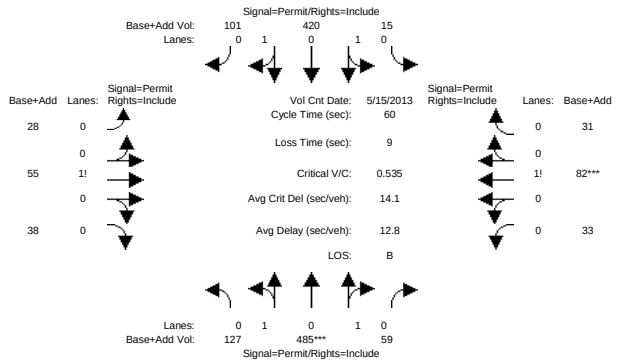
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #51: Divisadero/Sutter



Street Name:	Divisadero Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	75	475	58	10	417	48	10	54	34	32	74	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	475	58	10	417	48	10	54	34	32	74	30
Added Vol:	52	10	1	5	3	53	18	1	4	1	8	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	485	59	15	420	101	28	55	38	33	82	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	132	505	61	16	438	105	29	57	40	34	85	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	132	505	61	16	438	105	29	57	40	34	85	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	132	505	61	16	438	105	29	57	40	34	85	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.55	0.56	0.55	0.68	0.68	0.66	0.61	0.64	0.60	0.63	0.65	0.62
Lanes:	0.38	1.44	0.18	0.05	1.56	0.39	0.23	0.44	0.33	0.23	0.55	0.22
Final Sat.:	401	1532	186	72	2019	486	273	537	371	275	682	258
Capacity Analysis Module:												
Vol/Sat:	0.33	0.33	0.33	0.22	0.22	0.22	0.11	0.11	0.11	0.13	0.13	0.13
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.64	0.64	0.64	0.42	0.42	0.42	0.32	0.32	0.32	0.38	0.38	0.38
Uniform Del:	10.5	10.5	10.5	8.9	8.9	8.9	14.9	14.9	14.9	15.2	15.2	15.2
IncremntDel:	2.8	2.8	2.8	1.0	1.0	1.0	2.1	2.1	2.1	2.6	2.6	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.3	13.3	13.3	9.9	9.9	9.9	17.1	17.1	17.1	17.9	17.9	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.3	13.3	13.3	9.9	9.9	9.9	17.1	17.1	17.1	17.9	17.9	17.9
LOS by Move:	B	B	B	A	A	A	B	B	B	B	B	B
HCM2kAvgQ:	5	5	5	4	4	4	2	2	2	2	3	2

Note: Queue reported is the number of cars per lane.

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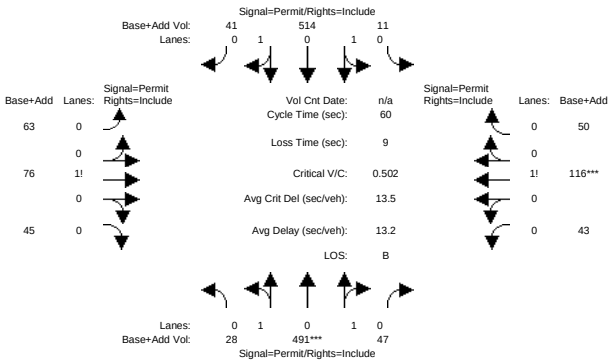
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #51: Divisadero/Sutter



Street Name:	Divisadero Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	22	467	47	11	514	37	22	76	38	43	115	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	467	47	11	514	37	22	76	38	43	115	47
Added Vol:	6	24	0	0	0	4	41	0	7	0	1	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	491	47	11	514	41	63	76	45	43	116	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	534	51	12	559	45	68	83	49	47	126	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	534	51	12	559	45	68	83	49	47	126	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	534	51	12	559	45	68	83	49	47	126	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.67	0.70	0.70	0.70	0.59	0.59	0.58	0.64	0.64	0.63
Lanes:	0.10	1.73	0.17	0.04	1.81	0.15	0.34	0.41	0.25	0.21	0.55	0.24
Final Sat.:	127	2232	214	52	2419	193	384	463	274	249	673	290
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.23	0.23	0.23	0.18	0.18	0.18	0.19	0.19	0.19
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.46	0.46	0.46	0.45	0.45	0.45	0.54	0.54	0.54	0.56	0.56	0.56
Uniform Del:	9.2	9.2	9.2	9.1	9.1	9.1	16.2	16.2	16.2	16.4	16.4	16.4
IncremntDel:	1.2	1.2	1.2	1.1	1.1	1.1	5.4	5.4	5.4	5.6	5.6	5.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.4	10.4	10.4	10.2	10.2	10.2	21.7	21.7	21.7	22.0	22.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.4	10.4	10.4	10.2	10.2	10.2	21.7	21.7	21.7	22.0	22.0	22.0
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	4	4	4	4	4	4	4	4	4	4	4	4

Note: Queue reported is the number of cars per lane.

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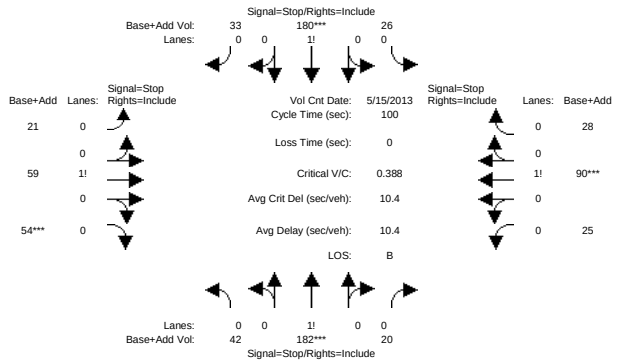
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #52: Sutter/Scott



Street Name:	Scott Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	39	177	20	26	175	33	21	59	48	24	81	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	177	20	26	175	33	21	59	48	24	81	28
Added Vol:	3	5	0	0	5	0	0	0	6	1	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	182	20	26	180	33	21	59	54	25	90	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	46	198	22	28	196	36	23	64	59	27	98	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	198	22	28	196	36	23	64	59	27	98	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	198	22	28	196	36	23	64	59	27	98	30
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.17	0.75	0.08	0.11	0.75	0.14	0.16	0.44	0.40	0.17	0.63	0.20
Final Sat.:	118	510	56	75	518	95	99	278	254	109	391	122
Capacity Analysis Module:												
Vol/Sat:	0.39	0.39	0.39	0.38	0.38	0.38	0.23	0.23	0.23	0.25	0.25	0.25
Crit Moves:		****			****				****		****	
Delay/Veh:	10.9	10.9	10.9	10.7	10.7	10.7	9.6	9.6	9.6	9.9	9.9	9.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	10.9	10.9	10.7	10.7	10.7	9.6	9.6	9.6	9.9	9.9	9.9
LOS by Move:	B	B	B	B	B	B	A	A	A	A	A	A
ApproachDel:		10.9			10.7			9.6			9.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.9			10.7			9.6			9.9	
LOS by Appr:		B			B			A			A	
AllWayAvgQ:	0.6	0.6	0.6	0.5	0.5	0.5	0.2	0.2	0.2	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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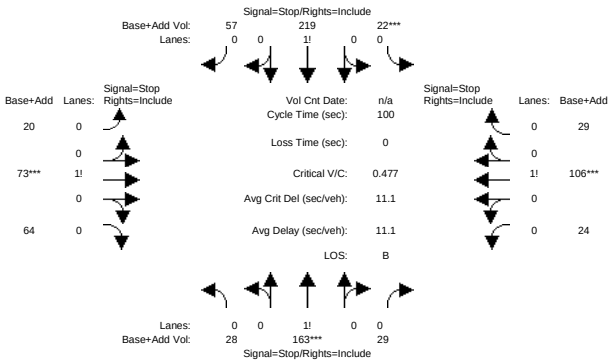
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #52: Sutter/Scott



Street Name:	Scott Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	26	153	29	22	216	57	20	73	63	24	105	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	153	29	22	216	57	20	73	63	24	105	29
Added Vol:	2	10	0	0	3	0	0	0	1	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	163	29	22	219	57	20	73	64	24	106	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	177	32	24	238	62	22	79	70	26	115	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	177	32	24	238	62	22	79	70	26	115	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	177	32	24	238	62	22	79	70	26	115	32
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.13	0.74	0.13	0.07	0.74	0.19	0.13	0.46	0.41	0.15	0.67	0.18
Final Sat.:	83	482	86	50	499	130	78	284	249	90	399	109
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.48	0.48	0.48	0.28	0.28	0.28	0.29	0.29	0.29
Crit Moves:		****			****				****		****	
Delay/Veh:	10.9	10.9	10.9	12.2	12.2	12.2	10.2	10.2	10.2	10.4	10.4	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	10.9	10.9	12.2	12.2	12.2	10.2	10.2	10.2	10.4	10.4	10.4
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
ApproachDel:		10.9			12.2			10.2			10.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.9			12.2			10.2			10.4	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.5	0.5	0.5	0.8	0.8	0.8	0.3	0.3	0.3	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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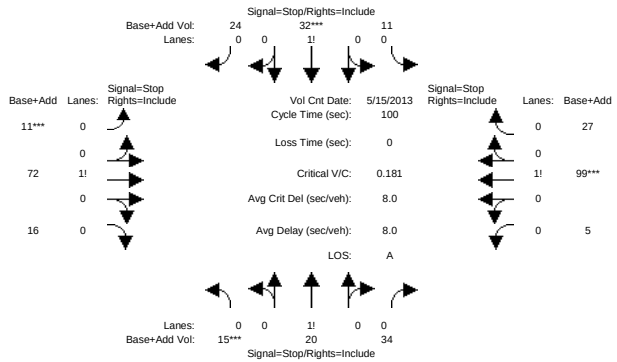
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #53: Pierce/Sutter



Street Name:	Pierce Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	15	20	34	11	32	24	11	72	16	5	89	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	20	34	11	32	24	11	72	16	5	89	27
Added Vol:	0	0	0	0	0	0	0	0	0	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	20	34	11	32	24	11	72	16	5	99	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	17	23	39	13	36	27	13	82	18	6	113	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	23	39	13	36	27	13	82	18	6	113	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	23	39	13	36	27	13	82	18	6	113	31
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.22	0.29	0.49	0.16	0.48	0.36	0.11	0.73	0.16	0.04	0.75	0.21
Final Sat.:	173	230	391	128	373	280	89	586	130	31	622	170
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.10	0.10	0.10	0.14	0.14	0.14	0.18	0.18	0.18
Crit Moves:	****				****		****				****	
Delay/Veh:	7.7	7.7	7.7	7.8	7.8	7.8	8.0	8.0	8.0	8.1	8.1	8.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.7	7.7	7.7	7.8	7.8	7.8	8.0	8.0	8.0	8.1	8.1	8.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.7			7.8			8.0			8.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.7			7.8			8.0			8.1		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

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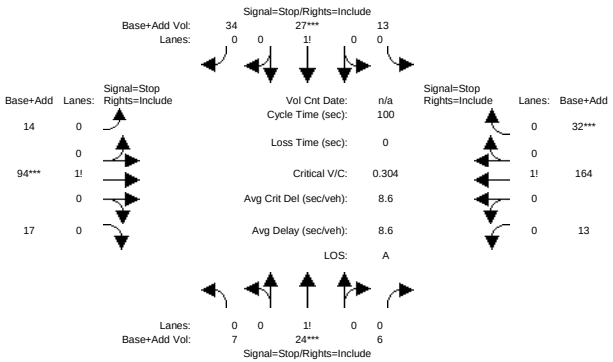
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #53: Pierce/Sutter



Street Name:	Pierce Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	7	24	6	13	27	34	14	94	17	13	163	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	24	6	13	27	34	14	94	17	13	163	32
Added Vol:	0	0	0	0	0	0	0	0	0	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	24	6	13	27	34	14	94	17	13	164	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	8	29	7	15	32	40	17	112	20	15	195	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	29	7	15	32	40	17	112	20	15	195	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	29	7	15	32	40	17	112	20	15	195	38
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.65	0.16	0.18	0.36	0.46	0.11	0.75	0.14	0.06	0.79	0.15
Final Sat.:	131	449	112	129	267	337	89	594	107	51	642	125
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.12	0.12	0.12	0.19	0.19	0.19	0.30	0.30	0.30
Crit Moves:		****			****			****				****
Delay/Veh:	8.1	8.1	8.1	8.1	8.1	8.1	8.4	8.4	8.4	9.1	9.1	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	8.1	8.1	8.1	8.1	8.4	8.4	8.4	9.1	9.1	9.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	8.1			8.1			8.4			9.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.1			8.1			8.4			9.1		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

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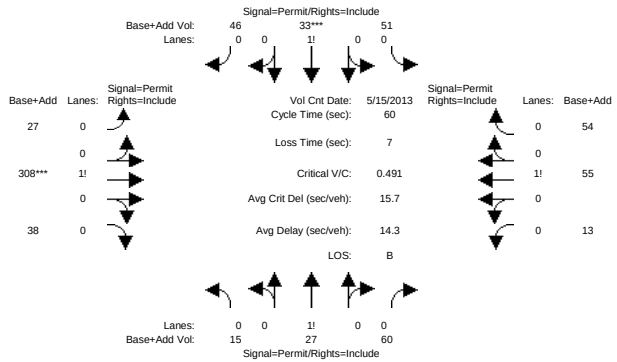
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #54: Broderick/Post



Street Name:	Broderick Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	24	24	24	24	0	29	29	29	0	0	0
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	15	27	60	51	30	46	27	297	38	12	53	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	27	60	51	30	46	27	297	38	12	53	54
Added Vol:	0	0	0	0	3	0	0	11	0	1	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	27	60	51	33	46	27	308	38	13	55	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	17	30	67	57	37	52	30	346	43	15	62	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	30	67	57	37	52	30	346	43	15	62	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	30	67	57	37	52	30	346	43	15	62	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.64	0.61	0.62	0.60	0.72	0.72	0.71	0.67	0.67	0.66
Lanes:	0.15	0.26	0.59	0.39	0.25	0.36	0.07	0.83	0.10	0.10	0.45	0.45
Final Sat.:	181	326	724	454	294	409	99	1127	139	134	568	558
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.13	0.13	0.13	0.31	0.31	0.31	0.11	0.11	0.11
Crit Moves:					****			****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.23	0.23	0.23	0.32	0.32	0.32	0.64	0.64	0.64	0.22	0.22	0.22
Uniform Del:	11.9	11.9	11.9	12.4	12.4	12.4	11.6	11.6	11.6	9.0	9.0	9.0
IncremntDel:	1.1	1.1	1.1	1.8	1.8	1.8	4.6	4.6	4.6	0.9	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.0	13.0	13.0	14.1	14.1	14.1	16.2	16.2	16.2	9.8	9.8	9.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.0	13.0	13.0	14.1	14.1	14.1	16.2	16.2	16.2	9.8	9.8	9.8
LOS by Move:	B	B	B	B	B	B	B	B	B	A	A	A
HCM2kAvgQ:	2	2	2	2	2	2	7	7	7	2	2	2

Note: Queue reported is the number of cars per lane.

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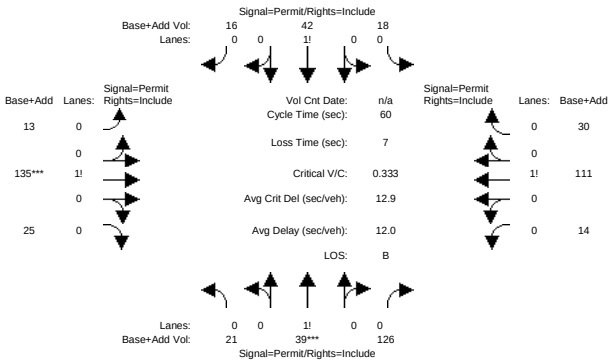
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #54: Broderick/Post



Street Name:	Broderick Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	24	24	24	24	0	29	29	29	0	0	0
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	21	39	126	18	37	16	13	134	25	13	107	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	39	126	18	37	16	13	134	25	13	107	30
Added Vol:	0	0	0	0	5	0	0	1	0	1	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	39	126	18	42	16	13	135	25	14	111	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	22	41	133	19	44	17	14	142	26	15	117	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	41	133	19	44	17	14	142	26	15	117	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	41	133	19	44	17	14	142	26	15	117	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.64	0.67	0.68	0.67	0.72	0.72	0.71	0.71	0.71	0.70
Lanes:	0.11	0.20	0.69	0.24	0.55	0.21	0.07	0.78	0.15	0.09	0.72	0.19
Final Sat.:	138	257	829	303	706	269	102	1062	197	122	964	260
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.06	0.06	0.06	0.13	0.13	0.13	0.12	0.12	0.12
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.40	0.40	0.40	0.16	0.16	0.16	0.28	0.28	0.28	0.25	0.25	0.25
Uniform Del:	12.9	12.9	12.9	11.5	11.5	11.5	9.2	9.2	9.2	9.1	9.1	9.1
IncremntDel:	2.4	2.4	2.4	0.7	0.7	0.7	1.0	1.0	1.0	0.9	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	12.2	12.2	12.2	10.3	10.3	10.3	10.0	10.0	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	12.2	12.2	12.2	10.3	10.3	10.3	10.0	10.0	10.0
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	3	3	3	1	1	1	2	2	2	2	2	2

Note: Queue reported is the number of cars per lane.

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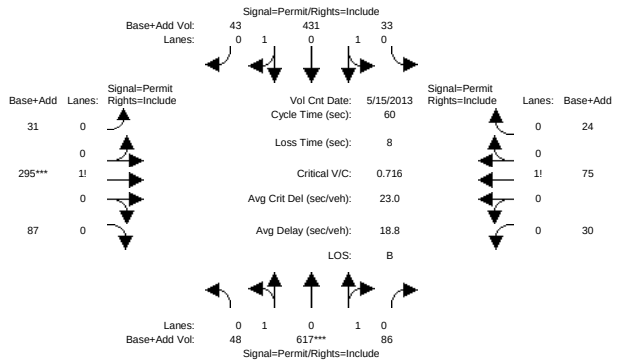
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #55: Divisadero/Post



Street Name:	Divisadero Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	44	560	83	33	427	39	25	284	84	30	73	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	560	83	33	427	39	25	284	84	30	73	24
Added Vol:	4	57	3	0	4	4	6	11	3	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	617	86	33	431	43	31	295	87	30	75	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	49	630	88	34	440	44	32	301	89	31	77	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	630	88	34	440	44	32	301	89	31	77	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	630	88	34	440	44	32	301	89	31	77	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.66	0.66	0.66	0.66	0.70	0.71	0.67	0.63	0.64	0.62
Lanes:	0.13	1.64	0.23	0.13	1.70	0.17	0.07	0.71	0.22	0.23	0.58	0.19
Final Sat.:	162	2087	291	164	2141	214	99	945	279	281	703	225
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.30	0.21	0.21	0.21	0.32	0.32	0.32	0.11	0.11	0.11
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.58	0.58	0.58	0.40	0.40	0.40	0.91	0.91	0.91	0.31	0.31	0.31
Uniform Del:	10.0	10.0	10.0	8.8	8.8	8.8	18.6	18.6	18.6	14.2	14.2	14.2
IncremntDel:	1.9	1.9	1.9	0.9	0.9	0.9	24.5	24.5	24.5	1.9	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.9	11.9	11.9	9.7	9.7	9.7	43.1	43.1	43.1	16.1	16.1	16.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.9	11.9	11.9	9.7	9.7	9.7	43.1	43.1	43.1	16.1	16.1	16.1
LOS by Move:	B	B	B	A	A	A	D	D	D	B	B	B
HCM2kAvgQ:	5	5	5	3	3	3	12	12	11	2	2	2

Note: Queue reported is the number of cars per lane.

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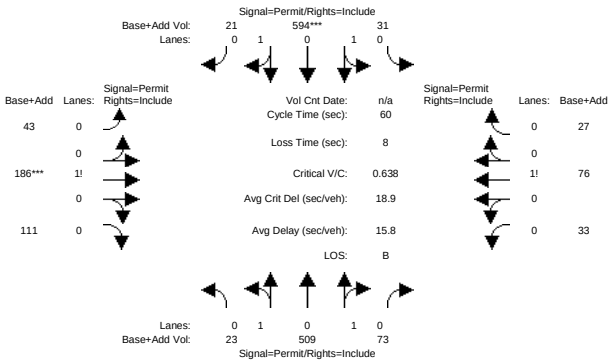
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #55: Divisadero/Post



Street Name:	Divisadero Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	22	495	71	31	587	20	28	180	105	33	76	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	495	71	31	587	20	28	180	105	33	76	26
Added Vol:	1	14	2	0	7	1	15	6	6	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	509	73	31	594	21	43	186	111	33	76	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	24	541	78	33	632	22	46	198	118	35	81	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	541	78	33	632	22	46	198	118	35	81	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	541	78	33	632	22	46	198	118	35	81	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.67	0.69	0.69	0.68	0.67	0.68	0.63	0.62	0.64	0.62
Lanes:	0.08	1.68	0.24	0.10	1.84	0.06	0.12	0.54	0.34	0.25	0.55	0.20
Final Sat.:	99	2185	313	125	2400	85	158	684	408	291	670	238
Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.25	0.26	0.26	0.26	0.29	0.29	0.29	0.12	0.12	0.12
Crit Moves:					****			****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.48	0.48	0.48	0.51	0.51	0.51	0.83	0.83	0.83	0.34	0.34	0.34
Uniform Del:	9.3	9.3	9.3	9.5	9.5	9.5	17.8	17.8	17.8	14.4	14.4	14.4
IncremntDel:	1.2	1.2	1.2	1.4	1.4	1.4	16.2	16.2	16.2	2.2	2.2	2.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.5	10.5	10.5	10.9	10.9	10.9	34.1	34.1	34.1	16.7	16.7	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.5	10.5	10.5	10.9	10.9	10.9	34.1	34.1	34.1	16.7	16.7	16.7
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	4	4	4	5	5	5	9	9	9	2	2	2

Note: Queue reported is the number of cars per lane.

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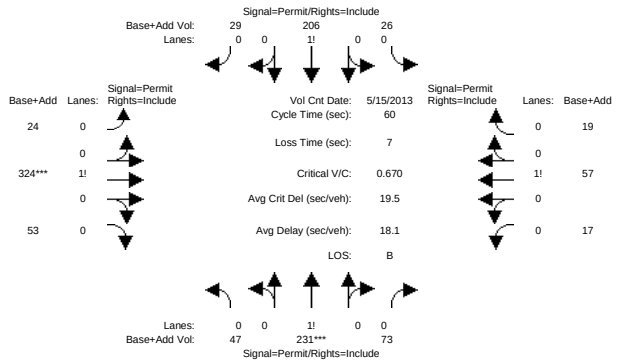
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #56: Scott/Post



Street Name:	Scott Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	29	29	29	29	29	29
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	47	213	73	26	197	29	17	321	50	16	55	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	213	73	26	197	29	17	321	50	16	55	15
Added Vol:	0	18	0	0	9	0	7	3	3	1	2	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	231	73	26	206	29	24	324	53	17	57	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	49	241	76	27	215	30	25	338	55	18	59	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	241	76	27	215	30	25	338	55	18	59	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	241	76	27	215	30	25	338	55	18	59	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.68	0.66	0.69	0.70	0.69	0.72	0.72	0.71	0.66	0.67	0.66
Lanes:	0.13	0.66	0.21	0.10	0.79	0.11	0.06	0.81	0.13	0.18	0.61	0.21
Final Sat.:	171	840	266	132	1044	147	82	1104	181	232	776	259
Capacity Analysis Module:												
Vol/Sat:	0.29	0.29	0.29	0.21	0.21	0.21	0.31	0.31	0.31	0.08	0.08	0.08
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.72	0.72	0.72	0.51	0.51	0.51	0.63	0.63	0.63	0.16	0.16	0.16
Uniform Del:	15.1	15.1	15.1	13.6	13.6	13.6	11.5	11.5	11.5	8.7	8.7	8.7
IncremntDel:	8.3	8.3	8.3	3.5	3.5	3.5	4.6	4.6	4.6	0.6	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	23.5	23.5	23.5	17.1	17.1	17.1	16.1	16.1	16.1	9.2	9.2	9.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.5	23.5	23.5	17.1	17.1	17.1	16.1	16.1	16.1	9.2	9.2	9.2
LOS by Move:	C	C	C	B	B	B	B	B	B	A	A	A
HCM2kAvgQ:	7	7	7	4	4	4	6	6	5	1	1	1

Note: Queue reported is the number of cars per lane.

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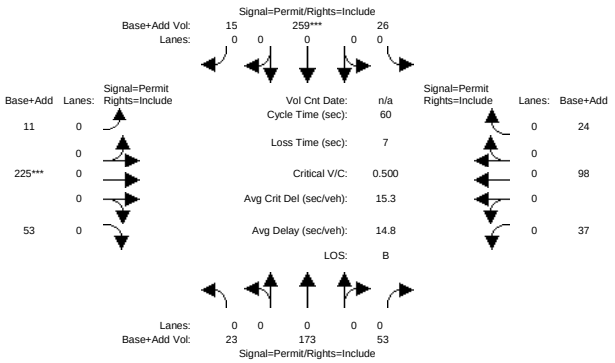
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #56: Scott/Post



Street Name:	Scott Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	29	29	29	29	29	29
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	23	171	53	26	250	14	9	219	53	37	98	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	171	53	26	250	14	9	219	53	37	98	24
Added Vol:	0	2	0	0	9	1	2	6	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	173	53	26	259	15	11	225	53	37	98	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	23	177	54	27	264	15	11	230	54	38	100	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	177	54	27	264	15	11	230	54	38	100	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	177	54	27	264	15	11	230	54	38	100	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.69	0.68	0.71	0.71	0.71	0.72	0.72	0.71	0.65	0.66	0.65
Lanes:	0.09	0.69	0.22	0.09	0.86	0.05	0.04	0.77	0.19	0.23	0.62	0.15
Final Sat.:	122	914	280	118	1171	68	52	1063	250	289	766	188
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.23	0.23	0.23	0.22	0.22	0.22	0.13	0.13	0.13
Crit Moves:					****			****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.48	0.48	0.48	0.56	0.56	0.56	0.45	0.45	0.45	0.27	0.27	0.27
Uniform Del:	13.4	13.4	13.4	13.9	13.9	13.9	10.2	10.2	10.2	9.2	9.2	9.2
IncremntDel:	3.2	3.2	3.2	4.2	4.2	4.2	2.2	2.2	2.2	1.1	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	16.5	16.5	16.5	18.1	18.1	18.1	12.4	12.4	12.4	10.3	10.3	10.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.5	16.5	16.5	18.1	18.1	18.1	12.4	12.4	12.4	10.3	10.3	10.3
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	5	5	5	3	3	3	2	2	2

Note: Queue reported is the number of cars per lane.

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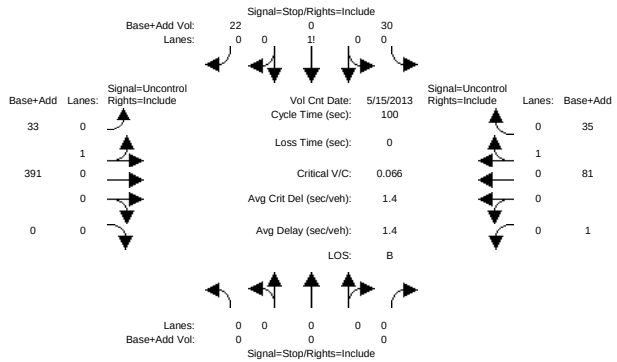
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #57: Pierce/Post



Street Name: Pierce Street Post Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	0	0	30	0	22	33	387	0	1	74	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	30	0	22	33	387	0	1	74	35
Added Vol:	0	0	0	0	0	0	0	4	0	0	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	30	0	22	33	391	0	1	81	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	31	0	23	34	407	0	1	84	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	31	0	23	34	407	0	1	84	36
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	581	581	103	121	xxxx	xxxxx	407	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	479	428	958	1479	xxxx	xxxxx	1162	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	470	418	958	1479	xxxx	xxxxx	1162	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.07	0.00	0.02	0.02	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	599	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	11.6	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			11.6			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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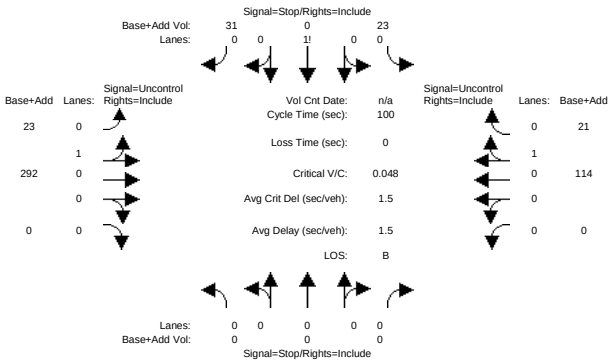
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #57: Pierce/Post



Street Name: Pierce Street Post Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	23	0	31	23	286	0	0	113	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	23	0	31	23	286	0	0	113	21
Added Vol:	0	0	0	0	0	0	0	6	0	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	23	0	31	23	292	0	0	114	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	25	0	34	25	317	0	0	124	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	25	0	34	25	317	0	0	124	23
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	503	503	135	147	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	528	471	913	1435	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	521	463	913	1435	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.05	0.00	0.04	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	692	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	10.7	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			10.7			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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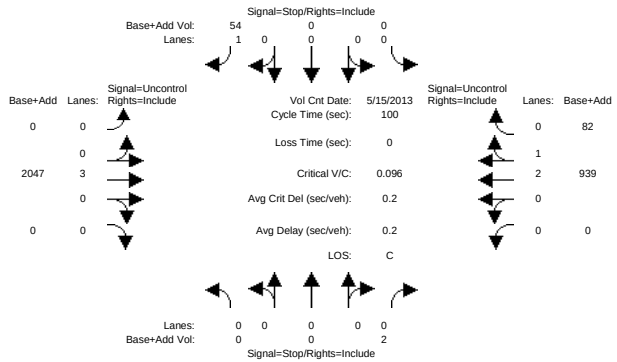
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project AM

Intersection #58: Broderick / Geary




```
Street Name:         Broderick Street                Geary Blvd
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am
Base Vol:       0    0     2     0    0    51     0 2045     0     0  932    82
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     2     0    0    51     0 2045     0     0  932    82
Added Vol:      0    0     0     0    0     3     0    2     0     0    7     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     2     0    0    54     0 2047     0     0  939    82
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     2     0    0    59     0 2225     0     0 1021    89
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     2     0    0    59     0 2225     0     0 1021    89
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   742  xxxx xxxx   385  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   358  xxxx xxxx   613  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   358  xxxx xxxx   613  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.01  xxxx xxxx  0.10  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.0  xxxx xxxx   0.3  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  15.1 xxxxx xxxx  11.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     C     *    *     B     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.1            11.5           xxxxxx           xxxxxx
ApproachLOS:         C               B                *                *
Note: Queue reported is the number of cars per lane.
```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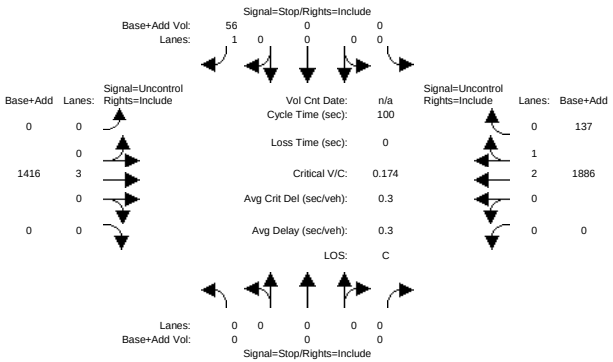
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Existing Plus Project PM

Intersection #58: Broderick / Geary




```
Street Name:         Broderick Street                Geary Blvd
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0    50     0 1416     0     0 1873   137
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0    50     0 1416     0     0 1873   137
Added Vol:      0    0     0     0    0     6     0    0     0     0   13     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0     0    0    56     0 1416     0     0 1886   137
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0     0    0    61     0 1539     0     0 2050   149
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     0    0    61     0 1539     0     0 2050   149
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx   758  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx   350  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx   350  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  0.17  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.6  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  17.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     C     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx            17.5           xxxxxx           xxxxxx
ApproachLOS:         *               C                *                *
Note: Queue reported is the number of cars per lane.
```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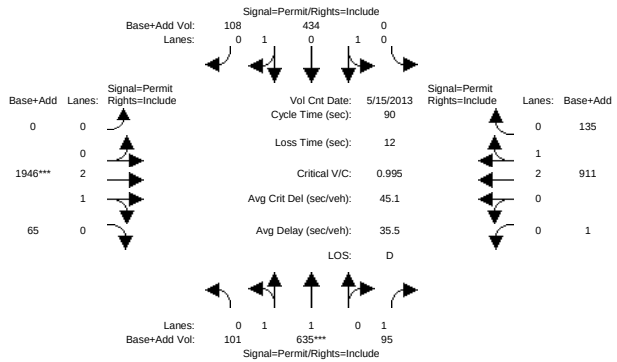
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #59: Divisadero/Geary



Street Name:	Divisadero Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	32	32	32	32	32	32	46	46	46	46	46	46
Y+R:	7.0	7.0	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	101	619	95	0	430	105	0	1946	63	1	907	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	619	95	0	430	105	0	1946	63	1	907	88
Added Vol:	0	16	0	0	4	3	0	0	2	0	4	47
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	101	635	95	0	434	108	0	1946	65	1	911	135
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	106	668	100	0	457	114	0	2048	68	1	959	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	668	100	0	457	114	0	2048	68	1	959	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	668	100	0	457	114	0	2048	68	1	959	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.57	0.57	0.55	0.95	0.73	0.70	1.00	0.74	0.73	0.68	0.68	0.67
Lanes:	0.28	1.72	1.00	0.00	1.59	0.41	0.00	2.90	0.10	0.01	2.60	0.39
Final Sat.:	297	1870	1037	0	2204	548	0	4054	135	4	3373	500
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.10	0.00	0.21	0.21	0.00	0.51	0.51	0.28	0.28	0.28
Crit Moves:		****						****				
Green/Cycle:	0.36	0.36	0.36	0.00	0.36	0.36	0.00	0.51	0.51	0.51	0.51	0.51
Volume/Cap:	1.01	1.01	0.27	0.00	0.58	0.58	0.00	0.99	0.99	0.56	0.56	0.56
Uniform Del:	29.0	29.0	20.7	0.0	23.6	23.6	0.0	21.7	21.7	15.0	15.0	15.0
IncremntDel:	33.7	33.7	1.8	0.0	2.5	2.5	0.0	17.0	17.0	1.1	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	62.7	62.7	22.5	0.0	26.1	26.1	0.0	38.7	38.7	16.2	16.2	16.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.7	62.7	22.5	0.0	26.1	26.1	0.0	38.7	38.7	16.2	16.2	16.2
LOS by Move:	E	E	C	A	C	C	A	D	D	B	B	B
HCM2kAvgQ:	17	17	2	0	7	7	0	28	28	8	8	8

Note: Queue reported is the number of cars per lane.

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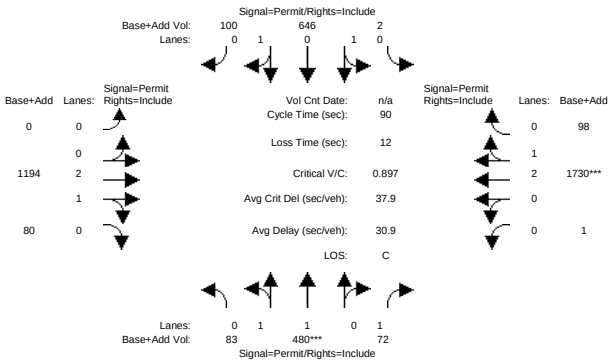
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #59: Divisadero/Geary



Street Name:	Divisadero Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	34	34	34	34	34	34	44	44	44	44	44	44
Y+R:	7.0	7.0	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	83	479	72	1	639	95	0	1194	80	1	1722	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	479	72	1	639	95	0	1194	80	1	1722	82
Added Vol:	0	1	0	1	7	5	0	0	0	0	8	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	480	72	2	646	100	0	1194	80	1	1730	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	86	495	74	2	666	103	0	1231	82	1	1784	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	495	74	2	666	103	0	1231	82	1	1784	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	495	74	2	666	103	0	1231	82	1	1784	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.51	0.52	0.56	0.70	0.70	0.69	1.00	0.73	0.72	0.69	0.69	0.69
Lanes:	0.30	1.70	1.00	0.01	1.72	0.27	0.00	2.81	0.19	0.01	2.83	0.16
Final Sat.:	288	1668	1059	7	2297	356	0	3907	262	2	3713	210
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.07	0.29	0.29	0.29	0.00	0.32	0.32	0.48	0.48	0.48
Crit Moves:		****									****	
Green/Cycle:	0.38	0.38	0.38	0.38	0.38	0.38	0.00	0.49	0.49	0.49	0.49	0.49
Volume/Cap:	0.79	0.79	0.19	0.77	0.77	0.77	0.00	0.64	0.64	0.98	0.98	0.98
Uniform Del:	24.8	24.8	18.7	24.5	24.5	24.5	0.0	17.2	17.2	22.6	22.6	22.6
IncremntDel:	8.2	8.2	1.0	5.6	5.6	5.6	0.0	1.6	1.6	16.8	16.8	16.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	33.0	33.0	19.8	30.1	30.1	30.1	0.0	18.7	18.7	39.4	39.4	39.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.0	33.0	19.8	30.1	30.1	30.1	0.0	18.7	18.7	39.4	39.4	39.4
LOS by Move:	C	C	B	C	C	C	A	B	B	D	D	D
HCM2kAvgQ:	10	10	1	11	11	11	0	11	11	26	26	25

Note: Queue reported is the number of cars per lane.

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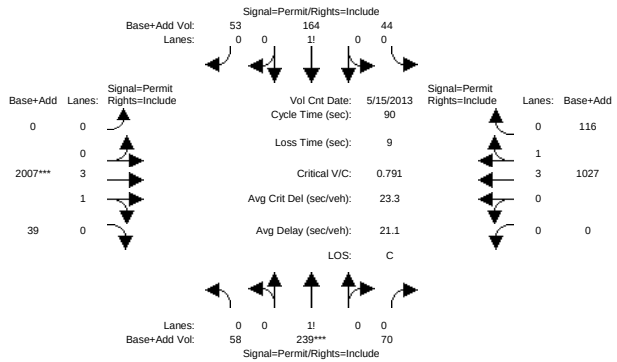
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #60: Scott/Geary



Street Name:	Scott Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	35	35	35	35	35	35	41	41	41	41	41	41
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 7:45-8:45am												
Base Vol:	55	236	70	43	164	42	0	2007	39	0	971	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	236	70	43	164	42	0	2007	39	0	971	101
Added Vol:	3	3	0	1	0	11	0	0	0	0	56	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	58	239	70	44	164	53	0	2007	39	0	1027	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	63	260	76	48	178	58	0	2182	42	0	1116	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	260	76	48	178	58	0	2182	42	0	1116	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	260	76	48	178	58	0	2182	42	0	1116	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.65	0.64	0.64	0.64	1.00	0.75	0.74	1.00	0.74	0.73
Lanes:	0.16	0.65	0.19	0.17	0.63	0.20	0.00	3.92	0.08	0.00	3.59	0.41
Final Sat.:	197	814	238	206	768	248	0	5560	108	0	5029	568
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.23	0.23	0.23	0.00	0.39	0.39	0.00	0.22	0.22
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.50	0.50	0.00	0.50	0.50
Volume/Cap:	0.79	0.79	0.79	0.58	0.58	0.58	0.00	0.79	0.79	0.00	0.45	0.45
Uniform Del:	23.5	23.5	23.5	20.8	20.8	20.8	0.0	18.8	18.8	0.0	14.7	14.7
IncremntDel:	12.0	12.0	12.0	4.8	4.8	4.8	0.0	2.4	2.4	0.0	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	35.5	35.5	35.5	25.6	25.6	25.6	0.0	21.2	21.2	0.0	15.2	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.5	35.5	35.5	25.6	25.6	25.6	0.0	21.2	21.2	0.0	15.2	15.2
LOS by Move:	D	D	D	C	C	C	A	C	C	A	B	B
HCM2kAvgQ:	12	12	12	7	7	7	0	16	16	0	6	6

Note: Queue reported is the number of cars per lane.

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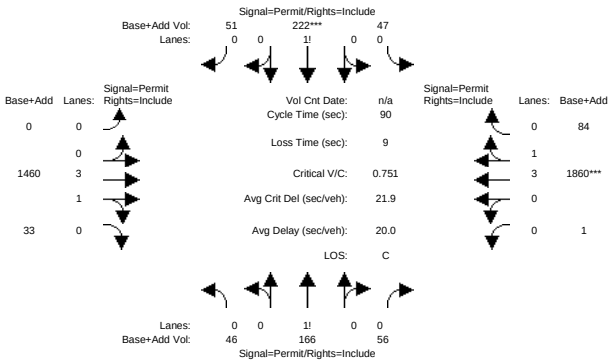
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #60: Scott/Geary



Street Name:	Scott Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	35	35	35	35	35	35	41	41	41	41	41	41
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	46	166	56	45	221	45	0	1459	33	1	1853	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	166	56	45	221	45	0	1459	33	1	1853	82
Added Vol:	0	0	0	2	1	6	0	1	0	0	7	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	166	56	47	222	51	0	1460	33	1	1860	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	180	61	51	241	55	0	1587	36	1	2022	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	180	61	51	241	55	0	1587	36	1	2022	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	180	61	51	241	55	0	1587	36	1	2022	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.64	0.67	0.67	0.66	1.00	0.75	0.74	0.69	0.69	0.69
Lanes:	0.17	0.62	0.21	0.15	0.69	0.16	0.00	3.91	0.09	0.01	3.82	0.17
Final Sat.:	211	761	257	186	878	202	0	5543	125	3	5042	228
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.27	0.27	0.27	0.00	0.29	0.29	0.40	0.40	0.40
Crit Moves:					****						****	
Green/Cycle:	0.39	0.39	0.39	0.39	0.39	0.39	0.00	0.51	0.51	0.51	0.51	0.51
Volume/Cap:	0.61	0.61	0.61	0.71	0.71	0.71	0.00	0.56	0.56	0.78	0.78	0.78
Uniform Del:	22.0	22.0	22.0	23.2	23.2	23.2	0.0	15.1	15.1	18.0	18.0	18.0
IncremntDel:	5.7	5.7	5.7	8.3	8.3	8.3	0.0	0.8	0.8	2.4	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	27.7	27.7	27.7	31.4	31.4	31.4	0.0	15.9	15.9	20.3	20.3	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.7	27.7	27.7	31.4	31.4	31.4	0.0	15.9	15.9	20.3	20.3	20.3
LOS by Move:	C	C	C	C	C	C	A	B	B	C	C	C
HCM2kAvgQ:	7	7	7	9	9	9	0	9	9	15	15	15

Note: Queue reported is the number of cars per lane.

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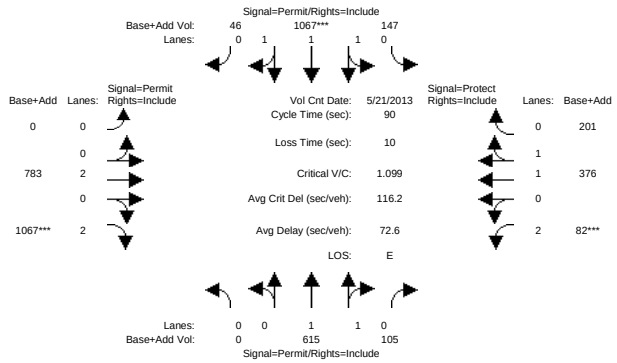
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #61: S Van Ness/13th Street



Street Name:	S Van Ness						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	30	30	30	30	0	39	39	39	7	0	50
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	10.0	10.0	10.0	5.0	4.0	5.0
Volume Module: >> Count Date: 21 May 2013 << 8:00-9:00am												
Base Vol:	0	615	105	147	1053	46	0	783	1067	82	376	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	615	105	147	1053	46	0	783	1067	82	376	200
Added Vol:	0	0	0	0	14	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	615	105	147	1067	46	0	783	1067	82	376	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	654	112	156	1135	49	0	833	1135	87	400	214
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	654	112	156	1135	49	0	833	1135	87	400	214
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	654	112	156	1135	49	0	833	1135	87	400	214
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.74	0.74	0.50	0.50	0.50	1.00	0.81	0.63	0.79	0.77	0.76
Lanes:	0.00	1.71	0.29	0.35	2.54	0.11	0.00	2.00	2.00	2.00	1.30	0.70
Final Sat.:	0	2409	411	331	2405	104	0	3079	2386	2987	1895	1013
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.47	0.47	0.47	0.00	0.27	0.48	0.03	0.21	0.21
Crit Moves:					****				****	****		
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.38	0.00	0.43	0.43	0.08	0.51	0.51
Volume/Cap:	0.00	0.72	0.72	1.25	1.25	1.25	0.00	0.62	1.10	0.38	0.41	0.41
Uniform Del:	0.0	23.9	23.9	28.0	28.0	28.0	0.0	19.8	25.5	39.4	13.6	13.6
IncremntDel:	0.0	4.2	4.2	120.0	120	120.0	0.0	2.2	58.7	4.6	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	28.1	28.1	148.0	148	148.0	0.0	22.0	84.2	44.0	14.5	14.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.1	28.1	148.0	148	148.0	0.0	22.0	84.2	44.0	14.5	14.5
LOS by Move:	A	C	C	F	F	F	A	C	F	D	B	B
HCM2kAvgQ:	0	10	10	27	27	27	0	10	29	1	6	5

Note: Queue reported is the number of cars per lane.

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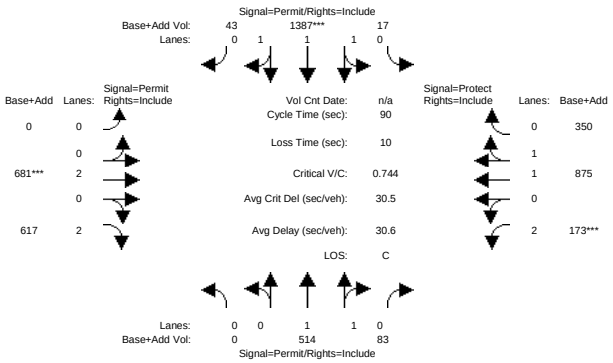
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #61: S Van Ness/13th Street



Street Name:	S Van Ness						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	35	35	35	35	0	34	34	34	7	0	45
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	10.0	10.0	10.0	5.0	4.0	5.0
Volume Module:												
Base Vol:	0	508	83	17	1386	43	0	681	617	173	875	331
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	508	83	17	1386	43	0	681	617	173	875	331
Added Vol:	0	6	0	0	1	0	0	0	0	0	0	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	514	83	17	1387	43	0	681	617	173	875	350
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	524	85	17	1415	44	0	695	630	177	893	357
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	524	85	17	1415	44	0	695	630	177	893	357
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	524	85	17	1415	44	0	695	630	177	893	357
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.74	0.74	0.69	0.69	0.69	1.00	0.81	0.61	0.79	0.78	0.76
Lanes:	0.00	1.72	0.28	0.03	2.88	0.09	0.00	2.00	2.00	2.00	1.42	0.58
Final Sat.:	0	2430	392	46	3760	117	0	3079	2315	2987	2093	837
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.38	0.38	0.38	0.00	0.23	0.27	0.06	0.43	0.43
Crit Moves:					****				****	****		
Green/Cycle:	0.00	0.43	0.43	0.43	0.43	0.43	0.00	0.38	0.38	0.08	0.46	0.46
Volume/Cap:	0.00	0.50	0.50	0.87	0.87	0.87	0.00	0.60	0.72	0.76	0.94	0.94
Uniform Del:	0.0	18.4	18.4	23.2	23.2	23.2	0.0	22.5	23.9	40.7	23.3	23.3
IncremntDel:	0.0	1.5	1.5	6.3	6.3	6.3	0.0	2.3	5.1	20.6	13.5	13.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	19.9	19.9	29.5	29.5	29.5	0.0	24.8	29.0	61.3	36.7	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.9	19.9	29.5	29.5	29.5	0.0	24.8	29.0	61.3	36.7	36.7
LOS by Move:	A	B	B	C	C	C	A	C	C	E	D	D
HCM2kAvgQ:	0	7	6	16	16	16	0	9	10	2	18	18

Note: Queue reported is the number of cars per lane.

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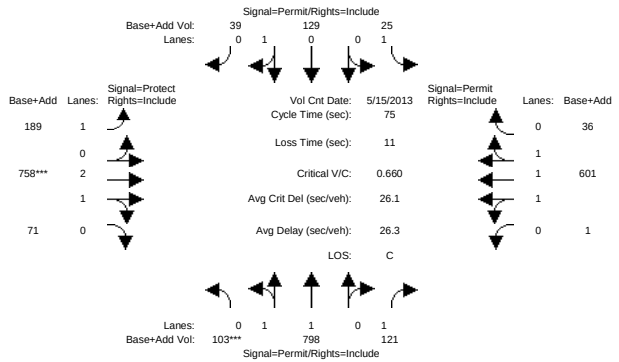
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #62: 13th St / Folsom



Street Name:	Folsom Street						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	29	0	29	29	29	29	10	35	35	21	21	21
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	103	798	121	14	126	39	189	758	71	1	601	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	798	121	14	126	39	189	758	71	1	601	36
Added Vol:	0	0	0	11	3	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	103	798	121	25	129	39	189	758	71	1	601	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	111	858	130	27	139	42	203	815	76	1	646	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	858	130	27	139	42	203	815	76	1	646	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	858	130	27	139	42	203	815	76	1	646	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.54	0.16	0.72	0.72	0.81	0.77	0.76	0.69	0.69	0.69
Lanes:	0.23	1.77	1.00	1.00	0.77	0.23	1.00	2.74	0.26	0.01	2.82	0.17
Final Sat.:	309	2391	1027	303	1049	317	1539	3990	374	6	3716	223
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.13	0.09	0.13	0.13	0.13	0.20	0.20	0.17	0.17	0.17
Crit Moves:	****							****				
Green/Cycle:	0.39	0.39	0.39	0.39	0.39	0.39	0.19	0.47	0.47	0.28	0.28	0.28
Volume/Cap:	0.93	0.93	0.33	0.23	0.34	0.34	0.71	0.44	0.44	0.62	0.62	0.62
Uniform Del:	22.0	22.0	16.2	15.5	16.3	16.3	28.6	13.4	13.4	23.5	23.5	23.5
IncremntDel:	15.1	15.1	2.2	4.5	1.8	1.8	13.7	0.7	0.7	2.6	2.6	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.1	37.1	18.3	20.0	18.0	18.0	42.3	14.1	14.1	26.2	26.2	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.1	37.1	18.3	20.0	18.0	18.0	42.3	14.1	14.1	26.2	26.2	26.2
LOS by Move:	D	D	B	B	B	B	D	B	B	C	C	C
HCM2kAvgQ:	14	14	2	1	3	3	5	5	5	5	5	5

Note: Queue reported is the number of cars per lane.

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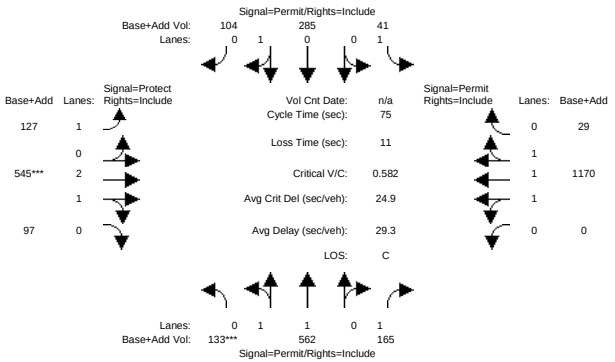
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #62: 13th St / Folsom



Street Name:	Folsom Street						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	29	0	29	29	29	29	7	35	35	24	24	24
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	127	562	165	41	285	104	127	545	97	0	1158	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	562	165	41	285	104	127	545	97	0	1158	29
Added Vol:	6	0	0	0	0	0	0	0	0	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	562	165	41	285	104	127	545	97	0	1170	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	136	573	168	42	291	106	130	556	99	0	1194	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	573	168	42	291	106	130	556	99	0	1194	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	136	573	168	42	291	106	130	556	99	0	1194	30
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.54	0.54	0.58	0.26	0.72	0.70	0.81	0.76	0.75	0.91	0.74	0.74
Lanes:	0.38	1.62	1.00	1.00	0.73	0.27	1.00	2.54	0.46	0.00	2.93	0.07
Final Sat.:	393	1662	1111	493	992	362	1539	3660	651	0	4120	102
Capacity Analysis Module:												
Vol/Sat:	0.35	0.35	0.15	0.08	0.29	0.29	0.08	0.15	0.15	0.00	0.29	0.29
Crit Moves:	****							****				
Green/Cycle:	0.39	0.39	0.39	0.39	0.39	0.39	0.15	0.47	0.47	0.00	0.32	0.32
Volume/Cap:	0.89	0.89	0.39	0.22	0.76	0.76	0.57	0.33	0.33	0.00	0.91	0.91
Uniform Del:	21.5	21.5	16.6	15.4	20.0	20.0	29.8	12.6	12.6	0.0	24.4	24.4
IncremntDel:	14.4	14.4	2.7	2.6	9.9	9.9	10.2	0.4	0.4	0.0	10.3	10.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	36.0	36.0	19.3	18.0	29.8	29.8	40.0	13.0	13.0	0.0	34.7	34.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	36.0	19.3	18.0	29.8	29.8	40.0	13.0	13.0	0.0	34.7	34.7
LOS by Move:	D	D	B	B	B	C	C	D	B	B	A	C	C
HCM2kAvgQ:	10	10	3	1	10	10	3	3	3	0	12	11

Note: Queue reported is the number of cars per lane.

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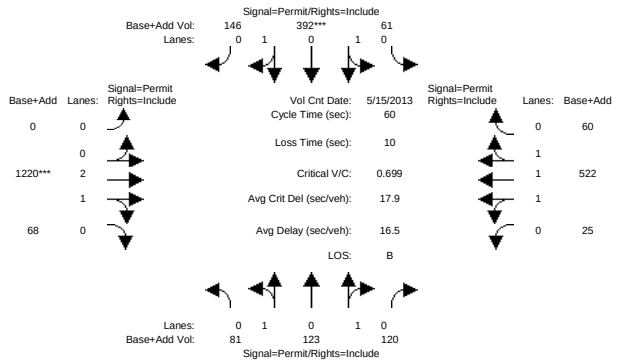
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #63: 13th St / Harrison



Street Name:	Harrison Street								13th Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am																
Base Vol:	81	123	118	61	371	146	0	1220	57	25	522	60				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	81	123	118	61	371	146	0	1220	57	25	522	60				
Added Vol:	0	0	2	0	21	0	0	0	11	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	81	123	120	61	392	146	0	1220	68	25	522	60				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
PHF Volume:	85	129	126	64	413	154	0	1284	72	26	549	63				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	85	129	126	64	413	154	0	1284	72	26	549	63				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	85	129	126	64	413	154	0	1284	72	26	549	63				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.52	0.52	0.50	0.64	0.64	0.63	1.00	0.74	0.73	0.63	0.63	0.62				
Lanes:	0.49	0.74	0.77	0.20	1.31	0.49	0.00	2.84	0.16	0.12	2.58	0.30				
Final Sat.:	485	736	718	247	1588	591	0	3983	222	147	3065	352				
Capacity Analysis Module:																
Vol/Sat:	0.18	0.18	0.18	0.26	0.26	0.26	0.00	0.32	0.32	0.18	0.18	0.18				
Crit Moves:					****			****								
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.00	0.42	0.42	0.42	0.42	0.42				
Volume/Cap:	0.42	0.42	0.42	0.62	0.62	0.62	0.00	0.77	0.77	0.43	0.43	0.43				
Uniform Del:	12.4	12.4	12.4	13.8	13.8	13.8	0.0	15.1	15.1	12.4	12.4	12.4				
IncremntDel:	1.6	1.6	1.6	2.9	2.9	2.9	0.0	3.4	3.4	0.9	0.9	0.9				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00				
Delay/Veh:	14.0	14.0	14.0	16.7	16.7	16.7	0.0	18.5	18.5	13.3	13.3	13.3				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	14.0	14.0	14.0	16.7	16.7	16.7	0.0	18.5	18.5	13.3	13.3	13.3				
LOS by Move:	B	B	B	B	B	B	A	B	B	B	B	B				
HCM2kAvgQ:	3	3	3	6	6	6	0	9	9	3	3	3				

Note: Queue reported is the number of cars per lane.

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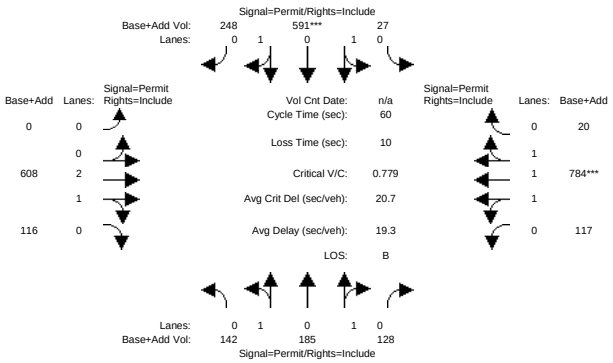
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #63: 13th St / Harrison



Street Name:	Harrison Street								13th Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:																
Base Vol:	130	185	88	27	590	248	0	608	116	117	784	20				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	130	185	88	27	590	248	0	608	116	117	784	20				
Added Vol:	12	0	40	0	1	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	142	185	128	27	591	248	0	608	116	117	784	20				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97				
PHF Volume:	146	191	132	28	609	256	0	627	120	121	808	21				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	146	191	132	28	609	256	0	627	120	121	808	21				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	146	191	132	28	609	256	0	627	120	121	808	21				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.40	0.40	0.39	0.68	0.68	0.66	1.00	0.73	0.72	0.56	0.56	0.56				
Lanes:	0.62	0.81	0.57	0.06	1.36	0.58	0.00	2.52	0.48	0.38	2.55	0.07				
Final Sat.:	467	608	421	79	1740	730	0	3470	662	404	2705	69				
Capacity Analysis Module:																
Vol/Sat:	0.31	0.31	0.31	0.35	0.35	0.35	0.00	0.18	0.18	0.30	0.30	0.30				
Crit Moves:					****						****					
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.00	0.42	0.42	0.42	0.42	0.42				
Volume/Cap:	0.75	0.75	0.75	0.84	0.84	0.84	0.00	0.43	0.43	0.72	0.72	0.72				
Uniform Del:	14.9	14.9	14.9	15.7	15.7	15.7	0.0	12.5	12.5	14.6	14.6	14.6				
IncremntDel:	8.2	8.2	8.2	8.0	8.0	8.0	0.0	0.8	0.8	3.4	3.4	3.4				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00				
Delay/Veh:	23.1	23.1	23.1	23.7	23.7	23.7	0.0	13.3	13.3	17.9	17.9	17.9				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	23.1	23.1	23.1	23.7	23.7	23.7	0.0	13.3	13.3	17.9	17.9	17.9				
LOS by Move:	C	C	C	C	C	C	A	B	B	B	B	B				
HCM2kAvgQ:	6	6	6	11	11	11	0	4	4	6	6	6				

Note: Queue reported is the number of cars per lane.

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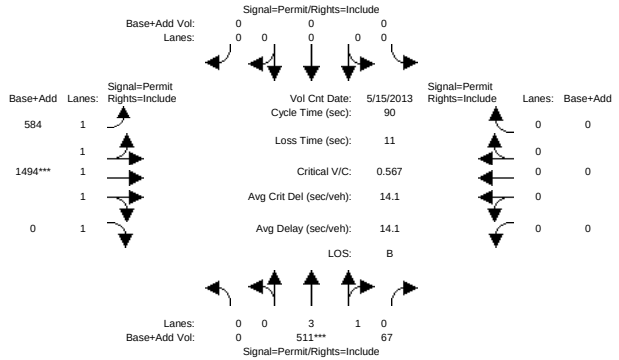
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #64: 10th St / Bryant



Street Name: Bryant Street 10th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	19	19	0	0	0	0	59	59	0	0	0
Y+R:	4.0	5.5	5.5	4.0	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	510	66	0	0	0	584	1494	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	510	66	0	0	0	584	1494	0	0	0	0
Added Vol:	0	1	1	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	511	67	0	0	0	584	1494	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	528	69	0	0	0	604	1545	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	528	69	0	0	0	604	1545	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	528	69	0	0	0	604	1545	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.74	0.68	1.00	1.00	1.00	0.72	0.72	0.91	1.00	1.00	1.00
Lanes:	0.00	3.50	0.50	0.00	0.00	0.00	1.13	2.87	1.00	0.00	0.00	0.00
Final Sat.:	0	4920	645	0	0	0	1547	3957	1729	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.00	0.00	0.00	0.39	0.39	0.00	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.21	0.21	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.51	0.51	0.00	0.00	0.00	0.59	0.59	0.00	0.00	0.00	0.00
Uniform Del:	0.0	31.4	31.4	0.0	0.0	0.0	8.2	8.2	0.0	0.0	0.0	0.0
IncremntDel:	0.0	1.6	1.6	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	33.0	33.0	0.0	0.0	0.0	8.9	8.9	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	33.0	33.0	0.0	0.0	0.0	8.9	8.9	0.0	0.0	0.0	0.0
LOS by Move:	A	C	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	4	4	0	0	0	10	10	0	0	0	0

Note: Queue reported is the number of cars per lane.

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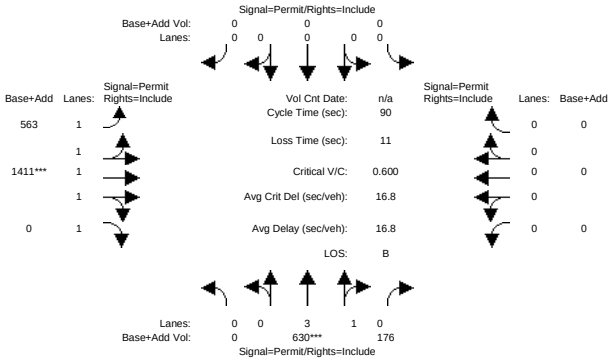
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #64: 10th St / Bryant



Street Name: Bryant Street 10th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	19	19	0	0	0	0	59	59	0	0	0
Y+R:	4.0	5.5	5.5	4.0	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	612	153	0	0	0	563	1411	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	612	153	0	0	0	563	1411	0	0	0	0
Added Vol:	0	18	23	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	630	176	0	0	0	563	1411	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	654	183	0	0	0	585	1465	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	654	183	0	0	0	585	1465	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	654	183	0	0	0	585	1465	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.73	0.66	1.00	1.00	1.00	0.72	0.72	0.91	1.00	1.00	1.00
Lanes:	0.00	3.06	0.94	0.00	0.00	0.00	1.14	2.86	1.00	0.00	0.00	0.00
Final Sat.:	0	4232	1182	0	0	0	1570	3934	1729	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.15	0.00	0.00	0.00	0.37	0.37	0.00	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.22	0.22	0.00	0.00	0.00	0.66	0.66	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.70	0.70	0.00	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.00
Uniform Del:	0.0	32.2	32.2	0.0	0.0	0.0	8.5	8.5	0.0	0.0	0.0	0.0
IncremntDel:	0.0	3.3	3.3	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	35.5	35.5	0.0	0.0	0.0	9.2	9.2	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	35.5	35.5	0.0	0.0	0.0	9.2	9.2	0.0	0.0	0.0	0.0
LOS by Move:	A	D	D	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	7	6	0	0	0	9	9	0	0	0	0

Note: Queue reported is the number of cars per lane.

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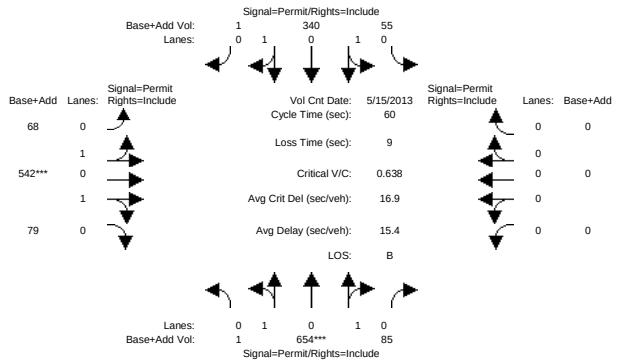
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #65: 14th St / S Van Ness



Street Name:	S Van Ness						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	30	30	30	30	0	21	21	21	0	0	0
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.5	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	1	654	82	41	340	1	68	542	79	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	654	82	41	340	1	68	542	79	0	0	0
Added Vol:	0	0	3	14	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	654	85	55	340	1	68	542	79	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	1	681	89	57	354	1	71	565	82	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	681	89	57	354	1	71	565	82	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	681	89	57	354	1	71	565	82	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.71	0.61	0.61	0.61	0.73	0.74	0.72	1.00	1.00	1.00
Lanes:	0.01	1.76	0.23	0.28	1.71	0.01	0.20	1.57	0.23	0.00	0.00	0.00
Final Sat.:	4	2393	311	321	1982	6	275	2191	319	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.28	0.28	0.28	0.18	0.18	0.18	0.26	0.26	0.26	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.35	0.35	0.00	0.00	0.00
Volume/Cap:	0.57	0.57	0.57	0.36	0.36	0.36	0.74	0.74	0.74	0.00	0.00	0.00
Uniform Del:	10.5	10.5	10.5	9.1	9.1	9.1	17.1	17.1	17.1	0.0	0.0	0.0
IncremntDel:	1.7	1.7	1.7	0.9	0.9	0.9	4.9	4.9	4.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	12.2	12.2	12.2	10.0	10.0	10.0	22.0	22.0	22.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.2	12.2	12.2	10.0	10.0	10.0	22.0	22.0	22.0	0.0	0.0	0.0
LOS by Move:	B	B	B	A	A	A	C	C	C	A	A	A
HCM2kAvgQ:	5	5	5	2	2	2	8	8	8	0	0	0

Note: Queue reported is the number of cars per lane.

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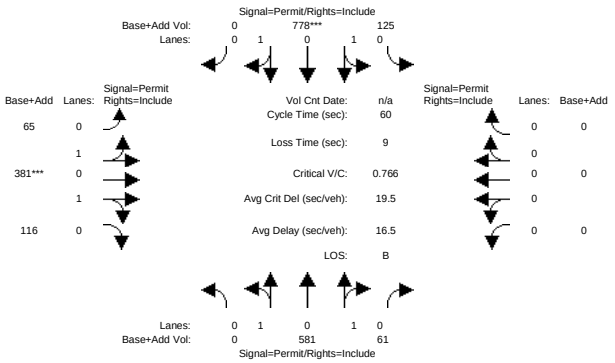
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #65: 14th St / S Van Ness



Street Name:	S Van Ness						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	32	32	32	32	0	19	19	19	0	0	0
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	575	61	124	778	0	65	381	116	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	575	61	124	778	0	65	381	116	0	0	0
Added Vol:	0	6	0	1	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	581	61	125	778	0	65	381	116	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	612	64	132	819	0	68	401	122	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	612	64	132	819	0	68	401	122	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	612	64	132	819	0	68	401	122	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.75	0.74	0.57	0.58	0.95	0.72	0.72	0.71	1.00	1.00	1.00
Lanes:	0.00	1.81	0.19	0.28	1.72	0.00	0.23	1.35	0.42	0.00	0.00	0.00
Final Sat.:	0	2573	270	303	1884	0	317	1856	565	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.24	0.43	0.43	0.00	0.22	0.22	0.22	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.53	0.53	0.53	0.53	0.00	0.32	0.32	0.32	0.00	0.00	0.00
Volume/Cap:	0.00	0.45	0.45	0.82	0.82	0.00	0.68	0.68	0.68	0.00	0.00	0.00
Uniform Del:	0.0	8.6	8.6	11.6	11.6	0.0	17.9	17.9	17.9	0.0	0.0	0.0
IncremntDel:	0.0	1.0	1.0	6.3	6.3	0.0	4.3	4.3	4.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	9.5	9.5	17.9	17.9	0.0	22.2	22.2	22.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.5	9.5	17.9	17.9	0.0	22.2	22.2	22.2	0.0	0.0	0.0
LOS by Move:	A	A	A	B	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	4	4	8	8	0	6	6	6	0	0	0

Note: Queue reported is the number of cars per lane.

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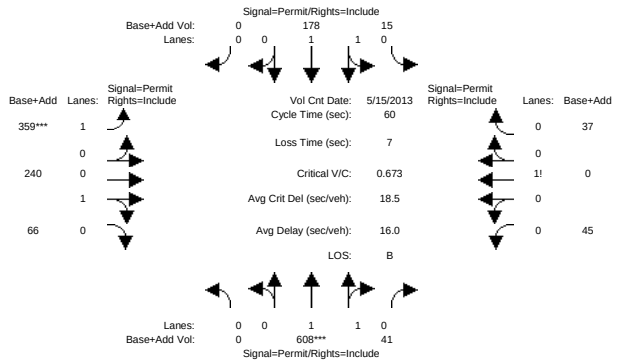
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #66: 14th St / Folsom



Street Name:	Folsom Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	22	22	22	22	0	21	21	21	7	0	7
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	4.0	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	608	38	12	178	0	359	223	66	45	0	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	608	38	12	178	0	359	223	66	45	0	37
Added Vol:	0	0	3	3	0	0	0	17	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	608	41	15	178	0	359	240	66	45	0	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	654	44	16	191	0	386	258	71	48	0	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	654	44	16	191	0	386	258	71	48	0	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	654	44	16	191	0	386	258	71	48	0	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.74	0.68	0.68	1.00	0.58	0.72	0.71	0.54	1.00	0.54
Lanes:	0.00	1.87	0.13	0.16	1.84	0.00	1.00	0.78	0.22	0.55	0.00	0.45
Final Sat.:	0	2678	181	200	2377	0	1103	1071	294	562	0	462
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.24	0.08	0.08	0.00	0.35	0.24	0.24	0.09	0.00	0.09
Crit Moves:		****					****					
Green/Cycle:	0.00	0.37	0.37	0.37	0.37	0.00	0.52	0.52	0.52	0.52	0.00	0.52
Volume/Cap:	0.00	0.67	0.67	0.22	0.22	0.00	0.68	0.47	0.47	0.17	0.00	0.17
Uniform Del:	0.0	15.9	15.9	13.1	13.1	0.0	10.8	9.2	9.2	7.7	0.0	7.7
IncremntDel:	0.0	3.3	3.3	0.5	0.5	0.0	6.3	2.2	2.2	0.7	0.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	19.3	19.3	13.6	13.6	0.0	17.1	11.4	11.4	8.3	0.0	8.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.3	19.3	13.6	13.6	0.0	17.1	11.4	11.4	8.3	0.0	8.3
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	7	7	1	1	0	5	4	4	1	0	1

Note: Queue reported is the number of cars per lane.

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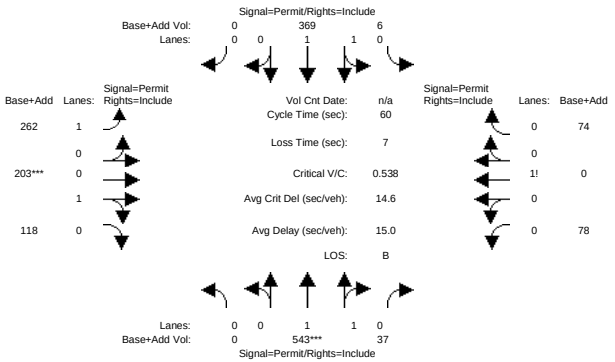
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #66: 14th St / Folsom



Street Name:	Folsom Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	29	29	29	29	0	24	24	24	9	0	9
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	4.0	3.5
Volume Module:												
Base Vol:	0	537	37	6	369	0	262	202	118	78	0	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	537	37	6	369	0	262	202	118	78	0	74
Added Vol:	0	6	0	0	0	0	0	1	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	543	37	6	369	0	262	203	118	78	0	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	578	39	6	393	0	279	216	126	83	0	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	578	39	6	393	0	279	216	126	83	0	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	578	39	6	393	0	279	216	126	83	0	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.74	0.71	0.71	1.00	0.56	0.71	0.68	0.50	1.00	0.49
Lanes:	0.00	1.87	0.13	0.03	1.97	0.00	1.00	0.62	0.38	0.51	0.00	0.49
Final Sat.:	0	2674	182	43	2666	0	1058	834	485	483	0	459
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.15	0.15	0.00	0.26	0.26	0.26	0.17	0.00	0.17
Crit Moves:		****						****				
Green/Cycle:	0.00	0.48	0.48	0.48	0.48	0.00	0.40	0.40	0.40	0.40	0.00	0.40
Volume/Cap:	0.00	0.45	0.45	0.30	0.30	0.00	0.66	0.65	0.65	0.43	0.00	0.43
Uniform Del:	0.0	10.2	10.2	9.4	9.4	0.0	14.7	14.6	14.6	13.0	0.0	13.0
IncremntDel:	0.0	1.0	1.0	0.6	0.6	0.0	7.8	6.0	6.0	3.5	0.0	3.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	11.3	11.3	10.0	10.0	0.0	22.5	20.6	20.6	16.6	0.0	16.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.3	11.3	10.0	10.0	0.0	22.5	20.6	20.6	16.6	0.0	16.6
LOS by Move:	A	B	B	A	A	A	C	C	C	B	A	B
HCM2kAvgQ:	0	4	4	2	2	0	4	5	5	3	0	3

Note: Queue reported is the number of cars per lane.

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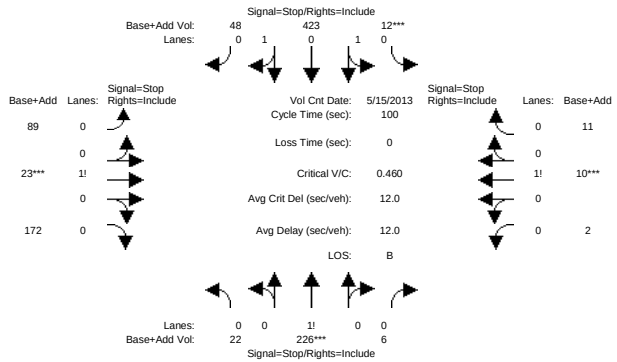
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #67: 14th St / Harrison



Street Name: Harrison Street 14th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	22	224	6	12	390	48	89	23	149	2	10	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	224	6	12	390	48	89	23	149	2	10	11
Added Vol:	0	2	0	0	33	0	0	0	23	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	226	6	12	423	48	89	23	172	2	10	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	23	233	6	12	436	49	92	24	177	2	10	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	233	6	12	436	49	92	24	177	2	10	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	233	6	12	436	49	92	24	177	2	10	11
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.89	0.02	0.05	1.75	0.20	0.31	0.08	0.61	0.09	0.43	0.48
Final Sat.:	55	563	15	31	1093	126	200	52	386	46	231	254
Capacity Analysis Module:												
Vol/Sat:	0.41	0.41	0.41	0.40	0.40	0.39	0.46	0.46	0.46	0.04	0.04	0.04
Crit Moves:		****		****			****			****		
Delay/Veh:	12.0	12.0	12.0	12.1	11.9	11.6	12.4	12.4	12.4	9.2	9.2	9.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.0	12.0	12.0	12.1	11.9	11.6	12.4	12.4	12.4	9.2	9.2	9.2
LOS by Move:	B	B	B	B	B	B	B	B	B	A	A	A
ApproachDel:	12.0			11.8			12.4			9.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.0			11.8			12.4			9.2		
LOS by Appr:	B			B			B			A		
AllWayAvgQ:	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

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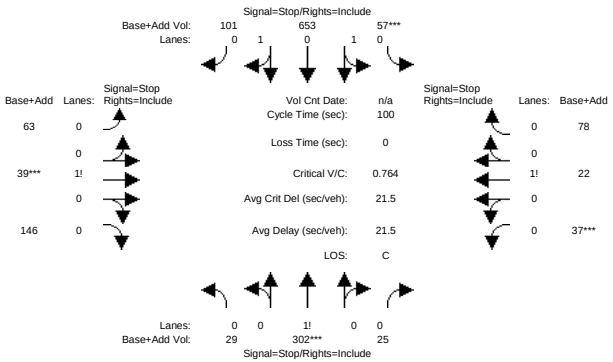
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #67: 14th St / Harrison



Street Name: Harrison Street 14th Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	29	249	25	57	652	101	63	39	145	37	22	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	249	25	57	652	101	63	39	145	37	22	78
Added Vol:	0	53	0	0	1	0	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	302	25	57	653	101	63	39	146	37	22	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	30	315	26	59	680	105	66	41	152	39	23	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	315	26	59	680	105	66	41	152	39	23	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	315	26	59	680	105	66	41	152	39	23	81
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.08	0.85	0.07	0.14	1.61	0.25	0.25	0.16	0.59	0.27	0.16	0.57
Final Sat.:	45	470	39	78	906	143	131	81	304	127	75	267
Capacity Analysis Module:												
Vol/Sat:	0.67	0.67	0.67	0.76	0.75	0.74	0.50	0.50	0.50	0.30	0.30	0.30
Crit Moves:		****		****				****		****		
Delay/Veh:	20.3	20.3	20.3	26.8	25.5	24.0	15.3	15.3	15.3	12.6	12.6	12.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.3	20.3	20.3	26.8	25.5	24.0	15.3	15.3	15.3	12.6	12.6	12.6
LOS by Move:	C	C	C	D	D	C	C	C	C	B	B	B
ApproachDel:	20.3			25.4			15.3			12.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	20.3			25.4			15.3			12.6		
LOS by Appr:	C			D			C			B		
AllWayAvgQ:	1.7	1.7	1.7	2.7	2.4	2.4	0.8	0.8	0.8	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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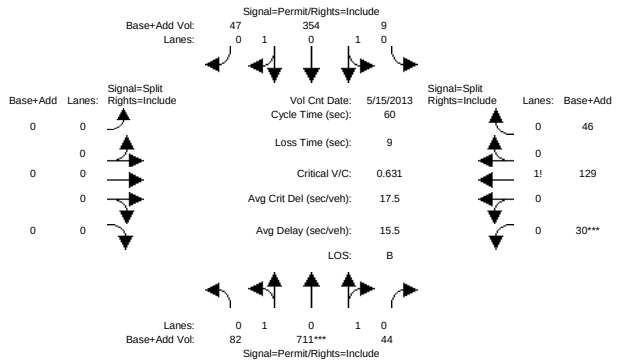
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #68: 15th St / S Van Ness



Street Name:	S Van Ness						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	29	29	29	29	0	22	0	22	22	0	22
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.5	4.5	4.0	4.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	82	708	44	9	354	47	0	0	0	30	129	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	708	44	9	354	47	0	0	0	30	129	46
Added Vol:	0	3	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	711	44	9	354	47	0	0	0	30	129	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	89	773	48	10	385	51	0	0	0	33	140	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	773	48	10	385	51	0	0	0	33	140	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	773	48	10	385	51	0	0	0	33	140	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	0.65	0.64	0.70	0.70	0.69	1.00	1.00	1.00	0.71	0.71	0.70
Lanes:	0.20	1.70	0.10	0.04	1.73	0.23	0.00	0.00	0.00	0.14	0.63	0.23
Final Sat.:	241	2085	129	58	2285	303	0	0	0	197	846	302
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.17	0.17	0.17	0.00	0.00	0.00	0.17	0.17	0.17
Crit Moves:		****								****		
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.00	0.00	0.00	0.37	0.37	0.37
Volume/Cap:	0.77	0.77	0.77	0.35	0.35	0.35	0.00	0.00	0.00	0.45	0.45	0.45
Uniform Del:	12.7	12.7	12.7	9.6	9.6	9.6	0.0	0.0	0.0	14.4	14.4	14.4
IncremntDel:	4.8	4.8	4.8	0.8	0.8	0.8	0.0	0.0	0.0	3.0	3.0	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	17.5	17.5	17.5	10.4	10.4	10.4	0.0	0.0	0.0	17.4	17.4	17.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.5	17.5	17.5	10.4	10.4	10.4	0.0	0.0	0.0	17.4	17.4	17.4
LOS by Move:	B	B	B	B	B	B	A	A	A	B	B	B
HCM2kAvgQ:	8	8	8	3	3	3	0	0	0	3	3	3

Note: Queue reported is the number of cars per lane.

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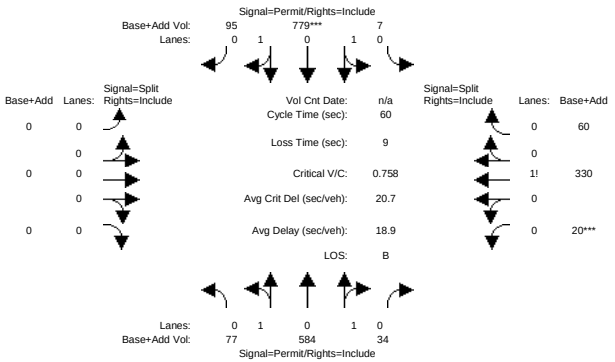
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #68: 15th St / S Van Ness



Street Name:	S Van Ness						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	29	29	29	29	0	22	0	22	22	0	22
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.5	4.5	4.0	4.5
Volume Module:												
Base Vol:	77	584	34	7	779	95	0	0	0	18	328	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	584	34	7	779	95	0	0	0	18	328	54
Added Vol:	0	0	0	0	0	0	0	0	0	2	2	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	584	34	7	779	95	0	0	0	20	330	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	79	602	35	7	803	98	0	0	0	21	340	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	602	35	7	803	98	0	0	0	21	340	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	602	35	7	803	98	0	0	0	21	340	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.57	0.57	0.57	0.71	0.71	0.70	1.00	1.00	1.00	0.73	0.73	0.71
Lanes:	0.22	1.68	0.10	0.01	1.77	0.22	0.00	0.00	0.00	0.05	0.80	0.15
Final Sat.:	242	1835	107	21	2380	290	0	0	0	67	1108	201
Capacity Analysis Module:												
Vol/Sat:	0.33	0.33	0.33	0.34	0.34	0.34	0.00	0.00	0.00	0.31	0.31	0.31
Crit Moves:					****					****		
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.00	0.00	0.00	0.37	0.37	0.37
Volume/Cap:	0.68	0.68	0.68	0.70	0.70	0.70	0.00	0.00	0.00	0.84	0.84	0.84
Uniform Del:	11.9	11.9	11.9	12.1	12.1	12.1	0.0	0.0	0.0	17.4	17.4	17.4
IncremntDel:	3.5	3.5	3.5	3.1	3.1	3.1	0.0	0.0	0.0	15.2	15.2	15.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	15.4	15.4	15.4	15.2	15.2	15.2	0.0	0.0	0.0	32.6	32.6	32.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	15.4	15.4	15.2	15.2	15.2	0.0	0.0	0.0	32.6	32.6	32.6
LOS by Move:	B	B	B	B	B	B	A	A	A	C	C	C
HCM2kAvgQ:	6	6	6	7	7	7	0	0	0	8	8	8

Note: Queue reported is the number of cars per lane.

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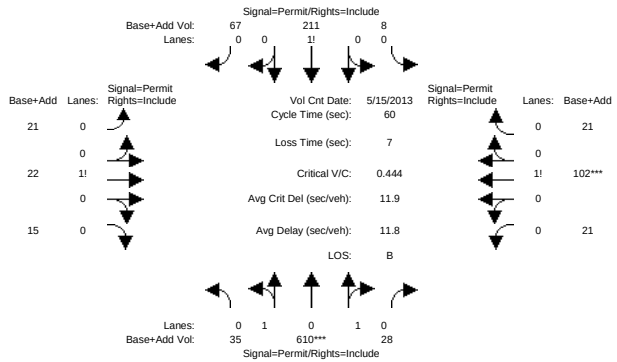
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #69: 15th St / Folsom



Street Name:	Folsom Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	22	22	22	22	22	22
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	35	607	28	8	211	67	21	22	15	21	102	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	607	28	8	211	67	21	22	15	21	102	21
Added Vol:	0	3	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	610	28	8	211	67	21	22	15	21	102	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	38	663	30	9	229	73	23	24	16	23	111	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	663	30	9	229	73	23	24	16	23	111	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	663	30	9	229	73	23	24	16	23	111	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.70	0.71	0.71	0.70	0.64	0.65	0.63	0.70	0.71	0.70
Lanes:	0.10	1.82	0.08	0.03	0.73	0.24	0.36	0.38	0.26	0.15	0.70	0.15
Final Sat.:	138	2410	111	38	990	314	441	462	315	195	946	195
Capacity Analysis Module:												
Vol/Sat:	0.28	0.28	0.28	0.23	0.23	0.23	0.05	0.05	0.05	0.12	0.12	0.12
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.37	0.37	0.37	0.37	0.37	0.37
Volume/Cap:	0.53	0.53	0.53	0.45	0.45	0.45	0.14	0.14	0.14	0.32	0.32	0.32
Uniform Del:	9.7	9.7	9.7	9.1	9.1	9.1	12.7	12.7	12.7	13.6	13.6	13.6
IncremntDel:	1.5	1.5	1.5	2.1	2.1	2.1	0.7	0.7	0.7	1.7	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.2	11.2	11.2	11.2	11.2	11.2	13.4	13.4	13.4	15.3	15.3	15.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.2	11.2	11.2	11.2	11.2	11.2	13.4	13.4	13.4	15.3	15.3	15.3
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	4	4	4	1	1	1	2	2	2

Note: Queue reported is the number of cars per lane.

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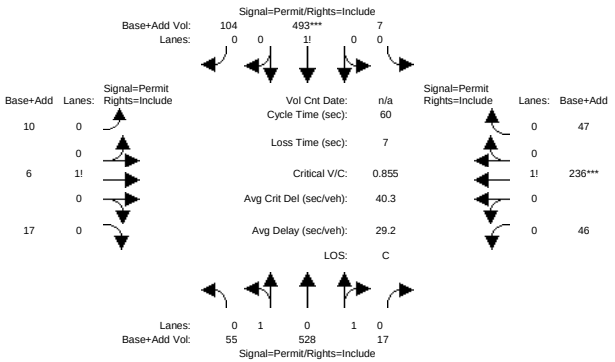
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #69: 15th St / Folsom



Street Name:	Folsom Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	29	29	29	29	29	24	24	24	24	24	24
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	55	528	17	7	493	104	10	6	17	34	225	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	528	17	7	493	104	10	6	17	34	225	41
Added Vol:	0	0	0	0	0	0	0	0	0	12	11	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	528	17	7	493	104	10	6	17	46	236	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	60	580	19	8	542	114	11	7	19	51	259	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	580	19	8	542	114	11	7	19	51	259	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	580	19	8	542	114	11	7	19	51	259	52
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.65	0.73	0.73	0.71	0.62	0.63	0.58	0.69	0.70	0.69
Lanes:	0.18	1.76	0.06	0.01	0.81	0.18	0.29	0.17	0.54	0.14	0.72	0.14
Final Sat.:	226	2165	70	16	1121	236	347	208	589	186	953	190
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.48	0.48	0.48	0.03	0.03	0.03	0.27	0.27	0.27
Crit Moves:					****						****	
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.40	0.40	0.40	0.40	0.40	0.40
Volume/Cap:	0.55	0.55	0.55	1.00	1.00	1.00	0.08	0.08	0.08	0.68	0.68	0.68
Uniform Del:	10.9	10.9	10.9	15.5	15.5	15.5	11.2	11.2	11.2	14.8	14.8	14.8
IncremntDel:	1.9	1.9	1.9	34.9	34.9	34.9	0.3	0.3	0.3	6.9	6.9	6.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.8	12.8	12.8	50.4	50.4	50.4	11.5	11.5	11.5	21.7	21.7	21.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.8	12.8	12.8	50.4	50.4	50.4	11.5	11.5	11.5	21.7	21.7	21.7
LOS by Move:	B	B	B	D	D	D	B	B	B	C	C	C
HCM2kAvgQ:	4	4	4	20	20	20	0	0	0	7	7	7

Note: Queue reported is the number of cars per lane.

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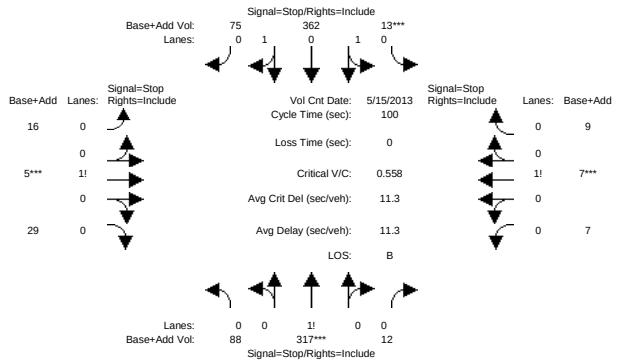
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project AM

Intersection #70: 15th St / Harrison

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Street Name:         Harrison Street                 15th Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am
Base Vol:      88   255    12    13   361    75    15     5    29     7     7     9
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   88   255    12    13   361    75    15     5    29     7     7     9
Added Vol:      0    62     0     0     1     0     1     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   88   317    12    13   362    75    16     5    29     7     7     9
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.98  0.98  0.98  0.98  0.98  0.98  0.98  0.98  0.98  0.98  0.98  0.98
PHF Volume:    90   323    12    13   369    77    16     5    30     7     7     9
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   90   323    12    13   369    77    16     5    30     7     7     9
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:   90   323    12    13   369    77    16     5    30     7     7     9
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.21  0.76  0.03  0.06  1.61  0.33  0.32  0.10  0.58  0.30  0.30  0.40
Final Sat.:   161   580    22    41  1159   247   190    59   344   174   174   223
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.56  0.56  0.56  0.33  0.32  0.31  0.09  0.09  0.09  0.04  0.04  0.04
Crit Moves:       ****        ****              ****              ****
Delay/Veh:   13.3  13.3  13.3  10.1   9.9   9.6   8.9   8.9   8.9   8.8   8.8   8.8
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  13.3  13.3  13.3  10.1   9.9   9.6   8.9   8.9   8.9   8.8   8.8   8.8
LOS by Move:    B     B     B     B     A     A     A     A     A     A     A     A
ApproachDel:         13.3              9.9               8.9               8.8
Delay Adj:           1.00              1.00              1.00              1.00
ApprAdjDel:          13.3              9.9               8.9               8.8
LOS by Appr:            B                 A                 A                 A
AllWayAvgQ:   1.2   1.2   1.2   0.5   0.4   0.4   0.1   0.1   0.1   0.0   0.0   0.0
Note: Queue reported is the number of cars per lane.
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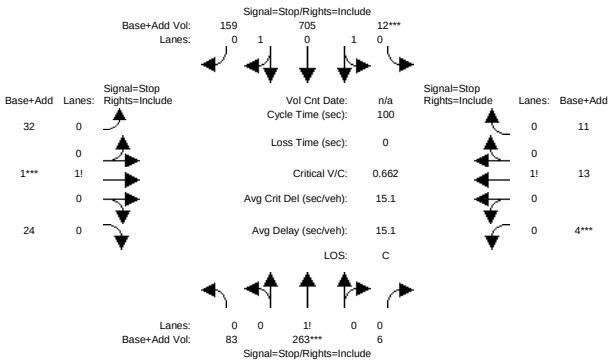
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
Existing Plus Project PM

Intersection #70: 15th St / Harrison




```
Street Name:         Harrison Street                 15th Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      83   260     6    12   684   159    16     1    23     4    13    11
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   83   260     6    12   684   159    16     1    23     4    13    11
Added Vol:      0     3     0     0    21     0    16     0     1     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   83   263     6    12   705   159    32     1    24     4    13    11
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.94  0.94  0.94  0.94  0.94  0.94  0.94  0.94  0.94  0.94  0.94  0.94
PHF Volume:    88   280     6    13   750   169    34     1    26     4    14    12
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   88   280     6    13   750   169    34     1    26     4    14    12
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:   88   280     6    13   750   169    34     1    26     4    14    12
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.23  0.75  0.02  0.03  1.61  0.36  0.56  0.02  0.42  0.14  0.47  0.39
Final Sat.:   166   526    12    19  1158   270   308    10   231    77   251   212
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.53  0.53  0.53  0.66  0.65  0.63  0.11  0.11  0.11  0.06  0.06  0.06
Crit Moves:       ****        ****              ****              ****
Delay/Veh:   13.5  13.5  13.5  17.1  16.4  15.3   9.8   9.8   9.8   9.4   9.4   9.4
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  13.5  13.5  13.5  17.1  16.4  15.3   9.8   9.8   9.8   9.4   9.4   9.4
LOS by Move:    B     B     B     C     C     C     A     A     A     A     A     A
ApproachDel:         13.5              16.2              9.8               9.4
Delay Adj:           1.00              1.00              1.00              1.00
ApprAdjDel:          13.5              16.2              9.8               9.4
LOS by Appr:            B                 C                 A                 A
AllWayAvgQ:   1.1   1.1   1.1   1.8   1.6   1.6   0.1   0.1   0.1   0.0   0.0   0.0
Note: Queue reported is the number of cars per lane.
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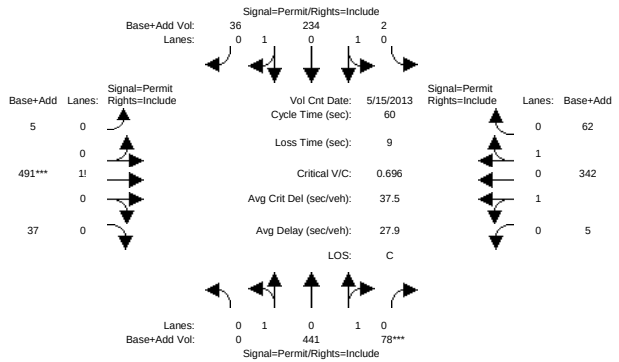
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	28	0	28	28	0	28	0	24	0	0	24	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	0	441	78	2	234	36	5	479	37	5	342	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	441	78	2	234	36	5	479	37	5	342	62
Added Vol:	0	0	0	0	0	0	0	12	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	441	78	2	234	36	5	491	37	5	342	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	455	80	2	241	37	5	506	38	5	353	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	455	80	2	241	37	5	506	38	5	353	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	455	80	2	241	37	5	506	38	5	353	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.74	0.72	0.70	0.70	0.68	0.72	0.72	0.71	0.70	0.70	0.69
Lanes:	0.00	1.69	0.31	0.01	1.72	0.27	0.01	0.92	0.07	0.02	1.67	0.31
Final Sat.:	0	2367	419	20	2286	352	13	1262	95	32	2213	401
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.19	0.11	0.11	0.11	0.40	0.40	0.40	0.16	0.16	0.16
Crit Moves:			****					****				
Green/Cycle:	0.00	0.46	0.46	0.46	0.46	0.46	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.00	0.42	0.42	0.23	0.23	0.23	1.02	1.02	1.02	0.40	0.40	0.40
Uniform Del:	0.0	11.0	11.0	10.0	10.0	10.0	18.5	18.5	18.5	13.3	13.3	13.3
IncremntDel:	0.0	1.0	1.0	0.4	0.4	0.4	43.9	43.9	43.9	1.2	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	12.1	12.1	10.4	10.4	10.4	62.4	62.4	62.4	14.5	14.5	14.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.1	12.1	10.4	10.4	10.4	62.4	62.4	62.4	14.5	14.5	14.5
LOS by Move:	A	B	B	B	B	B	E	E	E	B	B	B
HCM2kAvgQ:	0	4	4	2	2	2	18	18	18	3	3	3

Note: Queue reported is the number of cars per lane.

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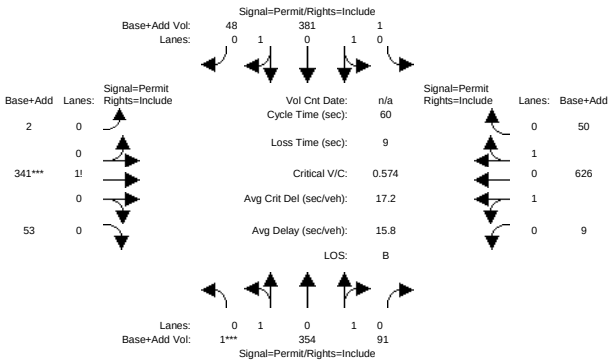
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	25	0	25	25	0	25	0	25	0	0	25	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module:												
Base Vol:	1	354	91	1	381	48	2	341	53	9	616	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	354	91	1	381	48	2	341	53	9	616	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	354	91	1	381	48	2	341	53	9	626	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	373	96	1	401	51	2	359	56	9	659	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	373	96	1	401	51	2	359	56	9	659	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	373	96	1	401	51	2	359	56	9	659	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.65	0.71	0.71	0.70	0.71	0.71	0.70	0.71	0.71	0.70
Lanes:	0.01	1.56	0.43	0.01	1.77	0.22	0.01	0.86	0.13	0.02	1.83	0.15
Final Sat.:	6	2071	532	6	2374	299	7	1166	181	35	2447	195
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.17	0.17	0.17	0.31	0.31	0.31	0.27	0.27	0.27
Crit Moves:	****							****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.43	0.43	0.43	0.41	0.41	0.41	0.71	0.71	0.71	0.62	0.62	0.62
Uniform Del:	12.4	12.4	12.4	12.3	12.3	12.3	13.9	13.9	13.9	13.2	13.2	13.2
IncremntDel:	1.3	1.3	1.3	1.1	1.1	1.1	7.1	7.1	7.1	2.5	2.5	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.7	13.7	13.7	13.4	13.4	13.4	21.0	21.0	21.0	15.7	15.7	15.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.7	13.7	13.7	13.4	13.4	13.4	21.0	21.0	21.0	15.7	15.7	15.7
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	4	4	4	3	3	3	8	8	8	5	5	5

Note: Queue reported is the number of cars per lane.

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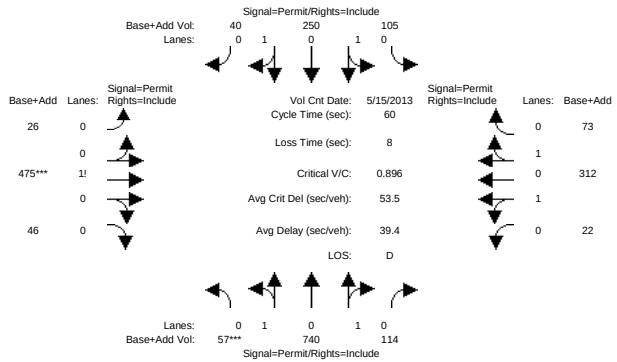
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #72: 16th St / S Van Ness



Street Name:	S Van Ness						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	0	31	31	0	31	21	21	0	0	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	57	737	114	105	250	40	26	463	46	22	312	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	57	737	114	105	250	40	26	463	46	22	312	73
Added Vol:	0	3	0	0	0	0	0	12	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	740	114	105	250	40	26	475	46	22	312	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	58	755	116	107	255	41	27	485	47	22	318	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	755	116	107	255	41	27	485	47	22	318	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	755	116	107	255	41	27	485	47	22	318	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.65	0.48	0.48	0.48	0.71	0.71	0.71	0.68	0.68	0.67
Lanes:	0.12	1.62	0.26	0.54	1.26	0.20	0.05	0.87	0.08	0.11	1.53	0.36
Final Sat.:	159	2067	318	485	1155	185	64	1178	114	139	1971	461
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.22	0.22	0.22	0.41	0.41	0.41	0.16	0.16	0.16
Crit Moves:	****							****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.71	0.71	0.71	0.43	0.43	0.43	1.18	1.18	1.18	0.46	0.46	0.46
Uniform Del:	11.0	11.0	11.0	9.0	9.0	9.0	19.5	19.5	19.5	15.1	15.1	15.1
IncremntDel:	3.2	3.2	3.2	1.4	1.4	1.4	99.4	99.4	99.4	1.7	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.3	14.3	14.3	10.4	10.4	10.4	118.9	119	118.9	16.8	16.8	16.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.3	14.3	14.3	10.4	10.4	10.4	118.9	119	118.9	16.8	16.8	16.8
LOS by Move:	B	B	B	B	B	B	F	F	F	B	B	B
HCM2kAvgQ:	8	8	8	3	3	3	20	20	20	3	3	3

Note: Queue reported is the number of cars per lane.

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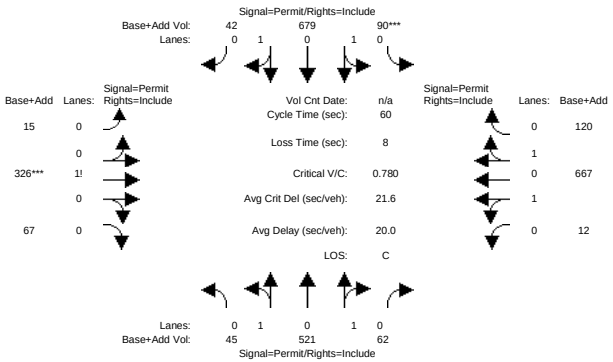
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #72: 16th St / S Van Ness



Street Name:	S Van Ness						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	0	29	29	0	29	23	23	0	0	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	45	521	62	90	677	42	15	326	67	12	657	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	521	62	90	677	42	15	326	67	12	657	120
Added Vol:	0	0	0	0	2	0	0	0	0	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	521	62	90	679	42	15	326	67	12	667	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	46	537	64	93	700	43	15	336	69	12	688	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	537	64	93	700	43	15	336	69	12	688	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	537	64	93	700	43	15	336	69	12	688	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	0.64	0.62	0.61	0.61	0.61	0.70	0.70	0.69	0.70	0.70	0.69
Lanes:	0.14	1.66	0.20	0.22	1.68	0.10	0.04	0.79	0.17	0.03	1.66	0.31
Final Sat.:	174	2017	240	258	1948	120	49	1062	218	40	2228	401
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.36	0.36	0.36	0.32	0.32	0.32	0.31	0.31	0.31
Crit Moves:				****				****				
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38	0.38	0.38
Volume/Cap:	0.55	0.55	0.55	0.74	0.74	0.74	0.83	0.83	0.83	0.81	0.81	0.81
Uniform Del:	10.9	10.9	10.9	12.5	12.5	12.5	16.7	16.7	16.7	16.5	16.5	16.5
IncremntDel:	1.9	1.9	1.9	4.5	4.5	4.5	14.1	14.1	14.1	6.8	6.8	6.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.8	12.8	12.8	17.0	17.0	17.0	30.8	30.8	30.8	23.3	23.3	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.8	12.8	12.8	17.0	17.0	17.0	30.8	30.8	30.8	23.3	23.3	23.3
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	5	5	5	7	7	7	8	8	8	7	7	7

Note: Queue reported is the number of cars per lane.

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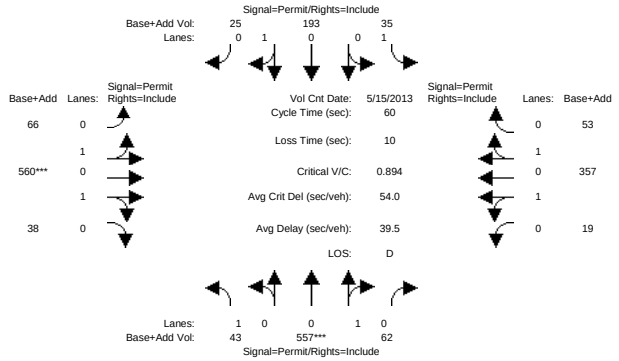
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	43	554	57	35	193	25	66	548	38	19	357	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	554	57	35	193	25	66	548	38	19	357	53
Added Vol:	0	3	5	0	0	0	0	12	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	557	62	35	193	25	66	560	38	19	357	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	44	574	64	36	199	26	68	577	39	20	368	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	574	64	36	199	26	68	577	39	20	368	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	574	64	36	199	26	68	577	39	20	368	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.48	0.72	0.71	0.15	0.72	0.71	0.65	0.65	0.64	0.67	0.67	0.67
Lanes:	1.00	0.90	0.10	1.00	0.88	0.12	0.20	1.69	0.11	0.09	1.66	0.25
Final Sat.:	907	1229	137	278	1207	156	245	2078	141	113	2129	316
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.13	0.16	0.16	0.28	0.28	0.28	0.17	0.17	0.17
Crit Moves:		****						****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.12	1.12	1.12	0.30	0.40	0.40	0.67	0.67	0.67	0.41	0.41	0.41
Uniform Del:	10.7	17.5	17.5	11.7	12.2	12.2	14.1	14.1	14.1	12.3	12.3	12.3
IncremntDel:	0.6	75.6	75.6	6.3	2.1	2.1	3.4	3.4	3.4	1.2	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.4	93.1	93.1	18.0	14.3	14.3	17.6	17.6	17.6	13.5	13.5	13.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.4	93.1	93.1	18.0	14.3	14.3	17.6	17.6	17.6	13.5	13.5	13.5
LOS by Move:	B	F	F	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	1	25	25	0	3	3	5	5	5	3	3	3

Note: Queue reported is the number of cars per lane.

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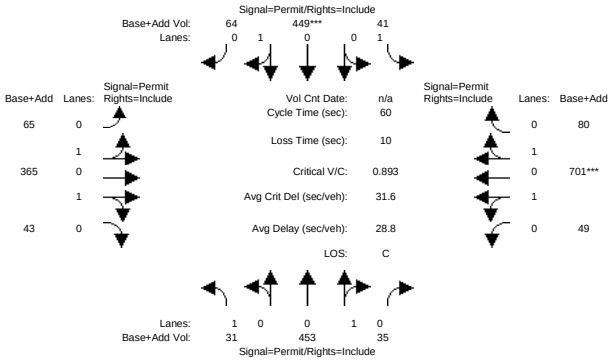
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	31	453	35	41	445	56	65	365	43	47	699	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	453	35	41	445	56	65	365	43	47	699	80
Added Vol:	0	0	0	0	4	8	0	0	0	2	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	453	35	41	449	64	65	365	43	49	701	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	33	477	37	43	473	67	68	384	45	52	738	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	477	37	43	473	67	68	384	45	52	738	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	477	37	43	473	67	68	384	45	52	738	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.22	0.72	0.72	0.24	0.72	0.70	0.55	0.55	0.54	0.66	0.66	0.65
Lanes:	1.00	0.93	0.07	1.00	0.87	0.13	0.28	1.54	0.18	0.12	1.69	0.19
Final Sat.:	415	1275	98	460	1189	169	285	1603	189	149	2129	243
Capacity Analysis Module:												
Vol/Sat:	0.08	0.37	0.37	0.09	0.40	0.40	0.24	0.24	0.24	0.35	0.35	0.35
Crit Moves:					****						****	
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.19	0.90	0.90	0.23	0.95	0.95	0.58	0.58	0.58	0.83	0.83	0.83
Uniform Del:	11.1	16.3	16.3	11.3	16.9	16.9	13.4	13.4	13.4	15.6	15.6	15.6
IncremntDel:	2.4	19.4	19.4	2.7	28.0	28.0	2.8	2.8	2.8	7.7	7.7	7.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.5	35.7	35.7	14.0	45.0	45.0	16.2	16.2	16.2	23.3	23.3	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.5	35.7	35.7	14.0	45.0	45.0	16.2	16.2	16.2	23.3	23.3	23.3
LOS by Move:	B	D	D	B	D	D	B	B	B	C	C	C
HCM2kAvgQ:	1	13	13	0	10	9	4	4	4	8	8	8

Note: Queue reported is the number of cars per lane.

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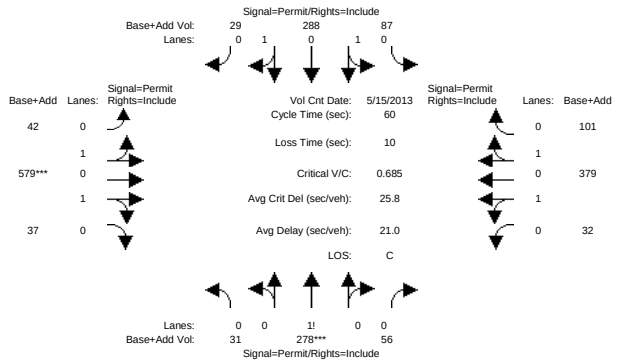
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #74: 16th St / Harrison



Street Name:	Harrison Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	19	19	19	19	0	19	31	31	0	0	31	31
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	31	272	56	87	288	29	25	579	37	32	379	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	272	56	87	288	29	25	579	37	32	379	62
Added Vol:	0	6	0	0	0	0	17	0	0	0	0	39
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	278	56	87	288	29	42	579	37	32	379	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	33	293	59	92	303	31	44	609	39	34	399	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	293	59	92	303	31	44	609	39	34	399	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	293	59	92	303	31	44	609	39	34	399	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.65	0.52	0.54	0.53	0.67	0.67	0.67	0.65	0.65	0.64
Lanes:	0.08	0.76	0.16	0.44	1.41	0.15	0.13	1.76	0.11	0.12	1.48	0.40
Final Sat.:	109	981	198	439	1452	146	162	2235	143	153	1816	484
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.30	0.21	0.21	0.21	0.27	0.27	0.27	0.22	0.22	0.22
Crit Moves:		****						****				
Green/Cycle:	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.94	0.94	0.94	0.66	0.66	0.66	0.53	0.53	0.53	0.43	0.43	0.43
Uniform Del:	20.0	20.0	20.0	17.7	17.7	17.7	9.6	9.6	9.6	9.0	9.0	9.0
IncremntDel:	32.2	32.2	32.2	5.2	5.2	5.2	1.5	1.5	1.5	1.0	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.1	52.1	52.1	22.9	22.9	22.9	11.2	11.2	11.2	10.0	10.0	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.1	52.1	52.1	22.9	22.9	22.9	11.2	11.2	11.2	10.0	10.0	10.0
LOS by Move:	D	D	D	C	C	C	B	B	B	B	B	B
HCM2kAvgQ:	12	12	12	5	5	5	5	5	5	3	3	3

Note: Queue reported is the number of cars per lane.

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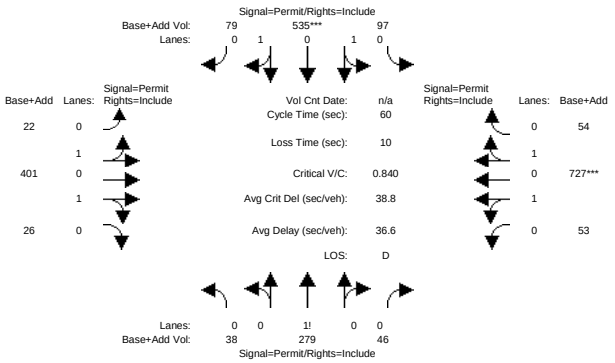
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #74: 16th St / Harrison



Street Name:	Harrison Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	0	20	30	30	0	0	30	30
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	38	279	46	84	530	75	21	401	26	53	727	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	279	46	84	530	75	21	401	26	53	727	52
Added Vol:	0	0	0	13	5	4	1	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	279	46	97	535	79	22	401	26	53	727	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	40	297	49	103	569	84	23	427	28	56	773	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	297	49	103	569	84	23	427	28	56	773	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	297	49	103	569	84	23	427	28	56	773	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.63	0.61	0.56	0.57	0.55	0.67	0.67	0.67	0.67	0.67	0.66
Lanes:	0.10	0.77	0.13	0.28	1.49	0.23	0.10	1.79	0.11	0.13	1.74	0.13
Final Sat.:	124	909	150	295	1629	240	125	2271	147	161	2206	164
Capacity Analysis Module:												
Vol/Sat:	0.33	0.33	0.33	0.35	0.35	0.35	0.19	0.19	0.19	0.35	0.35	0.35
Crit Moves:					****						****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50
Volume/Cap:	0.98	0.98	0.98	1.05	1.05	1.05	0.38	0.38	0.38	0.70	0.70	0.70
Uniform Del:	19.8	19.8	19.8	20.0	20.0	20.0	9.2	9.2	9.2	11.5	11.5	11.5
IncremntDel:	40.5	40.5	40.5	46.9	46.9	46.9	0.8	0.8	0.8	3.3	3.3	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	60.3	60.3	60.3	66.9	66.9	66.9	10.1	10.1	10.1	14.8	14.8	14.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.3	60.3	60.3	66.9	66.9	66.9	10.1	10.1	10.1	14.8	14.8	14.8
LOS by Move:	E	E	E	E	E	E	B	B	B	B	B	B
HCM2kAvgQ:	13	13	13	15	15	15	3	3	3	7	7	7

Note: Queue reported is the number of cars per lane.

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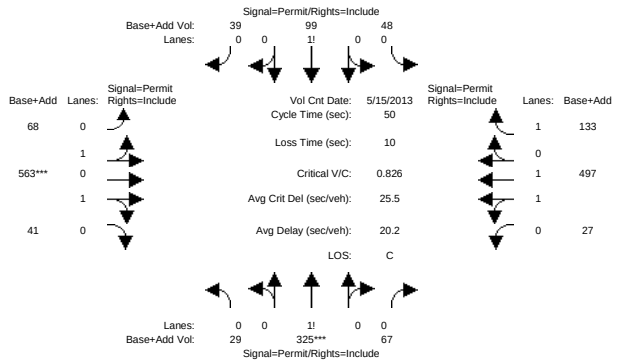
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #75: 16th St / Bryant



Street Name:	Bryant Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	20	20	20	20	20	20	20	20
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 15 May 2013 << 8:00-9:00am												
Base Vol:	29	325	67	48	99	39	68	563	41	27	458	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	325	67	48	99	39	68	563	41	27	458	133
Added Vol:	0	0	0	0	0	0	0	0	0	0	39	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	325	67	48	99	39	68	563	41	27	497	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	30	335	69	49	102	40	70	580	42	28	512	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	335	69	49	102	40	70	580	42	28	512	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	335	69	49	102	40	70	580	42	28	512	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	0.64	0.62	0.54	0.55	0.54	0.60	0.61	0.60	0.73	0.73	0.44
Lanes:	0.07	0.77	0.16	0.26	0.53	0.21	0.20	1.68	0.12	0.10	1.90	1.00
Final Sat.:	83	929	192	266	549	216	233	1931	141	143	2625	844
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.36	0.19	0.19	0.19	0.30	0.30	0.30	0.20	0.20	0.16
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Volume/Cap:	0.90	0.90	0.90	0.46	0.46	0.46	0.75	0.75	0.75	0.49	0.49	0.41
Uniform Del:	14.1	14.1	14.1	11.1	11.1	11.1	12.9	12.9	12.9	11.2	11.2	10.7
IncremntDel:	22.6	22.6	22.6	3.7	3.7	3.7	5.6	5.6	5.6	1.5	1.5	3.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.7	36.7	36.7	14.8	14.8	14.8	18.5	18.5	18.5	12.7	12.7	14.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	36.7	36.7	14.8	14.8	14.8	18.5	18.5	18.5	12.7	12.7	14.3
LOS by Move:	D	D	D	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	11	11	11	2	2	2	5	5	5	4	4	2

Note: Queue reported is the number of cars per lane.

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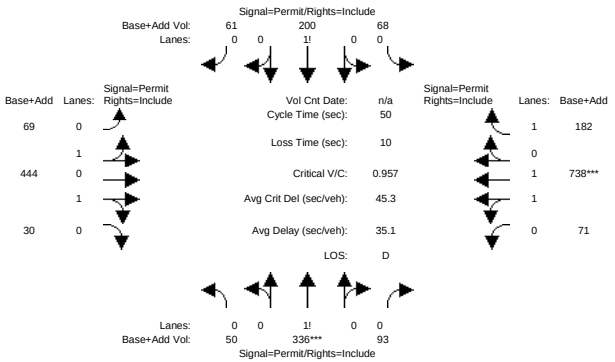
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #75: 16th St / Bryant



Street Name:	Bryant Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	20	20	20	20	20	20	20	20
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	50	336	93	68	200	61	69	431	30	71	736	182
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	336	93	68	200	61	69	431	30	71	736	182
Added Vol:	0	0	0	0	0	0	0	13	0	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	336	93	68	200	61	69	444	30	71	738	182
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	53	354	98	72	211	64	73	467	32	75	777	192
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	354	98	72	211	64	73	467	32	75	777	192
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	354	98	72	211	64	73	467	32	75	777	192
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	0.61	0.59	0.54	0.54	0.52	0.53	0.53	0.53	0.69	0.69	0.43
Lanes:	0.10	0.70	0.20	0.21	0.60	0.19	0.26	1.63	0.11	0.18	1.82	1.00
Final Sat.:	119	802	222	212	623	190	257	1651	112	230	2395	812
Capacity Analysis Module:												
Vol/Sat:	0.44	0.44	0.44	0.34	0.34	0.34	0.28	0.28	0.28	0.32	0.32	0.24
Crit Moves:		****									****	
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Volume/Cap:	1.10	1.10	1.10	0.85	0.85	0.85	0.71	0.71	0.71	0.81	0.81	0.59
Uniform Del:	15.0	15.0	15.0	13.6	13.6	13.6	12.6	12.6	12.6	13.3	13.3	11.8
IncremntDel:	72.8	72.8	72.8	18.9	18.9	18.9	5.2	5.2	5.2	6.8	6.8	7.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	87.8	87.8	87.8	32.5	32.5	32.5	17.7	17.7	17.7	20.1	20.1	19.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.8	87.8	87.8	32.5	32.5	32.5	17.7	17.7	17.7	20.1	20.1	19.4
LOS by Move:	F	F	F	C	C	C	B	B	B	C	C	B
HCM2kAvgQ:	18	18	18	6	6	6	4	4	4	9	9	3

Note: Queue reported is the number of cars per lane.

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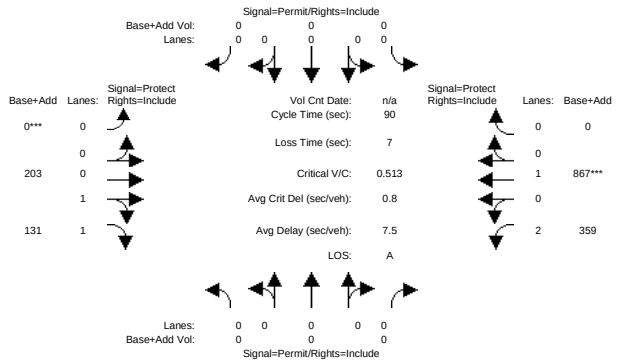
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	31	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	106	131	267	855	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	106	131	267	855	0
Added Vol:	0	0	0	0	0	0	0	97	0	92	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	203	131	359	867	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	0	0	0	211	136	374	903	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	211	136	374	903	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	211	136	374	903	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	1788	1788	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.08	0.11	0.48	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.23	0.18	0.51	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.9	22.8	8.8	0.5	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.1	22.9	8.9	0.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.1	22.9	8.9	0.8	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	5	3	2	4	0

Note: Queue reported is the number of cars per lane.

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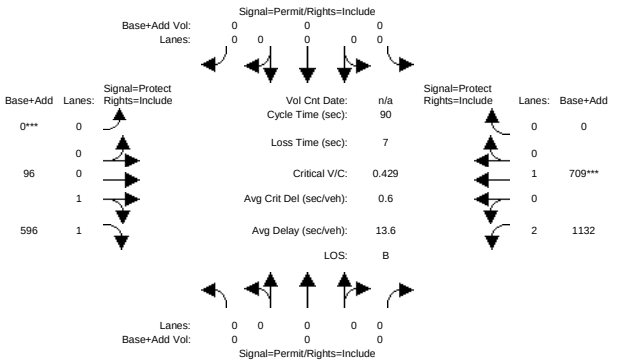
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	86	596	489	632	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	86	596	489	632	0
Added Vol:	0	0	0	0	0	0	0	10	0	643	77	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	96	596	1132	709	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	102	634	1204	754	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	102	634	1204	754	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	102	634	1204	754	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	1.72	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	459	2851	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.34	0.40	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.58	0.43	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.1	27.1	12.0	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.4	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.7	28.7	12.4	0.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.7	28.7	12.4	0.6	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	10	10	11	3	0

Note: Queue reported is the number of cars per lane.

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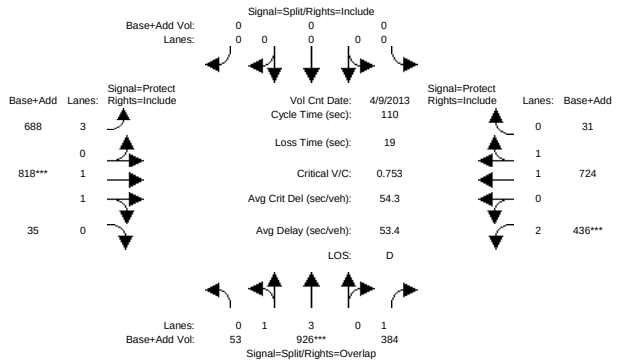
Existing Plus LRDP (Mission Bay Variant)

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module: >> Count Date: 9 Apr 2013 << 7:00-8:45am												
Base Vol:	53	873	379	0	0	0	682	817	35	319	711	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	873	379	0	0	0	682	817	35	319	711	31
Added Vol:	0	53	5	0	0	0	6	1	0	117	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	926	384	0	0	0	688	818	35	436	724	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	56	975	404	0	0	0	724	861	37	459	762	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	975	404	0	0	0	724	861	37	459	762	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	975	404	0	0	0	724	861	37	459	762	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.80	0.79	0.81	0.80
Lanes:	0.22	3.78	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	317	5546	1345	0	0	0	4480	2934	126	2987	2934	126
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.30	0.00	0.00	0.00	0.16	0.29	0.29	0.15	0.26	0.26
Crit Moves:		****						****			****	
Green/Cycle:	0.35	0.35	0.49	0.00	0.00	0.00	0.16	0.34	0.34	0.14	0.31	0.31
Volume/Cap:	0.50	0.50	0.61	0.00	0.00	0.00	0.99	0.87	0.87	1.13	0.84	0.84
Uniform Del:	27.8	27.8	20.4	0.0	0.0	0.0	45.9	34.3	34.3	47.5	35.5	35.5
IncremntDel:	0.8	0.8	4.2	0.0	0.0	0.0	30.4	10.2	10.2	83.8	8.9	8.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.6	28.6	24.6	0.0	0.0	0.0	76.3	44.4	44.4	131.3	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.6	28.6	24.6	0.0	0.0	0.0	76.3	44.4	44.4	131.3	44.4	44.4
LOS by Move:	C	C	C	A	A	A	E	D	D	F	D	D
HCM2kAvgQ:	7	7	9	0	0	0	9	14	14	15	16	16

Note: Queue reported is the number of cars per lane.

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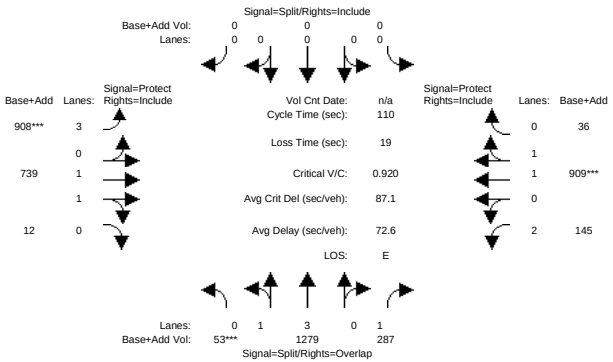
Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	53	948	255	0	0	0	872	732	12	130	907	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	948	255	0	0	0	872	732	12	130	907	36
Added Vol:	0	331	32	0	0	0	36	7	0	15	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	1279	287	0	0	0	908	739	12	145	909	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	55	1319	296	0	0	0	936	762	12	149	937	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	1319	296	0	0	0	936	762	12	149	937	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	1319	296	0	0	0	936	762	12	149	937	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.81	0.79	0.81	0.80
Lanes:	0.16	3.84	1.00	0.00	0.00	0.00	3.00	1.97	0.03	2.00	1.92	0.08
Final Sat.:	234	5636	1356	0	0	0	4480	3024	49	2987	2943	117
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.22	0.00	0.00	0.00	0.21	0.25	0.25	0.05	0.32	0.32
Crit Moves:	****						****				****	
Green/Cycle:	0.35	0.35	0.48	0.00	0.00	0.00	0.16	0.35	0.35	0.12	0.31	0.31
Volume/Cap:	0.66	0.66	0.46	0.00	0.00	0.00	1.28	0.72	0.72	0.41	1.03	1.03
Uniform Del:	29.9	29.9	19.2	0.0	0.0	0.0	46.0	31.1	31.1	44.5	38.0	38.0
IncremntDel:	1.7	1.7	2.3	0.0	0.0	0.0	135.1	4.2	4.2	3.3	37.2	37.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.6	31.6	21.5	0.0	0.0	0.0	181.1	35.3	35.3	47.9	75.2	75.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.6	31.6	21.5	0.0	0.0	0.0	181.1	35.3	35.3	47.9	75.2	75.2
LOS by Move:	C	C	C	A	A	A	F	D	D	D	E	E
HCM2kAvgQ:	10	10	6	0	0	0	19	11	11	3	25	25

Note: Queue reported is the number of cars per lane.

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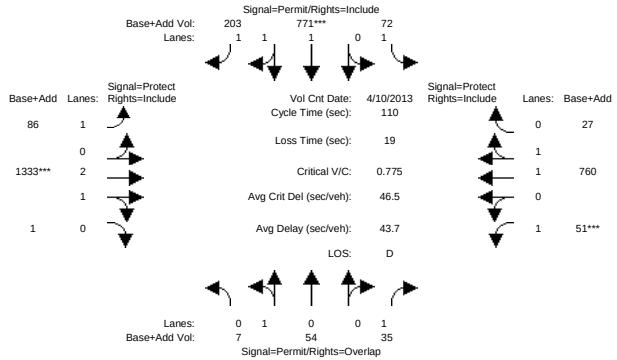
Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module: >> Count Date: 10 Apr 2013 << 7:00-8:45am												
Base Vol:	7	47	28	72	335	203	86	1333	1	38	760	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	47	28	72	335	203	86	1333	1	38	760	27
Added Vol:	0	7	7	0	436	0	0	0	0	13	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	54	35	72	771	203	86	1333	1	51	760	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	8	58	38	77	829	218	92	1433	1	55	817	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	58	38	77	829	218	92	1433	1	55	817	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	58	38	77	829	218	92	1433	1	55	817	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	0.78	0.69	0.58	0.79	0.77	0.81	0.77	0.78	0.81	0.80	0.80
Lanes:	0.11	0.89	1.00	1.00	2.00	1.00	1.00	2.99	0.01	1.00	1.93	0.07
Final Sat.:	170	1310	1319	1111	2983	1470	1539	4377	2	1539	2930	104
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.03	0.07	0.28	0.15	0.06	0.33	0.33	0.04	0.28	0.28
Crit Moves:					****			****		****		
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.13	0.13	0.06	0.20	0.78	0.42	0.44	0.97	0.97	0.26	0.83	0.83
Uniform Del:	24.0	24.0	14.7	24.6	31.7	26.9	43.6	36.0	36.0	42.5	33.6	33.6
IncremntDel:	0.5	0.5	0.2	1.1	4.7	0.5	6.6	17.9	17.9	3.0	7.8	7.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	24.5	24.5	14.8	25.7	36.4	27.4	50.2	53.9	53.9	45.5	41.4	41.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.5	24.5	14.8	25.7	36.4	27.4	50.2	53.9	53.9	45.5	41.4	41.4
LOS by Move:	C	C	B	C	D	C	D	D	D	D	D	D
HCM2kAvgQ:	1	1	1	2	15	6	3	23	23	2	14	14

Note: Queue reported is the number of cars per lane.

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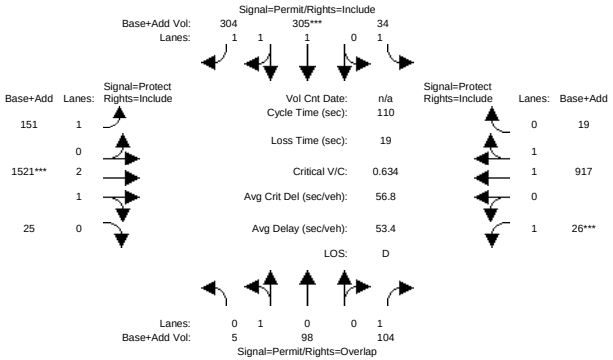
Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	5	60	61	34	250	304	151	1521	25	24	917	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	60	61	34	250	304	151	1521	25	24	917	19
Added Vol:	0	38	43	0	55	0	0	0	0	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	98	104	34	305	304	151	1521	25	26	917	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	5	101	107	35	314	313	156	1568	26	27	945	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	101	107	35	314	313	156	1568	26	27	945	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	101	107	35	314	313	156	1568	26	27	945	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.84	0.59	0.50	0.75	0.64	0.81	0.81	0.77	0.81	0.81	0.80
Lanes:	0.05	0.95	1.00	1.00	1.38	1.62	1.00	2.95	0.05	1.00	1.96	0.04
Final Sat.:	77	1517	1126	942	1964	1958	1539	4514	74	1539	3007	62
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.10	0.04	0.16	0.16	0.10	0.35	0.35	0.02	0.31	0.31
Crit Moves:					****			****		****		
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.19	0.19	0.19	0.10	0.45	0.45	0.74	1.03	1.03	0.13	0.93	0.93
Uniform Del:	24.5	24.5	15.8	23.8	27.3	27.3	45.6	36.5	36.5	41.7	35.3	35.3
IncremntDel:	0.7	0.7	0.8	0.6	1.1	1.1	20.9	31.8	31.8	1.3	16.1	16.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.3	25.3	16.5	24.4	28.3	28.3	66.5	68.3	68.3	43.0	51.4	51.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.3	25.3	16.5	24.4	28.3	28.3	66.5	68.3	68.3	43.0	51.4	51.4
LOS by Move:	C	C	B	C	C	C	E	E	E	D	D	D
HCM2kAvgQ:	2	2	2	1	6	6	7	28	27	1	16	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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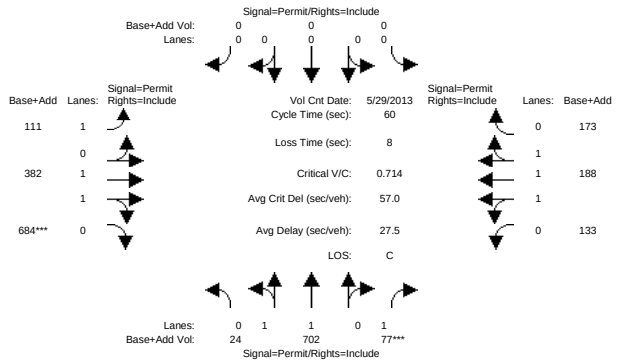
Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	21	0	21	0	0	31	31	31	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am												
Base Vol:	24	661	70	0	0	0	111	382	268	71	188	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	661	70	0	0	0	111	382	268	71	188	173
Added Vol:	0	41	7	0	0	0	0	0	416	62	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	702	77	0	0	0	111	382	684	133	188	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	760	83	0	0	0	120	413	740	144	203	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	760	83	0	0	0	120	413	740	144	203	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	760	83	0	0	0	120	413	740	144	203	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.38	0.73	0.71	0.47	0.47	0.47
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.83	1.17	1.00
Final Sat.:	101	2965	1200	0	0	0	718	1392	1348	742	1049	887
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.07	0.00	0.00	0.00	0.17	0.30	0.55	0.19	0.19	0.21
Crit Moves:			****						****			
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.73	0.73	0.20	0.00	0.00	0.00	0.32	0.57	1.06	0.38	0.38	0.41
Uniform Del:	17.0	17.0	13.6	0.0	0.0	0.0	8.4	10.0	14.5	8.7	8.7	8.9
IncremntDel:	4.4	4.4	1.1	0.0	0.0	0.0	2.3	1.2	45.5	0.8	0.8	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	21.5	21.5	14.7	0.0	0.0	0.0	10.7	11.2	60.0	9.5	9.5	9.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.5	21.5	14.7	0.0	0.0	0.0	10.7	11.2	60.0	9.5	9.5	9.8
LOS by Move:	C	C	B	A	A	A	B	B	E	A	A	A
HCM2kAvgQ:	8	8	1	0	0	0	2	6	26	2	3	3

Note: Queue reported is the number of cars per lane.

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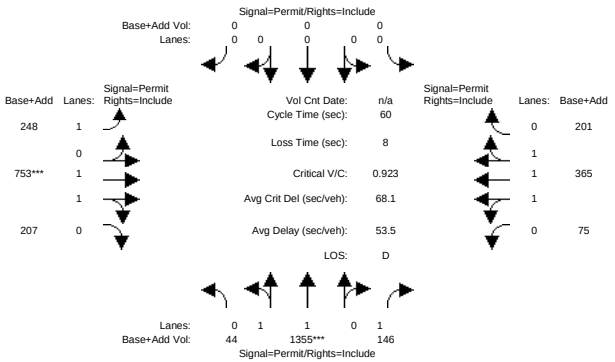
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	44	1109	98	0	0	0	248	753	154	66	365	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	1109	98	0	0	0	248	753	154	66	365	201
Added Vol:	0	246	48	0	0	0	0	0	53	9	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	1355	146	0	0	0	248	753	207	75	365	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	45	1391	150	0	0	0	255	773	213	77	375	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	1391	150	0	0	0	255	773	213	77	375	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	1391	150	0	0	0	255	773	213	77	375	206
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.32	0.78	0.78	0.53	0.54	0.53
Lanes:	0.06	1.94	1.00	0.00	0.00	0.00	1.00	1.56	0.44	0.35	1.70	0.95
Final Sat.:	96	2970	1201	0	0	0	616	2332	641	356	1731	953
Capacity Analysis Module:												
Vol/Sat:	0.47	0.47	0.12	0.00	0.00	0.00	0.41	0.33	0.33	0.22	0.22	0.22
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.00	0.00	0.00	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	1.17	1.17	0.31	0.00	0.00	0.00	0.89	0.71	0.71	0.46	0.46	0.46
Uniform Del:	18.0	18.0	12.3	0.0	0.0	0.0	14.5	12.8	12.8	10.9	10.9	10.9
IncremntDel:	85.9	85.9	1.7	0.0	0.0	0.0	30.5	3.1	3.1	1.1	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	103.9	104	14.0	0.0	0.0	0.0	45.0	15.9	15.9	12.0	12.0	12.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	103.9	104	14.0	0.0	0.0	0.0	45.0	15.9	15.9	12.0	12.0	12.0
LOS by Move:	F	F	B	A	A	A	D	B	B	B	B	B
HCM2kAvgQ:	31	31	2	0	0	0	8	9	9	4	4	4

Note: Queue reported is the number of cars per lane.

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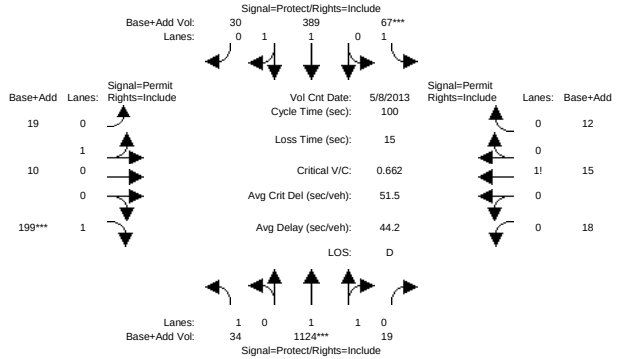
Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	36	36	17	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	34	1072	19	67	286	15	13	10	55	18	15	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	1072	19	67	286	15	13	10	55	18	15	12
Added Vol:	0	52	0	0	103	15	6	0	144	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	1124	19	67	389	30	19	10	199	18	15	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	36	1183	20	71	409	32	20	11	209	19	16	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1183	20	71	409	32	20	11	209	19	16	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	1183	20	71	409	32	20	11	209	19	16	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.71	0.73	0.69	0.73	0.75	0.74
Lanes:	1.00	1.96	0.04	1.00	1.86	0.14	0.66	0.34	1.00	0.40	0.33	0.27
Final Sat.:	1539	3315	56	1539	2826	218	895	471	1313	563	469	375
Capacity Analysis Module:												
Vol/Sat:	0.02	0.36	0.36	0.05	0.14	0.14	0.02	0.02	0.16	0.03	0.03	0.03
Crit Moves:		****			****				****			
Green/Cycle:	0.15	0.36	0.36	0.17	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.15	0.99	0.99	0.27	0.38	0.38	0.07	0.07	0.50	0.11	0.11	0.11
Uniform Del:	37.0	31.8	31.8	36.1	22.5	22.5	23.6	23.6	27.5	23.9	23.9	23.9
IncremntDel:	1.4	23.9	23.9	2.5	1.0	1.0	0.3	0.3	4.2	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	55.7	55.7	38.6	23.4	23.4	24.0	24.0	31.7	24.4	24.4	24.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	55.7	55.7	38.6	23.4	23.4	24.0	24.0	31.7	24.4	24.4	24.4
LOS by Move:	D	E	E	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	21	19	2	5	5	1	1	5	1	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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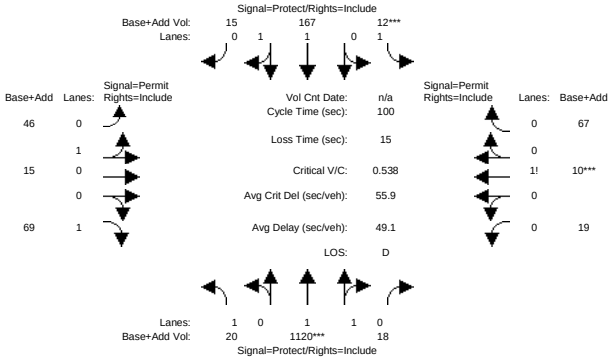
Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	16	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	794	18	12	154	13	9	15	56	19	10	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	794	18	12	154	13	9	15	56	19	10	67
Added Vol:	0	326	0	0	13	2	37	0	13	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1120	18	12	167	15	46	15	69	19	10	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	1179	19	13	176	16	48	16	73	20	11	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1179	19	13	176	16	48	16	73	20	11	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1179	19	13	176	16	48	16	73	20	11	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.80	0.79	0.61	0.65	0.65	0.72	0.73	0.67
Lanes:	1.00	1.97	0.03	1.00	1.83	0.17	0.77	0.23	1.00	0.19	0.10	0.71
Final Sat.:	1539	3173	51	1539	2788	250	887	289	1226	259	136	912
Capacity Analysis Module:												
Vol/Sat:	0.01	0.37	0.37	0.01	0.06	0.06	0.05	0.05	0.06	0.08	0.08	0.08
Crit Moves:		****			****						****	
Green/Cycle:	0.15	0.37	0.37	0.16	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.09	1.00	1.00	0.05	0.17	0.17	0.17	0.17	0.19	0.24	0.24	0.24
Uniform Del:	36.6	31.5	31.5	35.6	20.5	20.5	24.5	24.5	24.6	25.1	25.1	25.1
IncremntDel:	0.8	27.1	27.1	0.4	0.3	0.3	1.0	1.0	1.0	1.4	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.4	58.6	58.6	36.0	20.8	20.8	25.4	25.4	25.6	26.4	26.4	26.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	58.6	58.6	36.0	20.8	20.8	25.4	25.4	25.6	26.4	26.4	26.4
LOS by Move:	D	E	E	E	D	C	C	C	C	C	C	C
HCM2kAvgQ:	1	22	20	0	2	2	1	1	2	2	3	2

Note: Queue reported is the number of cars per lane.

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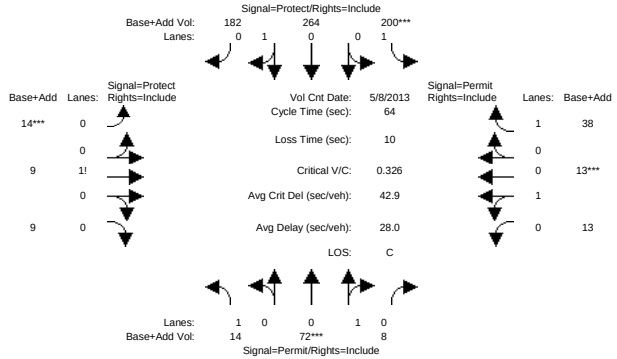
Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	21	21	11	32	0	12	22	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	14	60	6	56	129	12	12	5	9	6	6	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	60	6	56	129	12	12	5	9	6	6	38
Added Vol:	0	12	2	144	135	170	2	4	0	7	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	72	8	200	264	182	14	9	9	13	13	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	16	85	9	236	311	214	16	11	11	15	15	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	85	9	236	311	214	16	11	11	15	15	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	85	9	236	311	214	16	11	11	15	15	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.19	0.67	0.67	0.81	0.80	0.78	0.70	0.70	0.69	0.80	0.83	0.68
Lanes:	1.00	0.90	0.10	1.00	0.59	0.41	0.43	0.28	0.29	0.51	0.49	1.00
Final Sat.:	361	1148	128	1539	893	616	581	373	373	772	772	1286
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.15	0.35	0.35	0.03	0.03	0.03	0.02	0.02	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.17	0.50	0.50	0.19	0.34	0.34	0.16	0.16	0.16
Volume/Cap:	0.14	0.23	0.23	0.89	0.70	0.70	0.15	0.08	0.08	0.13	0.13	0.22
Uniform Del:	15.1	15.6	15.6	25.9	12.3	12.3	21.7	14.2	14.2	23.2	23.2	23.6
IncremntDel:	2.4	1.2	1.2	33.0	5.3	5.3	1.3	0.4	0.4	1.1	1.1	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.6	16.8	16.8	58.9	17.5	17.5	23.0	14.5	14.5	24.3	24.3	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.6	16.8	16.8	58.9	17.5	17.5	23.0	14.5	14.5	24.3	24.3	26.1
LOS by Move:	B	B	B	E	B	B	C	B	B	C	C	C
HCM2kAvgQ:	0	2	1	5	8	8	0	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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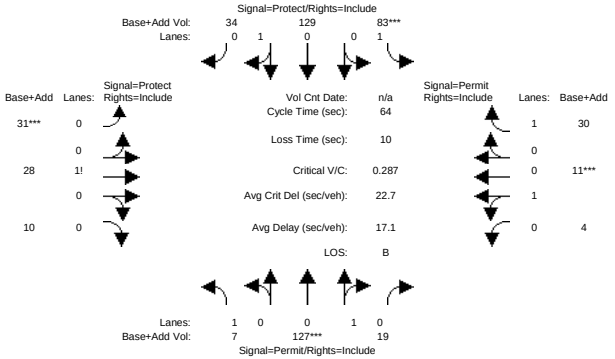
Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	21	21	21	14	35	35	9	19	19	10	10	10
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	7	57	4	70	110	10	19	6	10	3	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	57	4	70	110	10	19	6	10	3	10	30
Added Vol:	0	70	15	13	19	24	12	22	0	1	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	127	19	83	129	34	31	28	10	4	11	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	7	134	20	87	136	36	33	29	11	4	12	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	134	20	87	136	36	33	29	11	4	12	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	134	20	87	136	36	33	29	11	4	12	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.41	0.67	0.64	0.81	0.83	0.79	0.72	0.72	0.68	0.78	0.84	0.65
Lanes:	1.00	0.86	0.14	1.00	0.78	0.22	0.45	0.40	0.15	0.28	0.72	1.00
Final Sat.:	773	1100	165	1539	1231	325	606	547	195	417	1147	1227
Capacity Analysis Module:												
Vol/Sat:	0.01	0.12	0.12	0.06	0.11	0.11	0.05	0.05	0.05	0.01	0.01	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.03	0.37	0.37	0.26	0.20	0.20	0.38	0.18	0.18	0.06	0.06	0.16
Uniform Del:	14.6	16.4	16.4	20.7	7.4	7.4	25.0	16.7	16.7	23.0	23.0	23.4
IncremntDel:	0.2	2.5	2.5	1.9	0.5	0.5	5.8	1.0	1.0	0.5	0.5	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.8	19.0	19.0	22.6	7.9	7.9	30.8	17.7	17.7	23.5	23.5	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	19.0	19.0	22.6	7.9	7.9	30.8	17.7	17.7	23.5	23.5	25.2
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	3	3	1	2	2	1	1	0	0	0	1

Note: Queue reported is the number of cars per lane.

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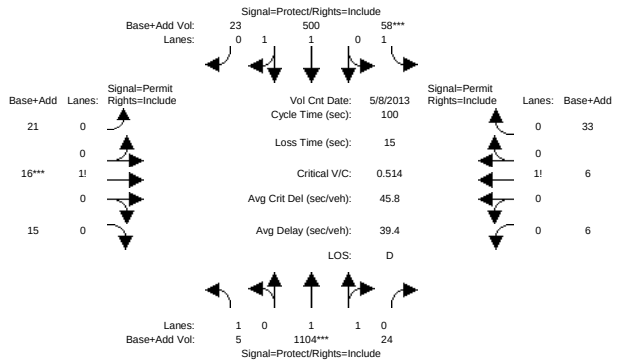
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	5	1063	24	58	265	12	10	16	15	6	6	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1063	24	58	265	12	10	16	15	6	6	33
Added Vol:	0	41	0	0	235	11	11	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1104	24	58	500	23	21	16	15	6	6	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	5	1162	25	61	526	24	22	17	16	6	6	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1162	25	61	526	24	22	17	16	6	6	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1162	25	61	526	24	22	17	16	6	6	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.64	0.65	0.64	0.75	0.75	0.73
Lanes:	1.00	1.95	0.05	1.00	1.91	0.09	0.41	0.30	0.29	0.13	0.13	0.74
Final Sat.:	1539	3298	72	1539	2923	134	490	374	350	185	185	1019
Capacity Analysis Module:												
Vol/Sat:	0.00	0.35	0.35	0.04	0.18	0.18	0.05	0.05	0.05	0.03	0.03	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.02	0.95	0.95	0.26	0.49	0.49	0.14	0.14	0.14	0.10	0.10	0.10
Uniform Del:	36.2	30.6	30.6	37.6	24.2	24.2	23.5	23.5	23.5	23.2	23.2	23.2
IncremntDel:	0.2	16.4	16.4	2.8	1.5	1.5	0.7	0.7	0.7	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.4	47.0	47.0	40.4	25.7	25.7	24.2	24.2	24.2	23.7	23.7	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.4	47.0	47.0	40.4	25.7	25.7	24.2	24.2	24.2	23.7	23.7	23.7
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	24	22	2	7	7	1	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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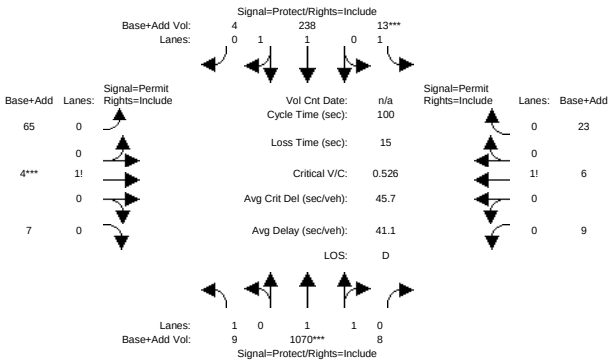
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	9	804	8	13	214	2	5	4	7	9	6	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	804	8	13	214	2	5	4	7	9	6	23
Added Vol:	0	266	0	0	24	2	60	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	1070	8	13	238	4	65	4	7	9	6	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	1126	8	14	251	4	68	4	7	9	6	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1126	8	14	251	4	68	4	7	9	6	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1126	8	14	251	4	68	4	7	9	6	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.80	0.47	0.56	0.55	0.71	0.74	0.66
Lanes:	1.00	1.98	0.02	1.00	1.97	0.03	0.87	0.05	0.08	0.23	0.14	0.63
Final Sat.:	1539	3204	24	1539	3019	51	785	48	85	307	204	784
Capacity Analysis Module:												
Vol/Sat:	0.01	0.35	0.35	0.01	0.08	0.08	0.09	0.09	0.09	0.03	0.03	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.04	0.95	0.95	0.06	0.22	0.22	0.26	0.26	0.26	0.09	0.09	0.09
Uniform Del:	36.3	30.6	30.6	36.4	21.6	21.6	24.6	24.6	24.6	23.2	23.2	23.2
IncremntDel:	0.3	16.5	16.5	0.5	0.5	0.5	2.1	2.1	2.1	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.7	47.1	47.1	36.9	22.1	22.1	26.7	26.7	26.7	23.6	23.6	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	47.1	47.1	36.9	22.1	22.1	26.7	26.7	26.7	23.6	23.6	23.6
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	23	22	0	3	3	2	2	2	1	1	1

Note: Queue reported is the number of cars per lane.

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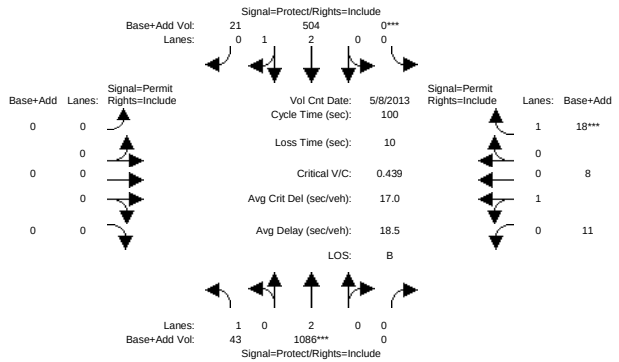
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	5	1045	0	0	283	11	0	0	0	11	8	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1045	0	0	283	11	0	0	0	11	8	18
Added Vol:	38	41	0	0	221	10	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	1086	0	0	504	21	0	0	0	11	8	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	46	1166	0	0	541	23	0	0	0	12	9	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	1166	0	0	541	23	0	0	0	12	9	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	1166	0	0	541	23	0	0	0	12	9	19
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.79	0.81	0.62
Lanes:	1.00	2.00	0.00	0.00	2.88	0.12	0.00	0.00	0.00	0.59	0.41	1.00
Final Sat.:	1539	3079	0	0	4221	176	0	0	0	882	642	1179
Capacity Analysis Module:												
Vol/Sat:	0.03	0.38	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.01	0.01	0.02
Crit Moves:		****		****								****
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.20	0.66	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.04	0.04	0.05
Uniform Del:	36.9	14.9	0.0	0.0	19.5	19.5	0.0	0.0	0.0	22.7	22.7	22.8
IncremntDel:	1.8	2.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	38.8	16.9	0.0	0.0	20.0	20.0	0.0	0.0	0.0	22.9	22.9	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.8	16.9	0.0	0.0	20.0	20.0	0.0	0.0	0.0	22.9	22.9	23.1
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	13	0	0	4	4	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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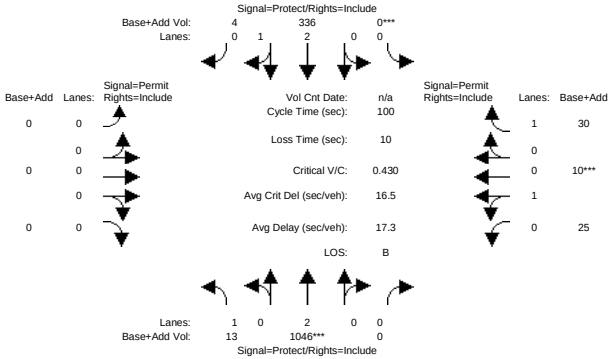
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	6	784	0	0	315	2	0	0	0	25	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	784	0	0	315	2	0	0	0	25	10	30
Added Vol:	7	262	0	0	21	2	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	1046	0	0	336	4	0	0	0	25	10	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	14	1113	0	0	357	4	0	0	0	27	11	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	1113	0	0	357	4	0	0	0	27	11	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	1113	0	0	357	4	0	0	0	27	11	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.75	0.80	0.60
Lanes:	1.00	2.00	0.00	0.00	2.96	0.04	0.00	0.00	0.00	0.73	0.27	1.00
Final Sat.:	1539	3079	0	0	4363	52	0	0	0	1039	416	1147
Capacity Analysis Module:												
Vol/Sat:	0.01	0.36	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.03	0.03	0.03
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.06	0.63	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.08	0.08	0.08
Uniform Del:	36.2	14.5	0.0	0.0	18.5	18.5	0.0	0.0	0.0	23.0	23.0	23.1
IncremntDel:	0.5	1.8	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	36.6	16.2	0.0	0.0	18.8	18.8	0.0	0.0	0.0	23.3	23.3	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	16.2	0.0	0.0	18.8	18.8	0.0	0.0	0.0	23.3	23.3	23.5
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	0	12	0	0	3	3	0	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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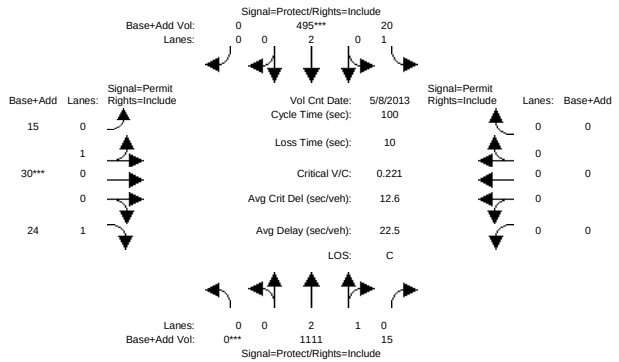
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #31: Mission Bay South/3rd



Street Name: 3rd Street Mission Bay South

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	0	1045	15	20	274	0	2	30	18	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1045	15	20	274	0	2	30	18	0	0	0
Added Vol:	0	66	0	0	221	0	13	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1111	15	20	495	0	15	30	24	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1167	16	21	520	0	16	32	25	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1167	16	21	520	0	16	32	25	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1167	16	21	520	0	16	32	25	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.81	0.82	0.62	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.34	0.66	1.00	0.00	0.00	0.00
Final Sat.:	0	4356	59	1539	3079	0	520	1039	1186	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.01	0.17	0.00	0.03	0.03	0.02	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.68	0.68	0.08	0.30	0.00	0.09	0.09	0.06	0.00	0.00	0.00
Uniform Del:	0.0	25.0	25.0	34.5	11.1	0.0	23.1	23.1	22.9	0.0	0.0	0.0
IncremntDel:	0.0	2.1	2.1	0.6	0.4	0.0	0.4	0.4	0.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	27.1	27.1	35.1	11.6	0.0	23.5	23.5	23.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	27.1	35.1	11.6	0.0	23.5	23.5	23.2	0.0	0.0	0.0
LOS by Move:	A	C	C	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	12	12	1	4	0	1	1	1	0	0	0

Note: Queue reported is the number of cars per lane.

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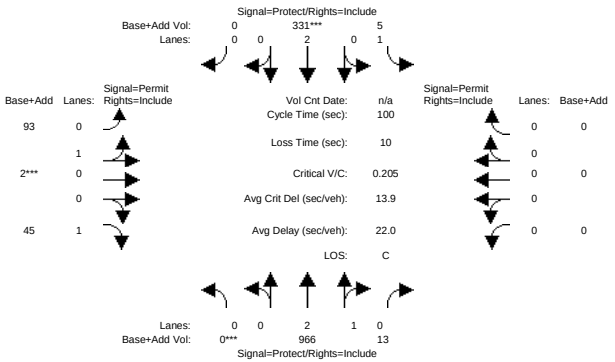
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #31: Mission Bay South/3rd



Street Name: 3rd Street Mission Bay South

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	772	13	5	310	0	18	2	9	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	772	13	5	310	0	18	2	9	0	0	0
Added Vol:	0	194	0	0	21	0	75	0	36	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	966	13	5	331	0	93	2	45	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1017	14	5	348	0	98	2	47	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1017	14	5	348	0	98	2	47	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1017	14	5	348	0	98	2	47	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.73	0.77	0.63	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	4356	59	1539	3079	0	1365	29	1188	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.23	0.00	0.11	0.00	0.07	0.07	0.04	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.59	0.59	0.02	0.20	0.00	0.22	0.22	0.12	0.00	0.00	0.00
Uniform Del:	0.0	23.8	23.8	34.2	10.4	0.0	24.2	24.2	23.4	0.0	0.0	0.0
IncremntDel:	0.0	1.5	1.5	0.1	0.3	0.0	1.1	1.1	0.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	25.3	25.3	34.3	10.7	0.0	25.3	25.3	24.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	25.3	25.3	34.3	10.7	0.0	25.3	25.3	24.0	0.0	0.0	0.0
LOS by Move:	A	C	C	C	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	10	10	0	3	0	2	2	1	0	0	0

Note: Queue reported is the number of cars per lane.

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FHWA Roundabout (Future Volume Alternative)
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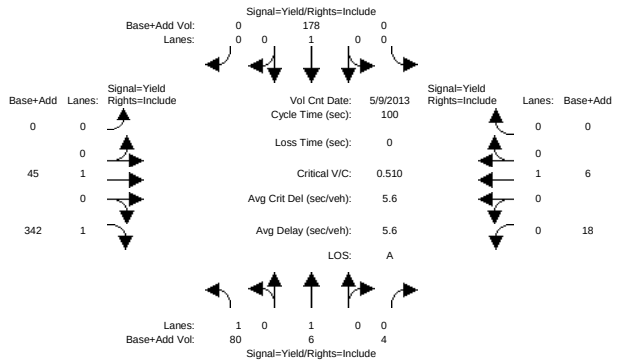
Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	17	0	0	0	0	0	17	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	0	0	0	0	0	0	17	0	0	0
Added Vol:	63	6	4	0	178	0	0	45	325	18	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	6	4	0	178	0	0	45	342	18	6	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	111	8	6	0	247	0	0	63	475	25	8	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	8	6	0	247	0	0	63	475	25	8	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	8	6	0	247	0	0	63	475	25	8	0
PCE Module:												
AutoPCE:	111	8	6	0	247	0	0	63	475	25	8	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	111	8	6	0	247	0	0	63	475	25	8	0

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	63	144	272	119
MaxVolume:	1166	1122	1053	1136
PedVolume:	0	0	0	0
AdjMaxVol:	1166	1122	1053	1136
ApproachVol:	125	247	538	33
ApproachV/C:	0.11	0.22	0.51	0.03
ApproachDel:	3.5	4.1	6.9	3.3
ApproachLOS:	A	A	A	A
Queue:	0.4	0.8	3.0	0.1

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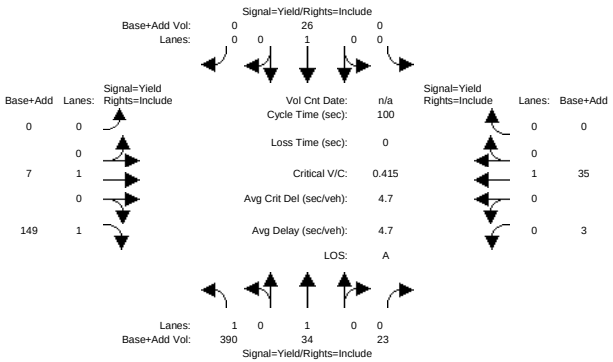
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	32	0	1	0	0	0	0	0	103	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	0	1	0	0	0	0	0	103	0	0	0
Added Vol:	358	34	22	0	26	0	0	7	46	3	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	390	34	23	0	26	0	0	7	149	3	35	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	433	38	26	0	29	0	0	8	166	3	39	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	433	38	26	0	29	0	0	8	166	3	39	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	433	38	26	0	29	0	0	8	166	3	39	0
PCE Module:												
AutoPCE:	433	38	26	0	29	0	0	8	166	3	39	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	433	38	26	0	29	0	0	8	166	3	39	0

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	8	476	32	471
MaxVolume:	1196	943	1183	946
PedVolume:	0	0	0	0
AdjMaxVol:	1196	943	1183	946
ApproachVol:	497	29	173	42
ApproachV/C:	0.42	0.03	0.15	0.04
ApproachDel:	5.1	3.9	3.6	4.0
ApproachLOS:	A	A	A	A
Queue:	2.1	0.1	0.5	0.1

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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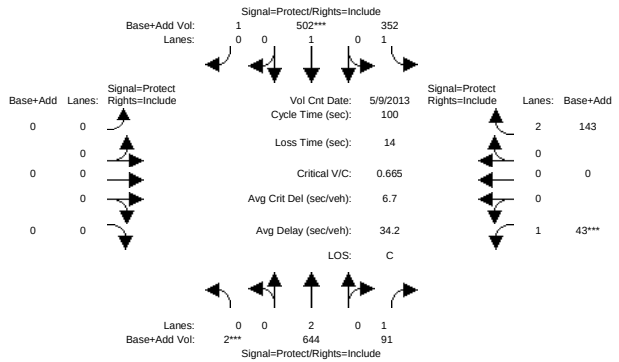
Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	2	620	30	44	332	1	0	0	0	29	0	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	620	30	44	332	1	0	0	0	29	0	88
Added Vol:	0	24	61	308	170	0	0	0	0	14	0	55
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	644	91	352	502	1	0	0	0	43	0	143
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	2	672	95	367	524	1	0	0	0	45	0	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	672	95	367	524	1	0	0	0	45	0	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	672	95	367	524	1	0	0	0	45	0	149
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.57	0.81	0.85	0.85	1.00	1.00	1.00	0.81	1.00	0.53
Lanes:	0.01	1.99	1.00	1.00	0.99	0.01	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	10	3069	1079	1539	1617	3	0	0	0	1539	0	2000
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.09	0.24	0.32	0.32	0.00	0.00	0.00	0.03	0.00	0.07
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.37	0.37	0.24	0.61	0.61	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	xxxx	0.60	0.24	0.98	0.53	0.53	0.00	0.00	0.00	0.12	0.00	0.30
Uniform Del:	0.0	25.7	22.0	37.6	11.3	11.3	0.0	0.0	0.0	29.0	0.0	30.4
IncremntDel:	0.0	2.3	1.4	42.1	2.0	2.0	0.0	0.0	0.0	0.6	0.0	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	28.0	23.4	79.7	13.3	13.3	0.0	0.0	0.0	29.6	0.0	31.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.0	23.4	79.7	13.3	13.3	0.0	0.0	0.0	29.6	0.0	31.9
LOS by Move:	A	C	C	E	B	B	A	A	A	C	A	C
HCM2kAvgQ:	10	9	2	17	10	10	0	0	0	1	0	2

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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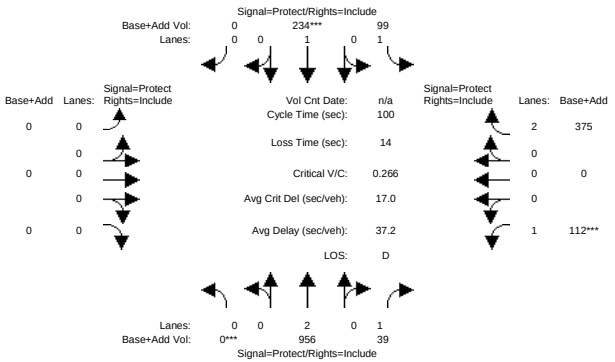
Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	786	29	57	215	0	0	0	0	26	0	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	786	29	57	215	0	0	0	0	26	0	67
Added Vol:	0	170	10	42	19	0	0	0	0	86	0	308
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	956	39	99	234	0	0	0	0	112	0	375
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1006	41	104	246	0	0	0	0	118	0	395
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1006	41	104	246	0	0	0	0	118	0	395
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1006	41	104	246	0	0	0	0	118	0	395
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.41	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.42
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	784	1539	1620	0	0	0	0	1539	0	1580
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.05	0.07	0.15	0.00	0.00	0.00	0.00	0.08	0.00	0.25
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.44	0.44	0.17	0.61	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.74	0.12	0.40	0.25	0.00	0.00	0.00	0.00	0.31	0.00	1.00
Uniform Del:	0.0	23.4	16.6	36.9	9.0	0.0	0.0	0.0	0.0	30.5	0.0	37.5
IncremntDel:	0.0	3.7	0.7	4.4	0.6	0.0	0.0	0.0	0.0	2.1	0.0	45.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	27.1	17.3	41.3	9.6	0.0	0.0	0.0	0.0	32.5	0.0	82.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	17.3	41.3	9.6	0.0	0.0	0.0	0.0	32.5	0.0	82.7
LOS by Move:	A	C	B	D	A	A	A	A	A	C	A	F
HCM2kAvgQ:	0	15	1	3	3	0	0	0	0	3	0	12

Note: Queue reported is the number of cars per lane.

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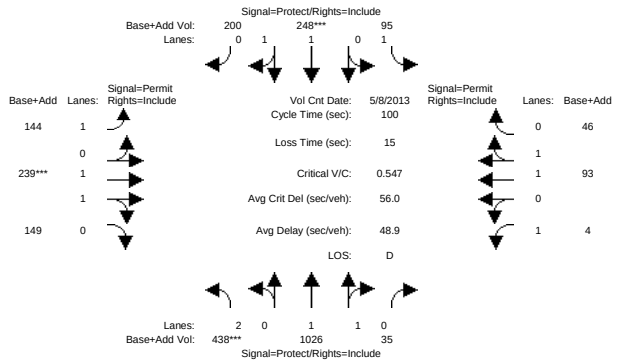
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	297	986	10	18	206	73	124	62	125	2	80	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	297	986	10	18	206	73	124	62	125	2	80	40
Added Vol:	141	40	25	77	42	127	20	177	24	2	13	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	438	1026	35	95	248	200	144	239	149	4	93	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	455	1067	36	99	258	208	150	248	155	4	97	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	455	1067	36	99	258	208	150	248	155	4	97	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	455	1067	36	99	258	208	150	248	155	4	97	48
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.76	0.74	0.54	0.72	0.70	0.38	0.72	0.71
Lanes:	2.00	1.93	0.07	1.00	1.10	0.90	1.00	1.22	0.78	1.00	1.33	0.67
Final Sat.:	2987	2962	101	1539	1577	1272	1023	1664	1038	727	1826	903
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.36	0.06	0.16	0.16	0.15	0.15	0.15	0.01	0.05	0.05
Crit Moves:	****				****			****				
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	1.09	0.95	0.95	0.53	0.45	0.45	0.42	0.43	0.43	0.02	0.15	0.15
Uniform Del:	43.0	30.0	30.0	41.4	24.5	24.5	24.7	24.8	24.8	21.2	22.3	22.3
IncremntDel:	70.1	16.4	16.4	10.6	1.5	1.5	3.6	1.4	1.4	0.1	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	113.1	46.5	46.5	52.0	25.9	25.9	28.3	26.2	26.2	21.4	22.6	22.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	113.1	46.5	46.5	52.0	25.9	25.9	28.3	26.2	26.2	21.4	22.6	22.6
LOS by Move:	F	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	9	17	17	4	6	6	3	5	5	0	2	2

Note: Queue reported is the number of cars per lane.

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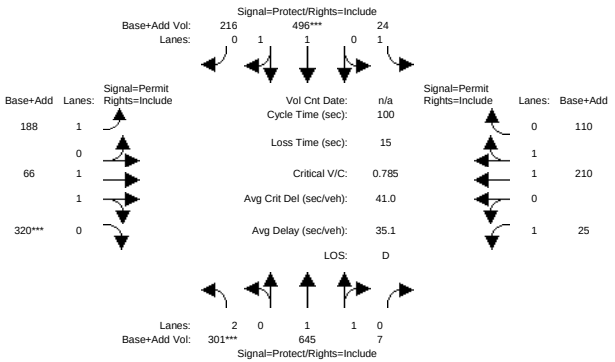
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	256	624	5	18	348	146	78	52	257	3	71	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	256	624	5	18	348	146	78	52	257	3	71	47
Added Vol:	45	21	2	6	148	70	110	14	63	22	139	63
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	301	645	7	24	496	216	188	66	320	25	210	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	324	694	8	26	533	232	202	71	344	27	226	118
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	694	8	26	533	232	202	71	344	27	226	118
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	324	694	8	26	533	232	202	71	344	27	226	118
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.77	0.75	0.41	0.67	0.61	0.37	0.72	0.70
Lanes:	2.00	1.98	0.02	1.00	1.38	0.62	1.00	1.00	1.00	1.00	1.30	0.70
Final Sat.:	2987	3040	33	1539	2030	884	779	1264	1161	695	1774	929
Capacity Analysis Module:												
Vol/Sat:	0.11	0.23	0.23	0.02	0.26	0.26	0.26	0.06	0.30	0.04	0.13	0.13
Crit Moves:	****				****				****			
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.77	0.60	0.60	0.14	0.73	0.73	0.74	0.16	0.85	0.11	0.36	0.36
Uniform Del:	41.5	24.9	24.9	39.4	27.8	27.8	28.5	22.4	30.0	22.0	24.2	24.2
IncremntDel:	13.1	2.3	2.3	1.6	4.5	4.5	16.5	0.1	16.4	0.9	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.5	27.2	27.2	41.0	32.3	32.3	45.1	22.5	46.4	22.9	25.3	25.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	27.2	27.2	41.0	32.3	32.3	45.1	22.5	46.4	22.9	25.3	25.3
LOS by Move:	D	C	C	D	C	C	D	C	D	C	C	C
HCM2kAvgQ:	5	9	9	1	12	12	6	2	12	1	4	4

Note: Queue reported is the number of cars per lane.

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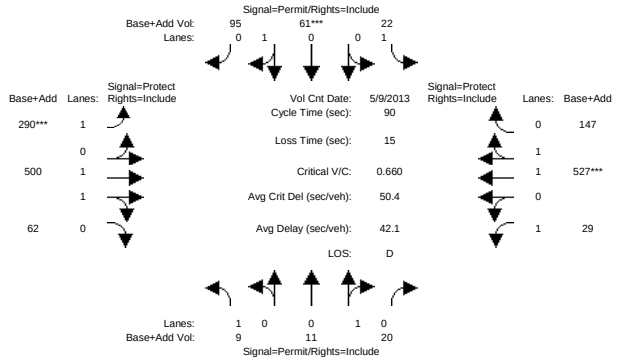
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #35: 16th/4th




```
Street Name:            4th Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   30   30   30    30   30   30    17   30   30    15   28   28
Y+R:           5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:      4    2   17    22    3   86   106  283   22    21  323   78
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   4    2   17    22    3   86   106  283   22    21  323   78
Added Vol:     5    9    3     0   58    9   184  217   40     8  204   69
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   9   11   20    22   61   95   290  500   62    29  527  147
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:    9   12   21    23   64  100   305  525   65    30  554  154
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   9   12   21    23   64  100   305  525   65    30  554  154
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   9   12   21    23   64  100   305  525   65    30  554  154
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:   0.51 0.77 0.75  0.60 0.78 0.75  0.81 0.75 0.74  0.81 0.78 0.77
Lanes:        1.00 0.35 0.65  1.00 0.38 0.62  1.00 1.78 0.22  1.00 1.56 0.44
Final Sat.:    977  509  926  1149  566  882  1539 2525  313  1539 2319  647
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.01 0.02 0.02  0.02 0.11 0.11  0.20 0.21 0.21  0.02 0.24 0.24
Crit Moves:                       ****            ****            ****
Green/Cycle: 0.33 0.33 0.33  0.33 0.33 0.33  0.19 0.33 0.33  0.17 0.31 0.31
Volume/Cap:  0.03 0.07 0.07  0.06 0.34 0.34  1.05 0.62 0.62  0.12 0.77 0.77
Uniform Del: 20.2 20.5 20.5  20.4 22.6 22.6  36.5 25.3 25.3  31.9 28.1 28.1
IncremntDel:  0.2  0.3  0.3   0.3  1.9  1.9  65.8  3.1  3.1   0.9  6.1  6.1
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   20.4 20.7 20.7  20.7 24.5 24.5 102.3 28.4 28.4  32.8 34.1 34.1
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  20.4 20.7 20.7  20.7 24.5 24.5 102.3 28.4 28.4  32.8 34.1 34.1
LOS by Move:    C    C    C     C    C    C     F    C    C     C    C    C
HCM2kAvgQ:      0    1    1     0    4    4    12    7    7     1   10   10
Note: Queue reported is the number of cars per lane.
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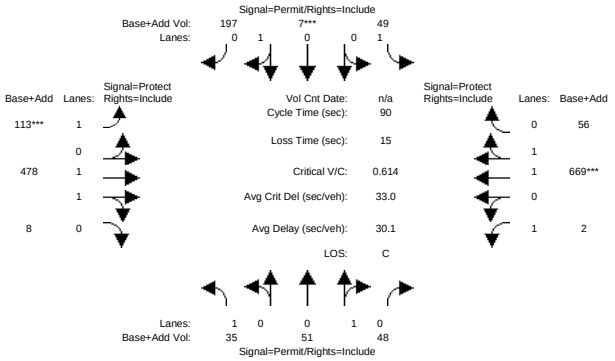
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #35: 16th/4th




```
Street Name:            4th Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   30   30   30    30   30   30    15   30   30    15   30   30
Y+R:           5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      8    1   35    46    1  142    82  306    4     1  428   44
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   8    1   35    46    1  142    82  306    4     1  428   44
Added Vol:    27   50   13     3    6   55    31  172    4     1  241   12
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  35   51   48    49    7  197   113  478    8     2  669   56
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91
PHF Volume:   38   56   53    54    8  216   124  525    9     2  735   62
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  38   56   53    54    8  216   124  525    9     2  735   62
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  38   56   53    54    8  216   124  525    9     2  735   62
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:   0.45 0.79 0.77  0.56 0.73 0.70  0.81 0.76 0.76  0.81 0.80 0.80
Lanes:        1.00 0.51 0.49  1.00 0.03 0.97  1.00 1.97 0.03  1.00 1.84 0.16
Final Sat.:    846  766  721  1064   46 1282  1539 2833   47  1539 2806  235
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.05 0.07 0.07  0.05 0.17 0.17  0.08 0.19 0.19  0.00 0.26 0.26
Crit Moves:                       ****            ****            ****
Green/Cycle: 0.33 0.33 0.33  0.33 0.33 0.33  0.17 0.33 0.33  0.17 0.33 0.33
Volume/Cap:  0.14 0.22 0.22  0.15 0.51 0.51  0.48 0.56 0.56  0.01 0.79 0.79
Uniform Del: 21.0 21.6 21.6  21.1 24.1 24.1  34.0 24.6 24.6  31.3 27.1 27.1
IncremntDel:  1.0  1.0  1.0   0.9  4.1  4.1   6.4  2.3  2.3   0.1  6.1  6.1
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   22.0 22.6 22.6  22.0 28.2 28.2  40.4 26.9 26.9  31.4 33.2 33.2
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  22.0 22.6 22.6  22.0 28.2 28.2  40.4 26.9 26.9  31.4 33.2 33.2
LOS by Move:    C    C    C     C    C    C     D    C    C     C    C    C
HCM2kAvgQ:      1    2    2     1    6    5     3    7    7     0   12   12
Note: Queue reported is the number of cars per lane.
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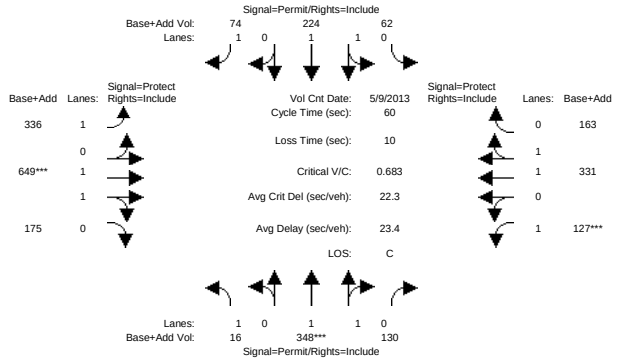
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #36: 16th/Owens

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Street Name:            Owens St                    16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   15   15     15   15   15     20   25   25     10   15   15
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:      0    0    0     53    1   70    219  348    0     5  299  100
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse:   0    0    0     53    1   70    219  348    0     5  299  100
Added Vol:    16  348  130      9  223    4    117  301  175   122   32   63
PasserByVol:   0    0    0      0    0    0      0    0    0     0    0    0
Initial Fut:  16  348  130     62  224   74    336  649  175   127  331  163
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95
PHF Volume:   17  366  137     65  236   78    354  683  184   134  348  172
Reduct Vol:    0    0    0      0    0    0      0    0    0     0    0    0
Reduced Vol:  17  366  137     65  236   78    354  683  184   134  348  172
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:  17  366  137     65  236   78    354  683  184   134  348  172
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900   1900 1900 1900   1900 1900 1900   1900 1900 1900
Adjustment:  0.43 0.78 0.77   0.58 0.59 0.69   0.81 0.74 0.73   0.81 0.77 0.76
Lanes:       1.00 1.45 0.55   0.44 1.56 1.00   1.00 1.57 0.43   1.00 1.33 0.67
Final Sat.:   826 2142  800    483 1747 1315   1539 2197  592   1539 1950  961
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.17 0.17   0.13 0.13 0.06   0.23 0.31 0.31   0.09 0.18 0.18
Crit Moves:       ****                             ****           ****
Green/Cycle: 0.25 0.25 0.25   0.25 0.25 0.25   0.33 0.42 0.42   0.17 0.25 0.25
Volume/Cap:  0.08 0.68 0.68   0.54 0.54 0.24   0.69 0.75 0.75   0.52 0.71 0.71
Uniform Del: 17.2 20.4 20.4   19.5 19.5 17.9   17.3 14.8 14.8   22.8 20.5 20.5
IncremntDel:  0.8  5.1  5.1    3.7  3.7  1.7    7.4  4.4  4.4    7.4  5.9  5.9
InitQueuDel:  0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Delay/Veh:   18.0 25.5 25.5   23.2 23.2 19.6   24.7 19.2 19.2   30.2 26.5 26.5
User DelAdj: 1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
AdjDel/Veh:  18.0 25.5 25.5   23.2 23.2 19.6   24.7 19.2 19.2   30.2 26.5 26.5
LOS by Move:    B    C    C      C    C    B      C    B    B      C    C    C
HCM2kAvgQ:      0    6    6      3    3    1      5    7    7      2    5    5
Note: Queue reported is the number of cars per lane.
```

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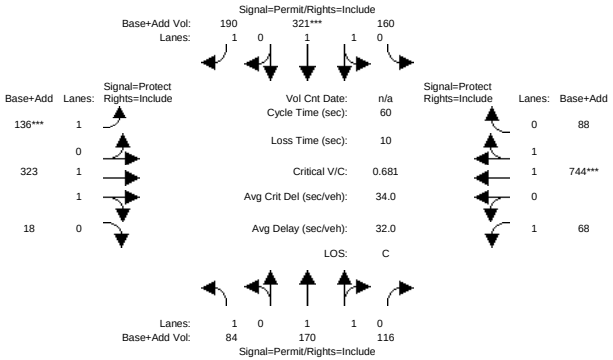
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #36: 16th/Owens




```
Street Name:            Owens St                    16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   15   15   15     15   15   15     10   20   20     10   20   20
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    1    102    0  167    117  289    0     0  501   77
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse:   0    0    1    102    0  167    117  289    0     0  501   77
Added Vol:    84  170  115     58  321   23     19   34   18    68  243   11
PasserByVol:   0    0    0      0    0    0      0    0    0     0    0    0
Initial Fut:  84  170  116    160  321  190    136  323   18    68  744   88
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95
PHF Volume:   88  179  122    168  338  200    143  340   19    72  783   93
Reduct Vol:    0    0    0      0    0    0      0    0    0     0    0    0
Reduced Vol:  88  179  122    168  338  200    143  340   19    72  783   93
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:  88  179  122    168  338  200    143  340   19    72  783   93
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900   1900 1900 1900   1900 1900 1900   1900 1900 1900
Adjustment:  0.29 0.76 0.73   0.56 0.57 0.65   0.81 0.75 0.75   0.81 0.80 0.79
Lanes:       1.00 1.17 0.83   0.67 1.33 1.00   1.00 1.89 0.11   1.00 1.79 0.21
Final Sat.:   547 1690 1153    713 1430 1241   1539 2712  151   1539 2707  320
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.11 0.11   0.24 0.24 0.16   0.09 0.13 0.13   0.05 0.29 0.29
Crit Moves:                       ****           ****                ****
Green/Cycle: 0.35 0.35 0.35   0.35 0.35 0.35   0.14 0.37 0.37   0.19 0.43 0.43
Volume/Cap:  0.47 0.30 0.30   0.68 0.68 0.46   0.68 0.33 0.33   0.25 0.68 0.68
Uniform Del: 27.9 26.2 26.2   30.7 30.7 27.9   45.2 24.6 24.6   38.1 25.6 25.6
IncremntDel:  8.0  0.8  0.8    5.0  5.0  3.6   16.4  0.8  0.8    2.0  2.9  2.9
InitQueuDel:  0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Delay/Veh:   35.9 27.0 27.0   35.7 35.7 31.5   61.6 25.4 25.4   40.2 28.5 28.5
User DelAdj: 1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
AdjDel/Veh:  35.9 27.0 27.0   35.7 35.7 31.5   61.6 25.4 25.4   40.2 28.5 28.5
LOS by Move:    D    C    C      D    D    C      E    C    C      D    C    C
HCM2kAvgQ:      3    4    4      9    9    6      5    5    4      2   12   12
Note: Queue reported is the number of cars per lane.
```

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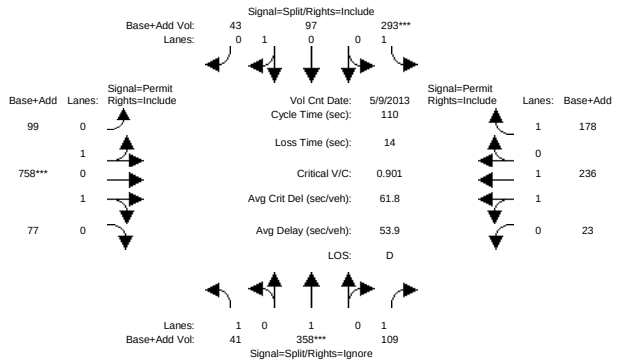
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	41	358	109	123	97	34	38	336	77	23	208	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	358	109	123	97	34	38	336	77	23	208	154
Added Vol:	0	0	0	170	0	9	61	422	0	0	28	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	358	109	293	97	43	99	758	77	23	236	178
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	42	365	0	299	99	44	101	773	79	23	241	182
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	365	0	299	99	44	101	773	79	23	241	182
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	365	0	299	99	44	101	773	79	23	241	182
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.71	0.70	0.64	0.64	0.64	0.64	0.64	0.68
Lanes:	1.00	1.00	1.00	1.00	0.69	0.31	0.21	1.62	0.17	0.18	1.82	1.00
Final Sat.:	1539	1620	1900	1539	931	413	258	1975	201	215	2211	1297
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.00	0.19	0.11	0.11	0.39	0.39	0.39	0.11	0.11	0.14
Crit Moves:		****		****				****				
Green/Cycle:	0.25	0.25	0.00	0.22	0.22	0.22	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.11	0.91	0.00	0.88	0.48	0.48	0.91	0.91	0.91	0.25	0.25	0.33
Uniform Del:	40.7	51.1	0.0	52.7	47.5	47.5	37.3	37.3	37.3	25.5	25.5	26.4
IncremntDel:	0.6	27.0	0.0	25.7	5.5	5.5	13.1	13.1	13.1	0.6	0.6	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.3	78.2	0.0	78.4	52.9	52.9	50.4	50.4	50.4	26.0	26.0	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.3	78.2	0.0	78.4	52.9	52.9	50.4	50.4	50.4	26.0	26.0	27.9
LOS by Move:	D	E	A	E	D	D	D	D	D	C	C	C
HCM2kAvgQ:	1	19	0	15	6	6	24	24	24	4	4	5

Note: Queue reported is the number of cars per lane.

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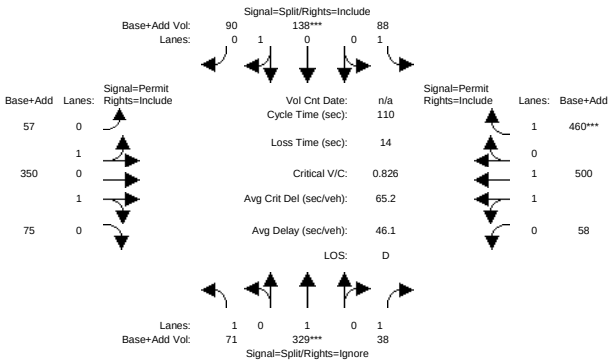
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	71	329	38	69	138	35	47	299	75	58	320	290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	329	38	69	138	35	47	299	75	58	320	290
Added Vol:	0	0	0	19	0	55	10	51	0	0	180	170
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	329	38	88	138	90	57	350	75	58	500	460
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	72	336	0	90	141	92	58	357	77	59	510	469
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	336	0	90	141	92	58	357	77	59	510	469
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	336	0	90	141	92	58	357	77	59	510	469
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.70	0.68	0.59	0.59	0.59	0.67	0.67	0.69
Lanes:	1.00	1.00	1.00	1.00	0.60	0.40	0.24	1.45	0.31	0.21	1.79	1.00
Final Sat.:	1539	1620	1900	1539	799	521	266	1636	350	265	2287	1303
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.00	0.06	0.18	0.18	0.22	0.22	0.22	0.22	0.22	0.36
Crit Moves:		****			****							****
Green/Cycle:	0.21	0.21	0.00	0.22	0.22	0.22	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	0.22	0.97	0.00	0.26	0.80	0.80	0.47	0.47	0.47	0.48	0.48	0.78
Uniform Del:	45.3	54.5	0.0	45.1	51.5	51.5	25.7	25.7	25.7	25.9	25.9	31.4
IncremntDel:	1.5	40.6	0.0	1.9	19.8	19.8	1.5	1.5	1.5	1.4	1.4	9.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.9	95.1	0.0	46.9	71.3	71.3	27.2	27.2	27.2	27.3	27.3	40.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.9	95.1	0.0	46.9	71.3	71.3	27.2	27.2	27.2	27.3	27.3	40.8
LOS by Move:	D	F	A	D	E	E	C	C	C	C	C	D
HCM2kAvgQ:	3	19	0	3	11	11	8	8	8	9	9	18

Note: Queue reported is the number of cars per lane.

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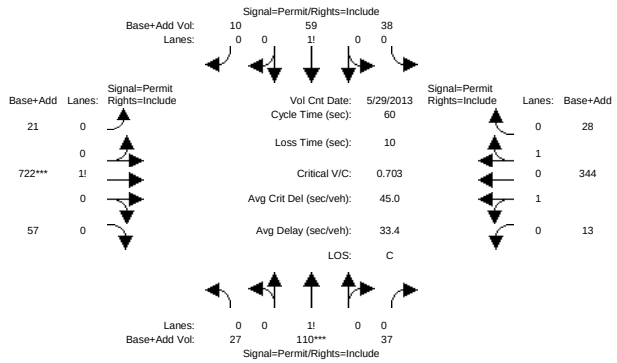
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #38: 16th St/Rhode Island




```
Street Name:         Rhode Island Street              16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    22   22   22    22   22   22    28   28   28    28   28   28
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am
Base Vol:      27  110   16    17   59   10    21  525   57     9  322   25
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   27  110   16    17   59   10    21  525   57     9  322   25
Added Vol:      0    0   21    21    0    0     0  197    0     4   22    3
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   27  110   37    38   59   10    21  722   57    13  344   28
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91
PHF Volume:    30  121   41    42   65   11    23  793   63    14  378   31
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   30  121   41    42   65   11    23  793   63    14  378   31
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   30  121   41    42   65   11    23  793   63    14  378   31
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.92  0.92  0.85 0.85  0.85  0.97 0.97  0.97  0.87 0.87  0.87
Lanes:       0.16 0.63  0.21  0.36 0.55  0.09  0.03 0.90  0.07  0.07 1.79  0.14
Final Sat.:   271 1103   371   571  887   150    48 1667   132   111 2941   239
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.11  0.11  0.07 0.07  0.07  0.48 0.48  0.48  0.13 0.13  0.13
Crit Moves:       ****                          ****
Green/Cycle: 0.37 0.37  0.37  0.37 0.37  0.37  0.47 0.47  0.47  0.47 0.47  0.47
Volume/Cap:  0.30 0.30  0.30  0.20 0.20  0.20  1.02 1.02  1.02  0.28 0.28  0.28
Uniform Del: 13.5 13.5  13.5  13.0 13.0  13.0  16.0 16.0  16.0   9.8  9.8   9.8
IncremntDel:  0.3  0.3   0.3   0.2  0.2   0.2  35.7 35.7  35.7   0.1  0.1   0.1
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   13.8 13.8  13.8  13.1 13.1  13.1  51.7 51.7  51.7   9.9  9.9   9.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  13.8 13.8  13.8  13.1 13.1  13.1  51.7 51.7  51.7   9.9  9.9   9.9
LOS by Move:    B    B     B     B    B     B     D    D     D     A    A     A
HCM2kAvgQ:      3    3     3     2    2     2    18   18    18     3    3     3
Note: Queue reported is the number of cars per lane.
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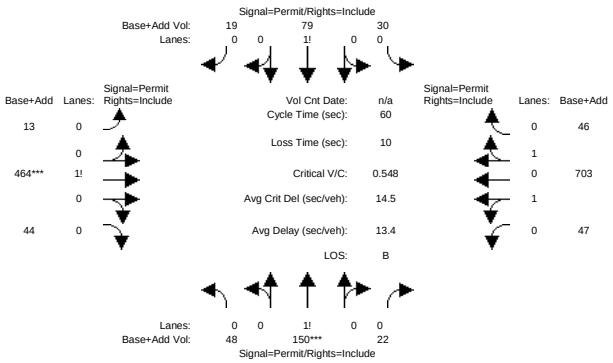
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #38: 16th St/Rhode Island




```
Street Name:         Rhode Island Street              16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    22   22   22    22   22   22    28   28   28    28   28   28
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      48  150   19    27   79   19    13  439   44    24  568   30
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   48  150   19    27   79   19    13  439   44    24  568   30
Added Vol:      0    0    3     3    0    0     0   25    0    23  135   16
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   48  150   22    30   79   19    13  464   44    47  703   46
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91
PHF Volume:    53  165   24    33   87   21    14  510   48    52  773   51
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   53  165   24    33   87   21    14  510   48    52  773   51
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   53  165   24    33   87   21    14  510   48    52  773   51
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.90  0.90  0.88 0.88  0.88  0.96 0.96  0.96  0.84 0.84  0.84
Lanes:       0.22 0.68  0.10  0.23 0.62  0.15  0.02 0.90  0.08  0.12 1.77  0.11
Final Sat.:   372 1162   170   391 1030   248    45 1622   154   189 2828   185
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.14  0.14  0.08 0.08  0.08  0.31 0.31  0.31  0.27 0.27  0.27
Crit Moves:       ****                          ****
Green/Cycle: 0.37 0.37  0.37  0.37 0.37  0.37  0.47 0.47  0.47  0.47 0.47  0.47
Volume/Cap:  0.39 0.39  0.39  0.23 0.23  0.23  0.67 0.67  0.67  0.59 0.59  0.59
Uniform Del: 14.0 14.0  14.0  13.1 13.1  13.1  12.4 12.4  12.4  11.7 11.7  11.7
IncremntDel:  0.4  0.4   0.4   0.2  0.2   0.2   2.1  2.1   2.1   0.6  0.6   0.6
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   14.4 14.4  14.4  13.3 13.3  13.3  14.6 14.6  14.6  12.3 12.3  12.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  14.4 14.4  14.4  13.3 13.3  13.3  14.6 14.6  14.6  12.3 12.3  12.3
LOS by Move:    B    B     B     B    B     B     B    B     B     B    B     B
HCM2kAvgQ:      4    4     4     2    2     2     8    8     8     7    7     7
Note: Queue reported is the number of cars per lane.
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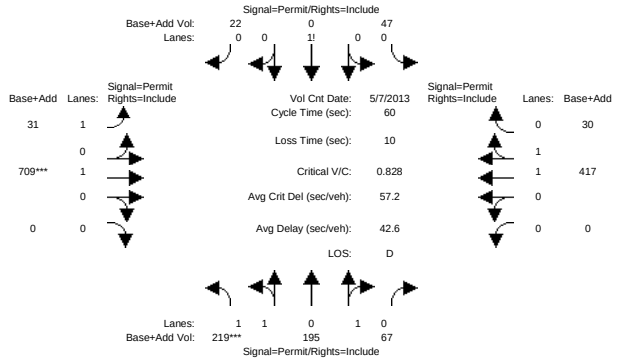
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	219	195	42	26	0	22	31	557	0	0	398	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	219	195	42	26	0	22	31	557	0	0	398	27
Added Vol:	0	0	25	21	0	0	0	152	0	0	19	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	219	195	67	47	0	22	31	709	0	0	417	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	235	210	72	51	0	24	33	762	0	0	448	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	210	72	51	0	24	33	762	0	0	448	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	210	72	51	0	24	33	762	0	0	448	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.60	0.60	0.49	1.00	0.50	0.41	0.75	1.00	1.00	0.75	0.75
Lanes:	1.39	1.20	0.41	0.69	0.00	0.31	1.00	1.00	0.00	0.00	1.87	0.13
Final Sat.:	1543	1374	472	641	0	300	773	1418	0	0	2665	192
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.08	0.00	0.08	0.04	0.54	0.00	0.00	0.17	0.17
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.44	0.44	0.44	0.23	0.00	0.23	0.09	1.11	0.00	0.00	0.35	0.35
Uniform Del:	15.0	15.0	15.0	13.8	0.0	13.8	8.4	15.5	0.0	0.0	9.6	9.6
IncremntDel:	1.2	1.2	1.2	1.6	0.0	1.6	0.5	69.5	0.0	0.0	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	16.1	16.1	16.1	15.3	0.0	15.3	8.8	85.0	0.0	0.0	10.3	10.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.1	16.1	16.1	15.3	0.0	15.3	8.8	85.0	0.0	0.0	10.3	10.3
LOS by Move:	B	B	B	B	A	B	A	F	A	A	B	B
HCM2kAvgQ:	3	3	3	1	0	1	0	23	0	0	3	3

Note: Queue reported is the number of cars per lane.

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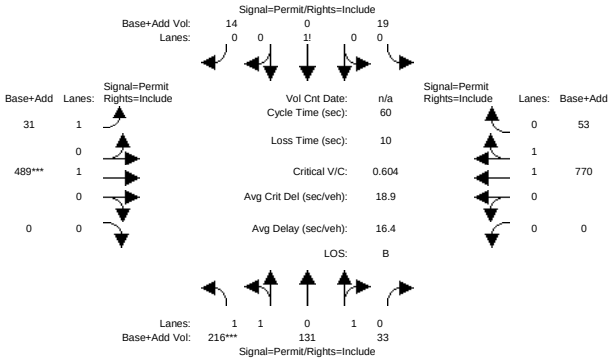
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	216	131	30	16	0	14	31	469	0	0	651	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	131	30	16	0	14	31	469	0	0	651	37
Added Vol:	0	0	3	3	0	0	0	20	0	0	119	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	131	33	19	0	14	31	489	0	0	770	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	237	144	36	21	0	15	34	537	0	0	846	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	144	36	21	0	15	34	537	0	0	846	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	144	36	21	0	15	34	537	0	0	846	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.60	0.60	0.57	1.00	0.58	0.23	0.75	1.00	1.00	0.75	0.75
Lanes:	1.73	1.01	0.26	0.58	0.00	0.42	1.00	1.00	0.00	0.00	1.87	0.13
Final Sat.:	1910	1158	292	624	0	460	428	1418	0	0	2673	184
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.03	0.00	0.03	0.08	0.38	0.00	0.00	0.32	0.32
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.36	0.36	0.36	0.10	0.00	0.10	0.16	0.78	0.00	0.00	0.65	0.65
Uniform Del:	14.5	14.5	14.5	13.1	0.0	13.1	8.7	12.9	0.0	0.0	11.7	11.7
IncremntDel:	0.8	0.8	0.8	0.5	0.0	0.5	1.7	8.7	0.0	0.0	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	13.6	0.0	13.6	10.4	21.6	0.0	0.0	14.2	14.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	13.6	0.0	13.6	10.4	21.6	0.0	0.0	14.2	14.2
LOS by Move:	B	B	B	B	A	B	B	C	A	A	B	B
HCM2kAvgQ:	2	2	2	1	0	1	0	8	0	0	7	7

Note: Queue reported is the number of cars per lane.

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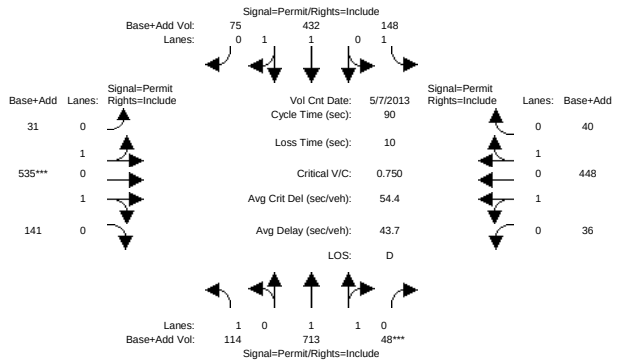
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #40: 16th/Potrero



Street Name: Potrero Ave 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	54	0	54	54	0	54	0	26	0	0	26	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:30am												
Base Vol:	114	713	48	129	432	75	31	403	141	36	431	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	713	48	129	432	75	31	403	141	36	431	37
Added Vol:	0	0	0	19	0	0	0	132	0	0	17	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	713	48	148	432	75	31	535	141	36	448	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	735	49	153	445	77	32	552	145	37	462	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	735	49	153	445	77	32	552	145	37	462	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	735	49	153	445	77	32	552	145	37	462	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.34	0.59	0.72	0.25	0.58	0.70	0.65	0.59	0.64	0.57	0.50	0.57
Lanes:	1.00	1.90	0.10	1.00	1.75	0.25	0.08	1.55	0.37	0.12	1.74	0.14
Final Sat.:	648	2115	142	473	1926	334	100	1729	456	134	1667	149
Capacity Analysis Module:												
Vol/Sat:	0.18	0.35	0.35	0.32	0.23	0.23	0.32	0.32	0.32	0.28	0.28	0.28
Crit Moves:			****					****				
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.30	0.58	0.58	0.54	0.39	0.39	1.10	1.10	1.10	0.96	0.96	0.96
Uniform Del:	8.8	11.0	11.0	10.6	9.4	9.4	32.0	32.0	32.0	31.5	31.5	31.5
IncremntDel:	2.0	1.8	1.8	7.1	0.8	0.8	67.2	67.2	67.2	29.1	29.1	29.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.8	12.8	12.8	17.7	10.2	10.2	99.2	99.2	99.2	60.6	60.6	60.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.8	12.8	12.8	17.7	10.2	10.2	99.2	99.2	99.2	60.6	60.6	60.6
LOS by Move:	B	B	B	B	B	B	F	F	F	E	E	E
HCM2kAvgQ:	2	8	9	3	4	5	21	19	20	11	10	11

Note: Queue reported is the number of cars per lane.

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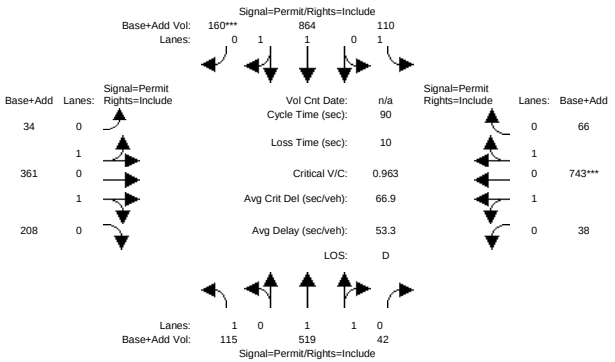
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #40: 16th/Potrero



Street Name: Potrero Ave 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	50	0	50	50	0	50	0	30	0	0	30	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	115	519	42	107	864	160	34	344	208	38	640	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	519	42	107	864	160	34	344	208	38	640	51
Added Vol:	0	0	0	3	0	0	0	17	0	0	103	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	519	42	110	864	160	34	361	208	38	743	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	119	535	43	113	891	165	35	372	214	39	766	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	535	43	113	891	165	35	372	214	39	766	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	535	43	113	891	165	35	372	214	39	766	68
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.16	0.59	0.72	0.31	0.58	0.70	0.55	0.49	0.53	0.65	0.58	0.65
Lanes:	1.00	1.88	0.12	1.00	1.73	0.27	0.10	1.25	0.65	0.08	1.78	0.14
Final Sat.:	312	2089	169	593	1907	353	108	1147	661	101	1970	175
Capacity Analysis Module:												
Vol/Sat:	0.38	0.26	0.26	0.19	0.47	0.47	0.32	0.32	0.32	0.39	0.39	0.39
Crit Moves:						****					****	
Green/Cycle:	0.56	0.56	0.56	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.68	0.46	0.46	0.34	0.84	0.84	0.97	0.97	0.97	1.17	1.17	1.17
Uniform Del:	14.3	11.9	11.9	11.0	16.7	16.7	29.6	29.6	29.6	30.0	30.0	30.0
IncremntDel:	19.8	1.2	1.2	2.8	6.9	6.9	29.7	29.7	29.7	89.2	89.2	89.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.2	13.2	13.2	13.8	23.6	23.6	59.3	59.3	59.3	119.2	119	119.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	13.2	13.2	13.8	23.6	23.6	59.3	59.3	59.3	119.2	119	119.2
LOS by Move:	C	B	B	B	C	C	E	E	E	F	F	F
HCM2kAvgQ:	4	5	6	2	15	18	15	14	15	24	22	24

Note: Queue reported is the number of cars per lane.

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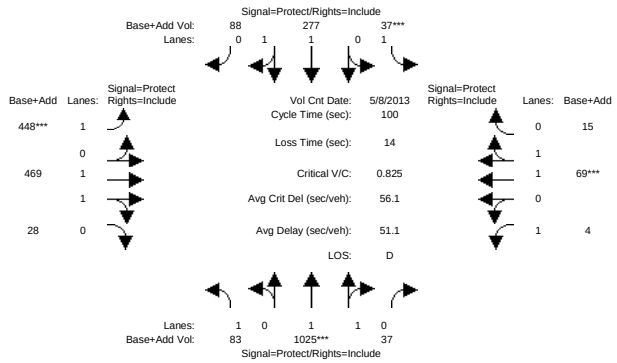
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	39	39	10	25	25	35	18	18	15	8	8
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	44	870	24	11	255	69	401	332	23	3	58	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	870	24	11	255	69	401	332	23	3	58	12
Added Vol:	39	155	13	26	22	19	47	137	5	1	11	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1025	37	37	277	88	448	469	28	4	69	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	86	1059	38	38	286	91	463	485	29	4	71	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	1059	38	38	286	91	463	485	29	4	71	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	1059	38	38	286	91	463	485	29	4	71	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.80	0.81	0.77	0.76	0.81	0.75	0.75	0.81	0.79	0.78
Lanes:	1.00	1.93	0.07	1.00	1.51	0.49	1.00	1.89	0.11	1.00	1.64	0.36
Final Sat.:	1539	2927	106	1539	2220	705	1539	2701	161	1539	2454	533
Capacity Analysis Module:												
Vol/Sat:	0.06	0.36	0.36	0.02	0.13	0.13	0.30	0.18	0.18	0.00	0.03	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.21	0.37	0.37	0.09	0.26	0.26	0.33	0.23	0.23	0.18	0.08	0.08
Volume/Cap:	0.27	0.98	0.98	0.26	0.50	0.50	0.91	0.79	0.79	0.02	0.38	0.38
Uniform Del:	35.4	33.2	33.2	44.6	33.6	33.6	34.0	38.6	38.6	35.8	46.7	46.7
IncremntDel:	2.1	23.2	23.2	4.4	2.4	2.4	22.9	9.5	9.5	0.1	4.9	4.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.5	56.4	56.4	48.9	36.0	36.0	56.9	48.1	48.1	35.9	51.6	51.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.5	56.4	56.4	48.9	36.0	36.0	56.9	48.1	48.1	35.9	51.6	51.6
LOS by Move:	D	E	E	D	D	D	E	D	D	D	D	D
HCM2kAvgQ:	2	25	25	1	6	5	16	9	9	0	2	2

Note: Queue reported is the number of cars per lane.

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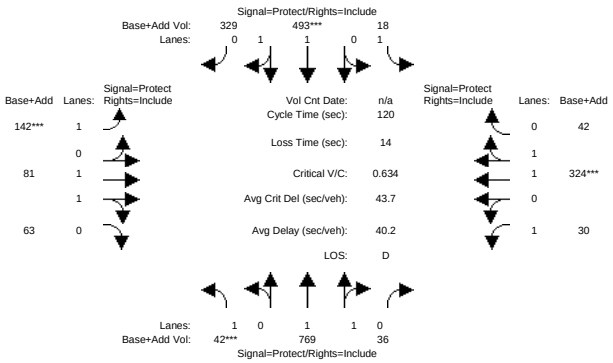
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	48	48	12	46	46	23	23	23	23	23	23
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	38	743	35	16	352	240	131	69	40	19	202	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	743	35	16	352	240	131	69	40	19	202	11
Added Vol:	4	26	1	2	141	89	11	12	23	11	122	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	769	36	18	493	329	142	81	63	30	324	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	44	809	38	19	519	346	149	85	66	32	341	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	809	38	19	519	346	149	85	66	32	341	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	809	38	19	519	346	149	85	66	32	341	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.79	0.81	0.75	0.73	0.81	0.71	0.68	0.81	0.80	0.78
Lanes:	1.00	1.91	0.09	1.00	1.18	0.82	1.00	1.10	0.90	1.00	1.77	0.23
Final Sat.:	1539	2891	135	1539	1692	1129	1539	1485	1155	1539	2671	346
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.01	0.31	0.31	0.10	0.06	0.06	0.02	0.13	0.13
Crit Moves:	****				****		****				****	
Green/Cycle:	0.12	0.40	0.40	0.10	0.38	0.38	0.19	0.19	0.19	0.19	0.19	0.19
Volume/Cap:	0.25	0.70	0.70	0.12	0.80	0.80	0.51	0.30	0.30	0.11	0.67	0.67
Uniform Del:	48.2	30.0	30.0	49.2	32.9	32.9	43.4	41.6	41.6	40.0	44.9	44.9
IncremntDel:	3.2	3.4	3.4	1.6	6.2	6.2	6.1	1.5	1.5	0.7	6.0	6.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.4	33.4	33.4	50.8	39.1	39.1	49.5	43.1	43.1	40.8	50.9	50.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.4	33.4	33.4	50.8	39.1	39.1	49.5	43.1	43.1	40.8	50.9	50.9
LOS by Move:	D	C	C	D	D	D	D	D	D	D	D	D
HCM2kAvgQ:	2	15	14	1	16	15	5	3	2	1	8	8

Note: Queue reported is the number of cars per lane.

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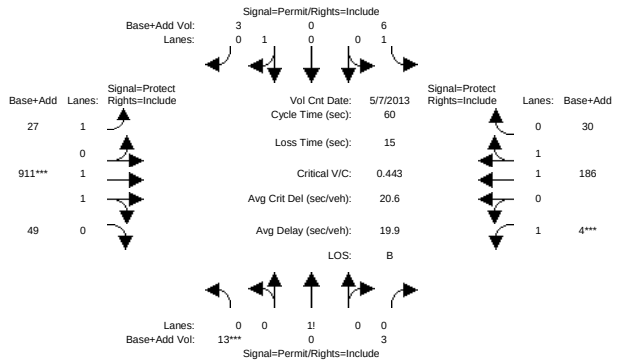
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	13	0	3	0	0	0	0	728	49	4	147	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	0	3	0	0	0	0	728	49	4	147	0
Added Vol:	0	0	0	6	0	3	27	183	0	0	39	30
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	0	3	6	0	3	27	911	49	4	186	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	14	0	3	6	0	3	28	959	52	4	196	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	0	3	6	0	3	28	959	52	4	196	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	0	3	6	0	3	28	959	52	4	196	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	1.00	0.68	0.70	1.00	0.68	0.81	0.75	0.75	0.81	0.74	0.74
Lanes:	0.82	0.00	0.18	1.00	0.00	1.00	1.00	1.90	0.10	1.00	1.72	0.28
Final Sat.:	1021	0	236	1323	0	1295	1539	2717	146	1539	2431	392
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.35	0.35	0.00	0.08	0.08
Crit Moves:	****							****			****	
Green/Cycle:	0.17	0.00	0.17	0.17	0.00	0.17	0.22	0.50	0.50	0.17	0.44	0.44
Volume/Cap:	0.08	0.00	0.08	0.03	0.00	0.01	0.08	0.71	0.71	0.02	0.18	0.18
Uniform Del:	31.7	0.0	31.7	31.4	0.0	31.3	27.7	17.4	17.4	31.3	15.1	15.1
IncremntDel:	0.8	0.0	0.8	0.2	0.0	0.1	0.5	3.0	3.0	0.1	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.4	0.0	32.4	31.6	0.0	31.5	28.2	20.3	20.3	31.5	15.4	15.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.4	0.0	32.4	31.6	0.0	31.5	28.2	20.3	20.3	31.5	15.4	15.4
LOS by Move:	C	A	C	C	A	C	C	C	C	C	B	B
HCM2kAvgQ:	0	0	0	0	0	0	1	12	12	0	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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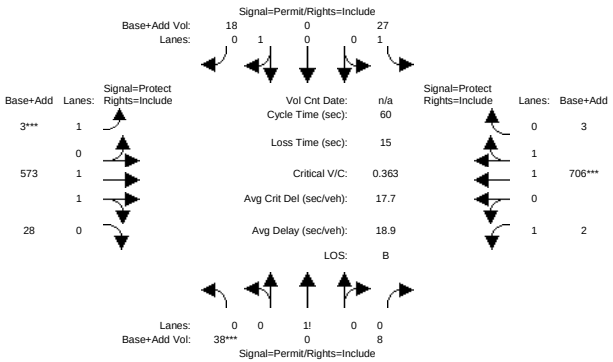
Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	38	0	8	0	0	0	0	555	28	2	494	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	0	8	0	0	0	0	555	28	2	494	0
Added Vol:	0	0	0	27	0	18	3	18	0	0	212	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	0	8	27	0	18	3	573	28	2	706	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	40	0	8	28	0	19	3	603	29	2	743	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	0	8	28	0	19	3	603	29	2	743	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	0	8	28	0	19	3	603	29	2	743	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	1.00	0.63	0.62	1.00	0.68	0.81	0.75	0.75	0.81	0.76	0.76
Lanes:	0.83	0.00	0.17	1.00	0.00	1.00	1.00	1.91	0.09	1.00	1.99	0.01
Final Sat.:	954	0	201	1184	0	1295	1539	2732	134	1539	2871	12
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.04	0.02	0.00	0.01	0.00	0.22	0.22	0.00	0.26	0.26
Crit Moves:	****						****				****	
Green/Cycle:	0.17	0.00	0.17	0.17	0.00	0.17	0.17	0.44	0.44	0.22	0.50	0.50
Volume/Cap:	0.25	0.00	0.25	0.14	0.00	0.09	0.01	0.50	0.50	0.01	0.52	0.52
Uniform Del:	32.6	0.0	32.6	32.0	0.0	31.7	31.3	17.8	17.8	27.3	15.2	15.2
IncremntDel:	3.1	0.0	3.1	1.5	0.0	0.8	0.1	1.4	1.4	0.0	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	35.7	0.0	35.7	33.5	0.0	32.5	31.4	19.2	19.2	27.3	16.5	16.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.7	0.0	35.7	33.5	0.0	32.5	31.4	19.2	19.2	27.3	16.5	16.5
LOS by Move:	D	A	D	C	A	C	C	B	B	C	B	B
HCM2kAvgQ:	1	0	1	1	0	0	0	7	7	0	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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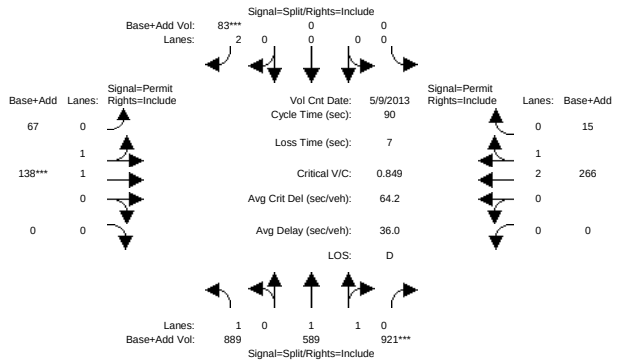
Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	55	55	55	13	13	13	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	889	0	745	0	0	0	0	105	0	0	239	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	889	0	745	0	0	0	0	105	0	0	239	0
Added Vol:	0	589	176	0	0	83	67	33	0	0	27	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	889	589	921	0	0	83	67	138	0	0	266	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	922	611	955	0	0	86	70	143	0	0	276	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	922	611	955	0	0	86	70	143	0	0	276	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	922	611	955	0	0	86	70	143	0	0	276	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.76	1.00	1.00	0.61	0.67	0.71	1.00	1.00	0.89	0.85
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.68	1.32	0.00	0.00	2.83	0.17
Final Sat.:	2018	1458	1436	0	0	2325	861	1774	0	0	4789	270
Capacity Analysis Module:												
Vol/Sat:	0.46	0.42	0.67	0.00	0.00	0.04	0.08	0.08	0.00	0.00	0.06	0.06
Crit Moves:			****			****		****				
Green/Cycle:	0.61	0.61	0.61	0.00	0.00	0.14	0.17	0.17	0.00	0.00	0.17	0.17
Volume/Cap:	0.75	0.69	1.09	0.00	0.00	0.26	0.48	0.48	0.00	0.00	0.35	0.35
Uniform Del:	12.5	11.7	17.5	0.0	0.0	34.2	34.0	34.0	0.0	0.0	33.2	33.2
IncremntDel:	4.2	1.7	51.8	0.0	0.0	1.8	3.8	3.8	0.0	0.0	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	16.7	13.4	69.3	0.0	0.0	36.0	37.8	37.8	0.0	0.0	34.3	34.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.7	13.4	69.3	0.0	0.0	36.0	37.8	37.8	0.0	0.0	34.3	34.3
LOS by Move:	B	B	E	A	A	D	D	D	A	A	C	C
HCM2kAvgQ:	19	13	43	0	0	1	3	3	0	0	3	3

Note: Queue reported is the number of cars per lane.

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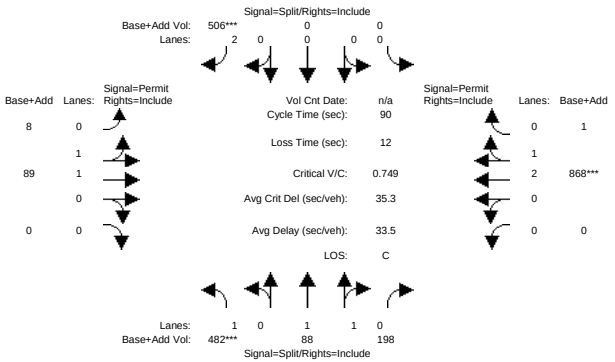
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	29	29	26	26	26	23	23	23	23	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	482	0	180	0	0	0	0	86	0	0	639	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	482	0	180	0	0	0	0	86	0	0	639	0
Added Vol:	0	88	18	0	0	506	8	3	0	0	229	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	482	88	198	0	0	506	8	89	0	0	868	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	502	92	206	0	0	527	8	93	0	0	904	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	502	92	206	0	0	527	8	93	0	0	904	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	502	92	206	0	0	527	8	93	0	0	904	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.76	0.80	1.00	1.00	0.62	0.80	0.83	1.00	1.00	0.90	0.86
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.17	1.83	0.00	0.00	2.99	0.01
Final Sat.:	2018	1437	1514	0	0	2358	260	2889	0	0	5106	6
Capacity Analysis Module:												
Vol/Sat:	0.25	0.06	0.14	0.00	0.00	0.22	0.03	0.03	0.00	0.00	0.18	0.18
Crit Moves:	****					****					****	
Green/Cycle:	0.32	0.32	0.32	0.00	0.00	0.29	0.26	0.26	0.00	0.00	0.26	0.26
Volume/Cap:	0.77	0.20	0.42	0.00	0.00	0.77	0.13	0.13	0.00	0.00	0.69	0.69
Uniform Del:	27.5	22.1	23.9	0.0	0.0	29.3	25.8	25.8	0.0	0.0	30.3	30.3
IncremntDel:	8.6	0.3	1.9	0.0	0.0	8.4	0.3	0.3	0.0	0.0	3.0	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.2	22.4	25.8	0.0	0.0	37.7	26.1	26.1	0.0	0.0	33.3	33.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.2	22.4	25.8	0.0	0.0	37.7	26.1	26.1	0.0	0.0	33.3	33.3
LOS by Move:	D	C	C	A	A	D	C	C	A	A	C	C
HCM2kAvgQ:	14	2	5	0	0	10	1	1	0	0	10	9

Note: Queue reported is the number of cars per lane.

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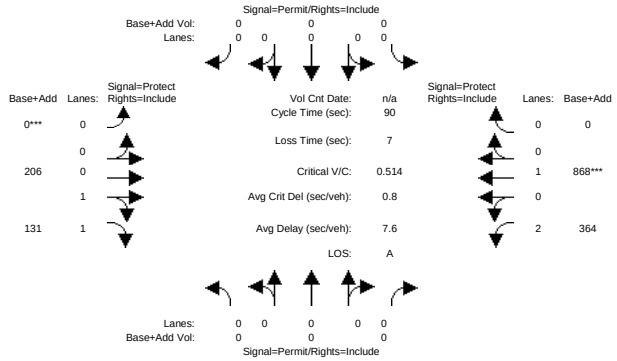
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project AM S2B

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	31	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	106	131	267	855	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	106	131	267	855	0
Added Vol:	0	0	0	0	0	0	0	100	0	97	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	206	131	364	868	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	0	0	0	215	136	379	904	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	215	136	379	904	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	215	136	379	904	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	1790	1790	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.08	0.11	0.48	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.23	0.18	0.51	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.9	22.8	8.8	0.5	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.2	22.9	8.9	0.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.2	22.9	8.9	0.8	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	5	3	3	4	0

Note: Queue reported is the number of cars per lane.

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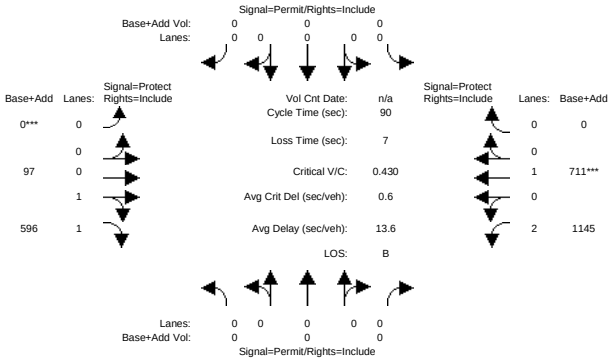
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing Plus Project PM S2B

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	86	596	489	632	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	86	596	489	632	0
Added Vol:	0	0	0	0	0	0	0	11	0	656	79	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	97	596	1145	711	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	103	634	1218	756	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	103	634	1218	756	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	103	634	1218	756	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	1.72	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	463	2847	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.35	0.40	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.59	0.43	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.1	27.1	12.1	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.4	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.7	28.7	12.5	0.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.7	28.7	12.5	0.6	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	10	10	11	3	0

Note: Queue reported is the number of cars per lane.

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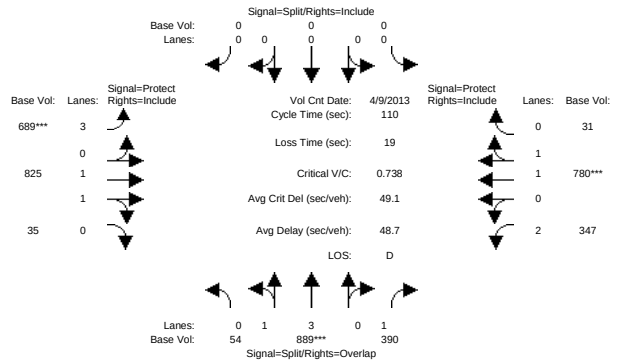
Year 2015 (Mission Bay Only)

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module: >> Count Date: 9 Apr 2013 << 7:00-8:45am												
Base Vol:	54	889	390	0	0	0	689	825	35	347	780	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	889	390	0	0	0	689	825	35	347	780	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	57	936	411	0	0	0	725	868	37	365	821	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	936	411	0	0	0	725	868	37	365	821	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	936	411	0	0	0	725	868	37	365	821	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.80	0.79	0.81	0.80
Lanes:	0.23	3.77	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	336	5527	1344	0	0	0	4480	2935	125	2987	2943	117
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.31	0.00	0.00	0.00	0.16	0.30	0.30	0.12	0.28	0.28
Crit Moves:		****					****				****	
Green/Cycle:	0.35	0.35	0.48	0.00	0.00	0.00	0.16	0.35	0.35	0.13	0.31	0.31
Volume/Cap:	0.48	0.48	0.64	0.00	0.00	0.00	0.99	0.85	0.85	0.97	0.90	0.90
Uniform Del:	27.6	27.6	21.4	0.0	0.0	0.0	45.9	33.3	33.3	47.9	36.4	36.4
IncremntDel:	0.8	0.8	4.7	0.0	0.0	0.0	30.8	8.7	8.7	39.5	13.5	13.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.4	28.4	26.1	0.0	0.0	0.0	76.7	42.1	42.1	87.3	49.9	49.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.4	28.4	26.1	0.0	0.0	0.0	76.7	42.1	42.1	87.3	49.9	49.9
LOS by Move:	C	C	C	A	A	A	E	D	D	F	D	D
HCM2kAvgQ:	7	7	10	0	0	0	9	14	14	10	18	18

Note: Queue reported is the number of cars per lane.

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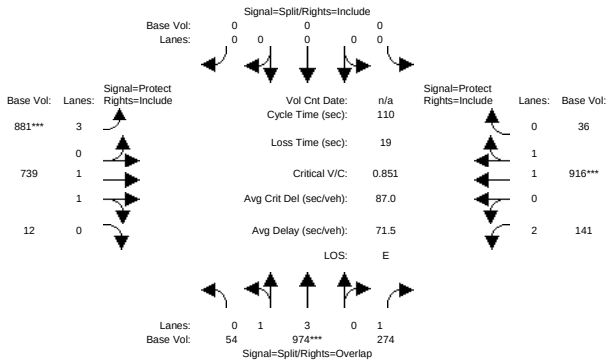
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	54	974	274	0	0	0	881	739	12	141	916	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	974	274	0	0	0	881	739	12	141	916	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	56	1004	282	0	0	0	908	762	12	145	944	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	1004	282	0	0	0	908	762	12	145	944	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	1004	282	0	0	0	908	762	12	145	944	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.81	0.79	0.81	0.80
Lanes:	0.21	3.79	1.00	0.00	0.00	0.00	3.00	1.97	0.03	2.00	1.92	0.08
Final Sat.:	308	5555	1352	0	0	0	4480	3024	49	2987	2944	116
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.21	0.00	0.00	0.00	0.20	0.25	0.25	0.05	0.32	0.32
Crit Moves:		****					****				****	
Green/Cycle:	0.35	0.35	0.48	0.00	0.00	0.00	0.16	0.35	0.35	0.12	0.31	0.31
Volume/Cap:	0.51	0.51	0.44	0.00	0.00	0.00	1.24	0.72	0.72	0.40	1.04	1.04
Uniform Del:	28.0	28.0	19.0	0.0	0.0	0.0	46.0	31.1	31.1	44.5	38.0	38.0
IncremntDel:	0.9	0.9	2.2	0.0	0.0	0.0	119.0	4.2	4.2	3.2	39.5	39.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.9	28.9	21.1	0.0	0.0	0.0	165.0	35.3	35.3	47.7	77.5	77.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.9	28.9	21.1	0.0	0.0	0.0	165.0	35.3	35.3	47.7	77.5	77.5
LOS by Move:	C	C	C	A	A	A	F	D	D	D	E	E
HCM2kAvgQ:	8	8	6	0	0	0	17	11	11	3	25	25

Note: Queue reported is the number of cars per lane.

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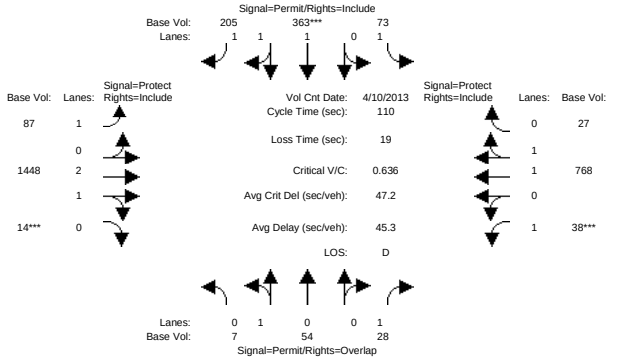
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #25: King/4th




```
Street Name:            4th Street                    King Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    36   36   36    36   36   36    19   40   40    15   36   36
Y+R:          6.0  6.0  6.0   6.0  6.0  6.0   7.0  7.0  7.0   7.0  7.0  7.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 10 Apr 2013 << 7:00-8:45am
Base Vol:      7   54   28    73  363  205    87 1448   14    38  768   27
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   7   54   28    73  363  205    87 1448   14    38  768   27
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.70  1.00 1.00 1.00
PHF Adj:     0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93
PHF Volume:    8   58   30    78  390  220    94 1557   11    41  826   29
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   8   58   30    78  390  220    94 1557   11    41  826   29
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   8   58   30    78  390  220    94 1557   11    41  826   29
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.81 0.69  0.58 0.77 0.75  0.81 0.77 0.78  0.81 0.80 0.80
Lanes:       0.12 0.88 1.00  1.00 1.90 1.10  1.00 2.98 0.02  1.00 1.93 0.07
Final Sat.:   177 1362 1314  1107 2764 1561  1539 4346   29  1539 2931  103
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.04 0.02  0.07 0.14 0.14  0.06 0.36 0.36  0.03 0.28 0.28
Crit Moves:                      ****                    ****  ****
Green/Cycle: 0.33 0.33 0.46  0.33 0.33 0.33  0.17 0.36 0.36  0.14 0.33 0.33
Volume/Cap:  0.13 0.13 0.05  0.22 0.43 0.43  0.35 0.99 0.99  0.19 0.86 0.86
Uniform Del: 26.0 26.0 16.2  26.8 29.0 29.0  40.1 34.7 34.7  42.1 34.7 34.7
IncremntDel:  0.5  0.5  0.2   1.4  1.0  1.0   3.6 19.3 19.3   2.1  9.7  9.7
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   26.5 26.5 16.3  28.2 29.9 29.9  43.7 54.0 54.0  44.2 44.4 44.4
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  26.5 26.5 16.3  28.2 29.9 29.9  43.7 54.0 54.0  44.2 44.4 44.4
LOS by Move:    C    C    B     C    C    C     D    D    D     D    D    D
HCM2kAvgQ:      2    2    1     2    6    6     3   25   26     1   14   14
Note: Queue reported is the number of cars per lane.
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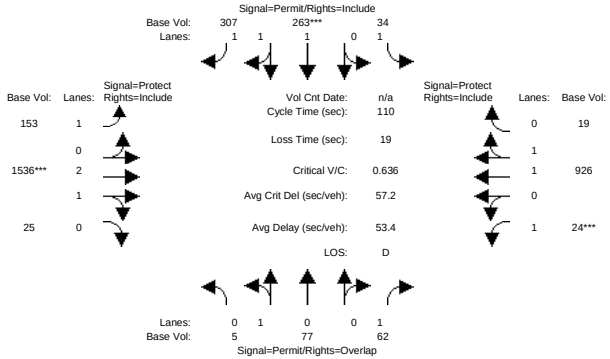
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #25: King/4th




```
Street Name:            4th Street                    King Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    38   38   38    38   38   38    15   38   38    15   38   38
Y+R:          6.0  6.0  6.0   6.0  6.0  6.0   7.0  7.0  7.0   7.0  7.0  7.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      5   77   62    34  263  307   153 1536   25    24  926   19
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   5   77   62    34  263  307   153 1536   25    24  926   19
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:    5   79   64    35  271  316   158 1584   26    25  955   20
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   5   79   64    35  271  316   158 1584   26    25  955   20
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   5   79   64    35  271  316   158 1584   26    25  955   20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.83 0.84 0.59  0.50 0.74 0.62  0.81 0.79 0.77  0.81 0.81 0.80
Lanes:       0.06 0.94 1.00  1.00 1.25 1.75  1.00 2.95 0.05  1.00 1.96 0.04
Final Sat.:    97 1494 1120   957 1767 2062  1539 4438   72  1539 3008   62
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.05 0.06  0.04 0.15 0.15  0.10 0.36 0.36  0.02 0.32 0.32
Crit Moves:                      ****                    ****  ****
Green/Cycle: 0.35 0.35 0.48  0.35 0.35 0.35  0.14 0.35 0.35  0.14 0.35 0.35
Volume/Cap:  0.15 0.15 0.12  0.11 0.44 0.44  0.75 1.03 1.03  0.12 0.92 0.92
Uniform Del: 24.9 24.9 15.7  24.5 27.8 27.8  45.7 36.0 36.0  41.7 34.5 34.5
IncremntDel:  0.6  0.6  0.4   0.6  1.1  1.1  21.7 31.7 31.7   1.1 13.9 13.9
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   25.5 25.5 16.1  25.1 28.9 28.9  67.4 67.7 67.7  42.8 48.4 48.4
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  25.5 25.5 16.1  25.1 28.9 28.9  67.4 67.7 67.7  42.8 48.4 48.4
LOS by Move:    C    C    B     C    C    C     E    E    E     D    D    D
HCM2kAvgQ:      2    2    1     1    6    5     7   28   27     1   16   16
Note: Queue reported is the number of cars per lane.
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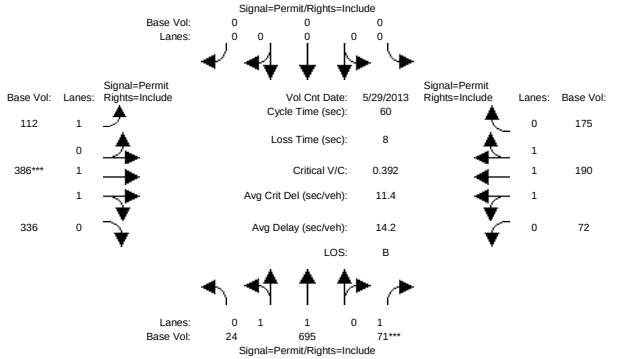
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	21	0	21	0	0	31	31	0	31	31
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am												
Base Vol:	24	695	71	0	0	0	112	386	336	72	190	175
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	695	71	0	0	0	112	386	336	72	190	175
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	752	77	0	0	0	121	418	364	78	206	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	752	77	0	0	0	121	418	364	78	206	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	752	77	0	0	0	121	418	364	78	206	189
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.40	0.75	0.74	0.54	0.54	0.54
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.06	0.94	0.55	1.45	1.00
Final Sat.:	102	2964	1201	0	0	0	761	1515	1318	568	1498	1022
Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.06	0.00	0.00	0.00	0.16	0.28	0.28	0.14	0.14	0.19
Crit Moves:			****					****				
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.73	0.73	0.18	0.00	0.00	0.00	0.31	0.53	0.53	0.27	0.27	0.36
Uniform Del:	17.0	17.0	13.5	0.0	0.0	0.0	8.3	9.7	9.7	8.1	8.1	8.6
IncremntDel:	4.3	4.3	1.0	0.0	0.0	0.0	2.0	1.4	1.4	0.4	0.4	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	21.3	21.3	14.5	0.0	0.0	0.0	10.4	11.1	11.1	8.5	8.5	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.3	21.3	14.5	0.0	0.0	0.0	10.4	11.1	11.1	8.5	8.5	9.4
LOS by Move:	C	C	B	A	A	A	B	B	B	A	A	A
HCM2kAvgQ:	8	8	1	0	0	0	2	6	6	2	2	3

Note: Queue reported is the number of cars per lane.

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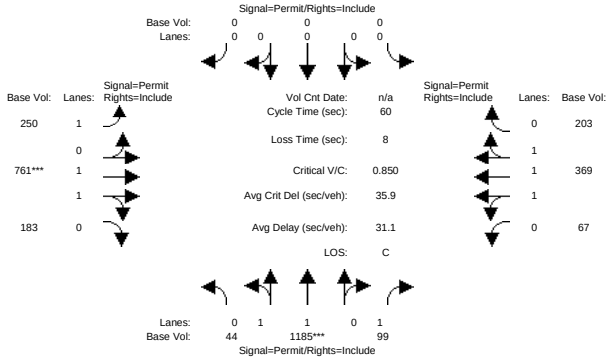
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	44	1185	99	0	0	0	250	761	183	67	369	203
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	1185	99	0	0	0	250	761	183	67	369	203
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	45	1217	102	0	0	0	257	781	188	69	379	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	1217	102	0	0	0	257	781	188	69	379	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	1217	102	0	0	0	257	781	188	69	379	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.33	0.79	0.78	0.55	0.55	0.54
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.61	0.39	0.31	1.73	0.96
Final Sat.:	110	2954	1202	0	0	0	618	2405	578	327	1802	992
Capacity Analysis Module:												
Vol/Sat:	0.41	0.41	0.08	0.00	0.00	0.00	0.42	0.32	0.32	0.21	0.21	0.21
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.00	0.00	0.00	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	1.03	1.03	0.21	0.00	0.00	0.00	0.89	0.70	0.70	0.45	0.45	0.45
Uniform Del:	18.0	18.0	11.8	0.0	0.0	0.0	14.6	12.6	12.6	10.8	10.8	10.8
IncremntDel:	33.6	33.6	1.0	0.0	0.0	0.0	31.2	2.9	2.9	1.0	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.6	51.6	12.8	0.0	0.0	0.0	45.8	15.5	15.5	11.8	11.8	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.6	51.6	12.8	0.0	0.0	0.0	45.8	15.5	15.5	11.8	11.8	11.8
LOS by Move:	D	D	B	A	A	A	D	B	B	B	B	B
HCM2kAvgQ:	21	21	1	0	0	0	8	9	9	4	4	3

Note: Queue reported is the number of cars per lane.

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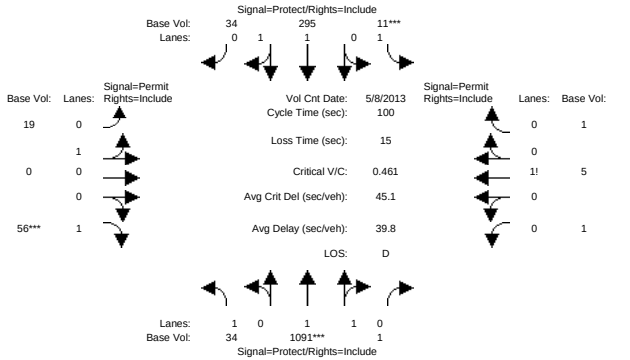
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	15	36	36	17	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	34	1091	1	11	295	34	19	0	56	1	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	1091	1	11	295	34	19	0	56	1	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	36	1148	1	12	311	36	20	0	59	1	5	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1148	1	12	311	36	20	0	59	1	5	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	1148	1	12	311	36	20	0	59	1	5	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.79	0.67	1.00	0.69	0.82	0.82	0.82
Lanes:	1.00	1.99	0.01	1.00	1.79	0.21	1.00	0.00	1.00	0.14	0.72	0.14
Final Sat.:	1539	3383	3	1539	2717	313	1278	0	1313	223	1117	223
Capacity Analysis Module:												
Vol/Sat:	0.02	0.34	0.34	0.01	0.11	0.11	0.02	0.00	0.04	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.15	0.36	0.36	0.17	0.38	0.38	0.32	0.00	0.32	0.32	0.32	0.32
Volume/Cap:	0.15	0.94	0.94	0.04	0.30	0.30	0.05	0.00	0.14	0.01	0.01	0.01
Uniform Del:	37.0	31.0	31.0	34.7	21.7	21.7	23.5	0.0	24.2	23.2	23.2	23.2
IncremntDel:	1.4	15.3	15.3	0.3	0.7	0.7	0.2	0.0	0.7	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	46.3	46.3	35.0	22.4	22.4	23.7	0.0	24.9	23.3	23.3	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	46.3	46.3	35.0	22.4	22.4	23.7	0.0	24.9	23.3	23.3	23.3
LOS by Move:	D	D	D	D	C	C	C	A	C	C	C	C
HCM2kAvgQ:	1	19	17	0	4	4	0	0	1	0	0	0

Note: Queue reported is the number of cars per lane.

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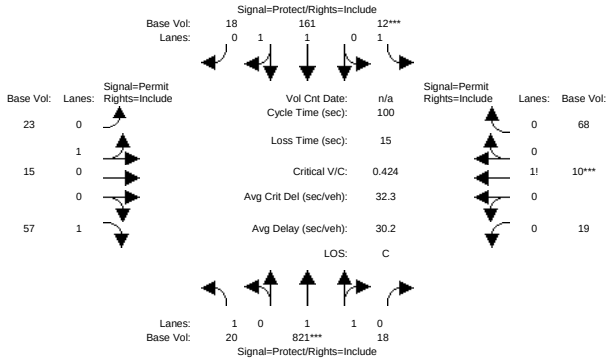
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	15	36	36	17	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	821	18	12	161	18	23	15	57	19	10	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	821	18	12	161	18	23	15	57	19	10	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	864	19	13	169	19	24	16	60	20	11	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	864	19	13	169	19	24	16	60	20	11	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	864	19	13	169	19	24	16	60	20	11	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.80	0.79	0.68	0.71	0.65	0.72	0.73	0.68
Lanes:	1.00	1.95	0.05	1.00	1.80	0.20	0.62	0.38	1.00	0.19	0.10	0.71
Final Sat.:	1539	3150	69	1539	2723	304	798	520	1226	257	135	919
Capacity Analysis Module:												
Vol/Sat:	0.01	0.27	0.27	0.01	0.06	0.06	0.03	0.03	0.05	0.08	0.08	0.08
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.36	0.36	0.17	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.09	0.76	0.76	0.05	0.16	0.16	0.09	0.09	0.15	0.24	0.24	0.24
Uniform Del:	36.6	28.2	28.2	34.7	20.5	20.5	23.8	23.8	24.3	25.1	25.1	25.1
IncremntDel:	0.8	4.8	4.8	0.3	0.3	0.3	0.4	0.4	0.8	1.4	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.4	33.0	33.0	35.1	20.8	20.8	24.3	24.3	25.1	26.4	26.4	26.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	33.0	33.0	35.1	20.8	20.8	24.3	24.3	25.1	26.4	26.4	26.4
LOS by Move:	D	C	C	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	13	12	0	2	2	1	1	1	3	3	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
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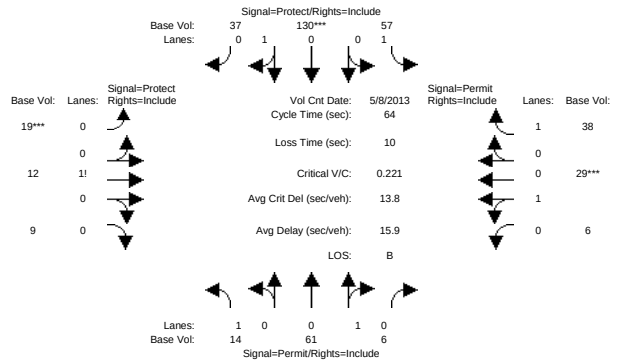
Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	21	21	9	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	14	61	6	57	130	37	19	12	9	6	29	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	61	6	57	130	37	19	12	9	6	29	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	16	72	7	67	153	44	22	14	11	7	34	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	72	7	67	153	44	22	14	11	7	34	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	72	7	67	153	44	22	14	11	7	34	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.50	0.67	0.67	0.81	0.82	0.82	0.71	0.71	0.69	0.83	0.84	0.68
Lanes:	1.00	0.91	0.09	1.00	0.78	0.22	0.47	0.30	0.23	0.17	0.83	1.00
Final Sat.:	947	1164	115	1539	1217	346	636	401	301	274	1323	1297
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.06	0.04	0.13	0.13	0.04	0.04	0.04	0.03	0.03	0.03
Crit Moves:					****		****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.05	0.19	0.19	0.20	0.23	0.23	0.25	0.12	0.12	0.17	0.17	0.22
Uniform Del:	14.7	15.4	15.4	20.4	7.5	7.5	24.5	16.4	16.4	23.4	23.4	23.6
IncremntDel:	0.3	1.0	1.0	1.3	0.6	0.6	3.2	0.6	0.6	1.4	1.4	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.0	16.4	16.4	21.7	8.1	8.1	27.7	17.0	17.0	24.8	24.8	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.0	16.4	16.4	21.7	8.1	8.1	27.7	17.0	17.0	24.8	24.8	26.1
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	1	1	1	2	2	1	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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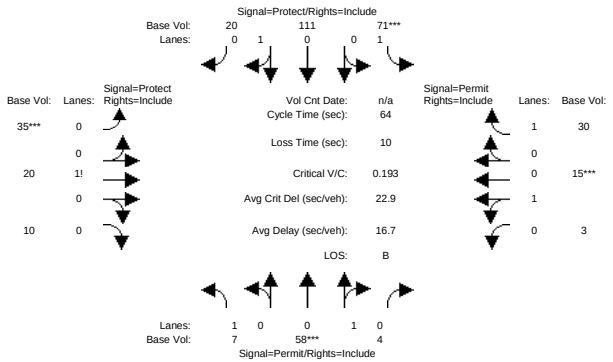
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	21	21	14	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	7	58	4	71	111	20	35	20	10	3	15	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	58	4	71	111	20	35	20	10	3	15	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	7	61	4	75	117	21	37	21	11	3	16	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	61	4	75	117	21	37	21	11	3	16	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	61	4	75	117	21	37	21	11	3	16	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.42	0.68	0.66	0.81	0.83	0.81	0.71	0.71	0.67	0.80	0.85	0.65
Lanes:	1.00	0.93	0.07	1.00	0.84	0.16	0.54	0.30	0.16	0.17	0.83	1.00
Final Sat.:	805	1199	83	1539	1335	241	722	412	206	265	1327	1236
Capacity Analysis Module:												
Vol/Sat:	0.01	0.05	0.05	0.05	0.09	0.09	0.05	0.05	0.05	0.01	0.01	0.03
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.03	0.16	0.16	0.22	0.16	0.16	0.36	0.17	0.17	0.08	0.08	0.16
Uniform Del:	14.6	15.2	15.2	20.5	7.2	7.2	24.9	16.7	16.7	23.1	23.1	23.4
IncremntDel:	0.2	0.8	0.8	1.5	0.4	0.4	5.3	0.9	0.9	0.6	0.6	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.8	16.0	16.0	22.0	7.6	7.6	30.3	17.6	17.6	23.6	23.6	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	16.0	16.0	22.0	7.6	7.6	30.3	17.6	17.6	23.6	23.6	25.2
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	1	1	1	1	1	1	0	0	0	0	1

Note: Queue reported is the number of cars per lane.

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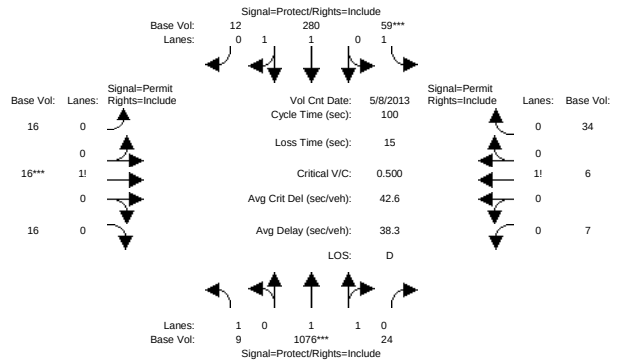
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	9	1076	24	59	280	12	16	16	16	7	6	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	1076	24	59	280	12	16	16	16	7	6	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	1133	25	62	295	13	17	17	17	7	6	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1133	25	62	295	13	17	17	17	7	6	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1133	25	62	295	13	17	17	17	7	6	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.81	0.80	0.65	0.66	0.65	0.74	0.75	0.72
Lanes:	1.00	1.95	0.05	1.00	1.92	0.08	0.33	0.33	0.34	0.15	0.12	0.73
Final Sat.:	1539	3296	74	1539	2934	126	413	413	413	206	177	1002
Capacity Analysis Module:												
Vol/Sat:	0.01	0.34	0.34	0.04	0.10	0.10	0.04	0.04	0.04	0.04	0.04	0.04
Crit Moves:		****		****				****				
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.04	0.93	0.93	0.27	0.27	0.27	0.12	0.12	0.12	0.11	0.11	0.11
Uniform Del:	36.3	30.2	30.2	37.6	22.1	22.1	23.4	23.4	23.4	23.3	23.3	23.3
IncremntDel:	0.3	13.3	13.3	2.8	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.7	43.5	43.5	40.5	22.7	22.7	24.0	24.0	24.0	23.8	23.8	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	43.5	43.5	40.5	22.7	22.7	24.0	24.0	24.0	23.8	23.8	23.8
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	23	21	2	3	3	1	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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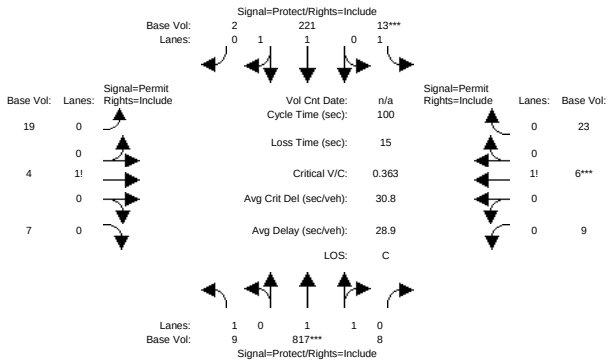
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	9	817	8	13	221	2	19	4	7	9	6	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	817	8	13	221	2	19	4	7	9	6	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	860	8	14	233	2	20	4	7	9	6	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	860	8	14	233	2	20	4	7	9	6	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	860	8	14	233	2	20	4	7	9	6	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.81	0.56	0.63	0.60	0.72	0.75	0.66
Lanes:	1.00	1.98	0.02	1.00	1.98	0.02	0.66	0.12	0.22	0.23	0.14	0.63
Final Sat.:	1539	3197	31	1539	3048	28	692	146	255	309	206	789
Capacity Analysis Module:												
Vol/Sat:	0.01	0.27	0.27	0.01	0.08	0.08	0.03	0.03	0.03	0.03	0.03	0.03
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.04	0.73	0.73	0.06	0.21	0.21	0.09	0.09	0.09	0.09	0.09	0.09
Uniform Del:	36.3	27.1	27.1	36.4	21.5	21.5	23.1	23.1	23.1	23.2	23.2	23.2
IncremntDel:	0.3	3.9	3.9	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.7	31.0	31.0	36.9	21.9	21.9	23.6	23.6	23.6	23.6	23.6	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	31.0	31.0	36.9	21.9	21.9	23.6	23.6	23.6	23.6	23.6	23.6
LOS by Move:	D	C	C	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	13	13	0	3	3	1	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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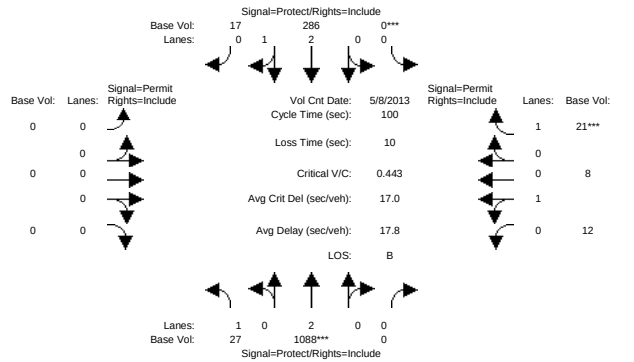
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	27	1088	0	0	286	17	0	0	0	12	8	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	1088	0	0	286	17	0	0	0	12	8	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	29	1169	0	0	307	18	0	0	0	13	9	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	1169	0	0	307	18	0	0	0	13	9	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	29	1169	0	0	307	18	0	0	0	13	9	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.79	0.82	0.62
Lanes:	1.00	2.00	0.00	0.00	2.83	0.17	0.00	0.00	0.00	0.61	0.39	1.00
Final Sat.:	1539	3079	0	0	4142	246	0	0	0	914	609	1177
Capacity Analysis Module:												
Vol/Sat:	0.02	0.38	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.01	0.01	0.02
Crit Moves:		****		****								****
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.12	0.67	0.00	0.00	0.18	0.18	0.00	0.00	0.00	0.04	0.04	0.06
Uniform Del:	36.5	14.9	0.0	0.0	18.4	18.4	0.0	0.0	0.0	22.8	22.8	22.9
IncremntDel:	1.1	2.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.2	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	37.6	16.9	0.0	0.0	18.6	18.6	0.0	0.0	0.0	22.9	22.9	23.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.6	16.9	0.0	0.0	18.6	18.6	0.0	0.0	0.0	22.9	22.9	23.2
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	13	0	0	2	2	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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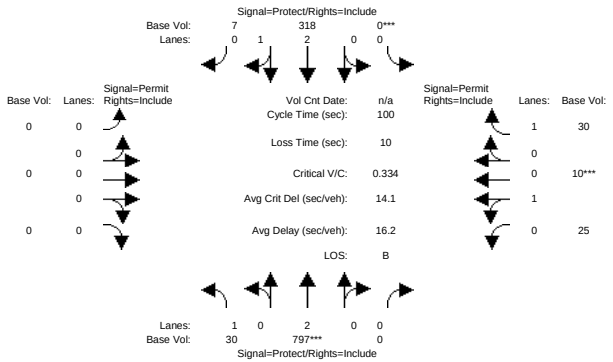
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	30	797	0	0	318	7	0	0	0	25	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	797	0	0	318	7	0	0	0	25	10	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	32	848	0	0	338	7	0	0	0	27	11	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	848	0	0	338	7	0	0	0	27	11	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	848	0	0	338	7	0	0	0	27	11	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.75	0.80	0.60
Lanes:	1.00	2.00	0.00	0.00	2.94	0.06	0.00	0.00	0.00	0.73	0.27	1.00
Final Sat.:	1539	3079	0	0	4315	95	0	0	0	1039	416	1147
Capacity Analysis Module:												
Vol/Sat:	0.02	0.28	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.03	0.03	0.03
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.14	0.48	0.00	0.00	0.19	0.19	0.00	0.00	0.00	0.08	0.08	0.08
Uniform Del:	36.6	12.8	0.0	0.0	18.5	18.5	0.0	0.0	0.0	23.0	23.0	23.1
IncremntDel:	1.2	1.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	37.8	13.7	0.0	0.0	18.7	18.7	0.0	0.0	0.0	23.3	23.3	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.8	13.7	0.0	0.0	18.7	18.7	0.0	0.0	0.0	23.3	23.3	23.5
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	8	0	0	2	2	0	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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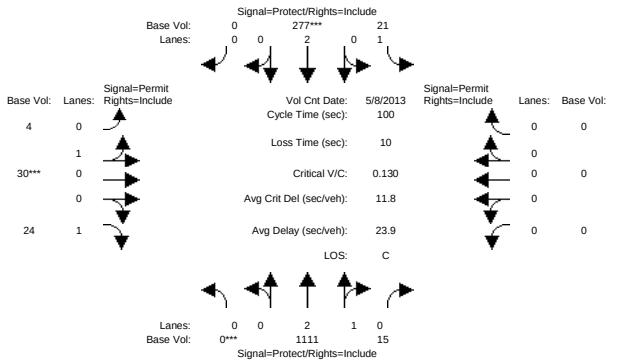
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	0	1111	15	21	277	0	4	30	24	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1111	15	21	277	0	4	30	24	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1167	16	22	291	0	4	32	25	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1167	16	22	291	0	4	32	25	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1167	16	22	291	0	4	32	25	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.84	0.84	0.62	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.12	0.88	1.00	0.00	0.00	0.00
Final Sat.:	0	4356	59	1539	3079	0	189	1415	1183	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.01	0.09	0.00	0.02	0.02	0.02	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.68	0.68	0.08	0.17	0.00	0.07	0.07	0.06	0.00	0.00	0.00
Uniform Del:	0.0	25.0	25.0	34.6	10.2	0.0	23.0	23.0	22.9	0.0	0.0	0.0
IncremntDel:	0.0	2.1	2.1	0.6	0.2	0.0	0.2	0.2	0.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	27.1	27.1	35.2	10.4	0.0	23.2	23.2	23.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	27.1	35.2	10.4	0.0	23.2	23.2	23.3	0.0	0.0	0.0
LOS by Move:	A	C	C	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	12	12	1	2	0	1	1	1	0	0	0

Note: Queue reported is the number of cars per lane.

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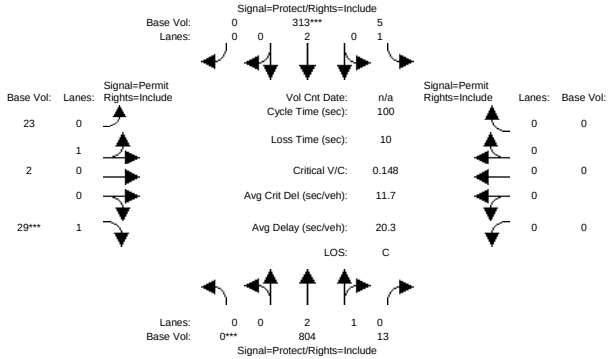
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	804	13	5	313	0	23	2	29	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	804	13	5	313	0	23	2	29	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	846	14	5	329	0	24	2	31	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	846	14	5	329	0	24	2	31	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	846	14	5	329	0	24	2	31	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.76	0.80	0.62	1.00	1.00	1.00
Lanes:	0.00	2.95	0.05	1.00	2.00	0.00	0.92	0.08	1.00	0.00	0.00	0.00
Final Sat.:	0	4345	70	1539	3079	0	1342	117	1176	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.19	0.00	0.11	0.00	0.02	0.02	0.03	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.49	0.49	0.02	0.19	0.00	0.05	0.05	0.08	0.00	0.00	0.00
Uniform Del:	0.0	22.7	22.7	34.2	10.4	0.0	22.9	22.9	23.0	0.0	0.0	0.0
IncremntDel:	0.0	1.0	1.0	0.1	0.2	0.0	0.2	0.2	0.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	23.7	23.7	34.3	10.6	0.0	23.1	23.1	23.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	23.7	23.7	34.3	10.6	0.0	23.1	23.1	23.4	0.0	0.0	0.0
LOS by Move:	A	C	C	C	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	8	8	0	3	0	1	1	1	0	0	0

Note: Queue reported is the number of cars per lane.

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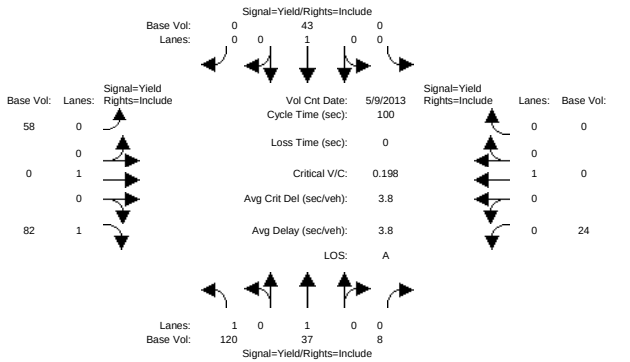
Level Of Service Computation Report
FHWA Roundabout (Base Volume Alternative)
2015 AM

Intersection #32: Mission Bay/Owens

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Street Name:          Owens Street                    Mission Bay
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:     120   37    8     0   43    0    58    0   82    24    0    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  120   37    8     0   43    0    58    0   82    24    0    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.72 0.72 0.72  0.72 0.72 0.72  0.72 0.72 0.72  0.72 0.72 0.72
PHF Volume:   167   51   11     0   60    0   81    0  114    33    0    0
Reduct Vol:     0    0    0     0    0    0    0    0    0     0    0    0
Reduced Vol:  167   51   11     0   60    0   81    0  114    33    0    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  167   51   11     0   60    0   81    0  114    33    0    0
------------|---------------||---------------||---------------||---------------|
PCE Module:
AutoPCE:      167   51   11     0   60    0   81    0  114    33    0    0
TruckPCE:       0    0    0     0    0    0    0    0    0     0    0    0
ComboPCE:       0    0    0     0    0    0    0    0    0     0    0    0
BicyclePCE:     0    0    0     0    0    0    0    0    0     0    0    0
AdjVolume:    167   51   11     0   60    0   81    0  114    33    0    0
------------|---------------||---------------||---------------||---------------|
Delay Module: >> Time Period: 0.25 hours <<
CircVolume:          81             200              93             299
MaxVolume:         1156            1092            1150            1039
PedVolume:            0               0               0               0
AdjMaxVol:         1156            1092            1150            1039
ApproachVol:        229              60             194              33
ApproachV/C:       0.20            0.05            0.17            0.03
ApproachDel:        3.9             3.5             3.8             3.6
ApproachLOS:          A               A               A               A
Queue:              0.7             0.2             0.6             0.1
```


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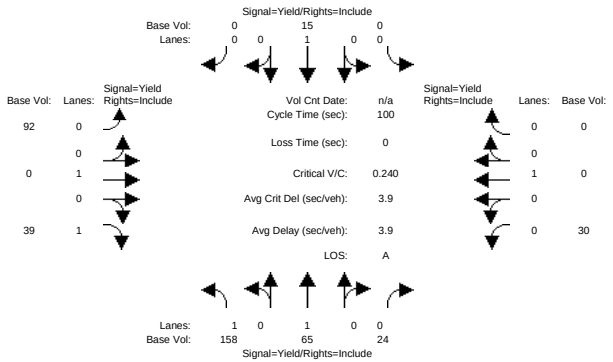
Level Of Service Computation Report
FHWA Roundabout (Base Volume Alternative)
2015 PM

Intersection #32: Mission Bay/Owens




```
Street Name:          Owens Street                    Mission Bay
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     158   65   24     0   15    0    92    0   39    30    0    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  158   65   24     0   15    0    92    0   39    30    0    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90
PHF Volume:   176   72   27     0   17    0  102    0   43    33    0    0
Reduct Vol:     0    0    0     0    0    0    0    0    0     0    0    0
Reduced Vol:  176   72   27     0   17    0  102    0   43    33    0    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  176   72   27     0   17    0  102    0   43    33    0    0
------------|---------------||---------------||---------------||---------------|
PCE Module:
AutoPCE:      176   72   27     0   17    0  102    0   43    33    0    0
TruckPCE:       0    0    0     0    0    0    0    0    0     0    0    0
ComboPCE:       0    0    0     0    0    0    0    0    0     0    0    0
BicyclePCE:     0    0    0     0    0    0    0    0    0     0    0    0
AdjVolume:    176   72   27     0   17    0  102    0   43    33    0    0
------------|---------------||---------------||---------------||---------------|
Delay Module: >> Time Period: 0.25 hours <<
CircVolume:         102             209              50             350
MaxVolume:         1145            1087            1173            1011
PedVolume:            0               0               0               0
AdjMaxVol:         1145            1087            1173            1011
ApproachVol:        274              17             146              33
ApproachV/C:       0.24            0.02            0.12            0.03
ApproachDel:        4.1             3.4             3.5             3.7
ApproachLOS:          A               A               A               A
Queue:              0.9             0.0             0.4             0.1
```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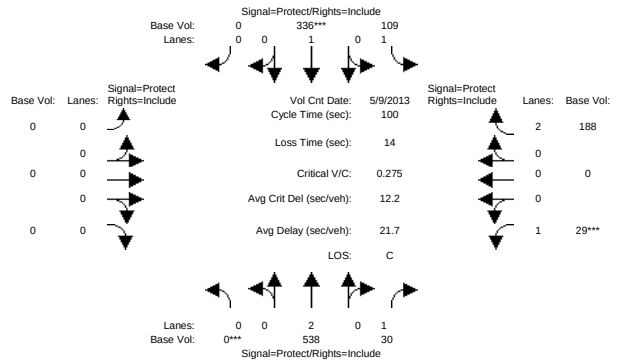
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #33: Mission Bay/7th




```
Street Name:            7th Street                    Mission Bay
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   36   36    14   61    0     0    0    0     25    0   25
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:       0  538   30   109  336    0     0    0    0     29    0  188
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  538   30   109  336    0     0    0    0     29    0  188
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96
PHF Volume:     0  562   31   114  351    0     0    0    0     30    0  196
Reduct Vol:     0    0    0     0    0    0     0    0    0      0    0    0
Reduced Vol:    0  562   31   114  351    0     0    0    0     30    0  196
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  562   31   114  351    0     0    0    0     30    0  196
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.81 0.57  0.81 0.85 1.00  1.00 1.00 1.00  0.81 1.00 0.53
Lanes:       0.00 2.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 2.00
Final Sat.:     0 3079 1079  1539 1620    0     0    0    0  1539    0 2000
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.18 0.03  0.07 0.22 0.00  0.00 0.00 0.00  0.02 0.00 0.10
Crit Moves:  ****            ****            ****
Green/Cycle: 0.00 0.44 0.44  0.17 0.61 0.00  0.00 0.00 0.00  0.25 0.00 0.25
Volume/Cap:  0.00 0.42 0.07  0.43 0.35 0.00  0.00 0.00 0.00  0.08 0.00 0.39
Uniform Del:  0.0 19.2 16.2  37.1  9.7  0.0   0.0  0.0  0.0  28.7  0.0 31.2
IncremntDel:  0.0  0.9  0.3   5.1  1.0  0.0   0.0  0.0  0.0   0.4  0.0  2.3
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 1.00
Delay/Veh:    0.0 20.2 16.5  42.2 10.7  0.0   0.0  0.0  0.0  29.1  0.0 33.5
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 20.2 16.5  42.2 10.7  0.0   0.0  0.0  0.0  29.1  0.0 33.5
LOS by Move:    A    C    B     D    B    A     A    A    A     C    A    C
HCM2kAvgQ:      0    6    1     4    5    0     0    0    0     1    0    3
Note: Queue reported is the number of cars per lane.
```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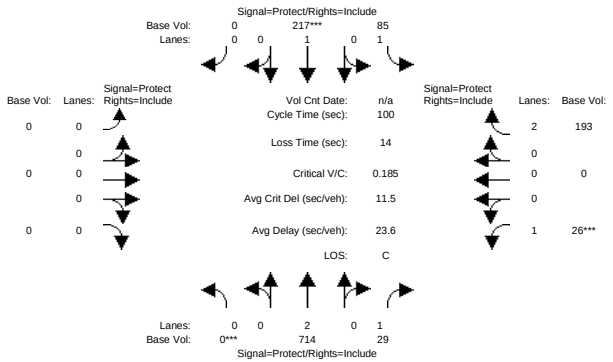
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #33: Mission Bay/7th




```
Street Name:            7th Street                    Mission Bay
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   36   36    14   61    0     0    0    0     25    0   25
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  714   29    85  217    0     0    0    0     26    0  193
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  714   29    85  217    0     0    0    0     26    0  193
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:     0  752   31    89  228    0     0    0    0     27    0  203
Reduct Vol:     0    0    0     0    0    0     0    0    0      0    0    0
Reduced Vol:    0  752   31    89  228    0     0    0    0     27    0  203
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  752   31    89  228    0     0    0    0     27    0  203
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.81 0.41  0.81 0.85 1.00  1.00 1.00 1.00  0.81 1.00 0.42
Lanes:       0.00 2.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 2.00
Final Sat.:     0 3079  784  1539 1620    0     0    0    0  1539    0 1580
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.24 0.04  0.06 0.14 0.00  0.00 0.00 0.00  0.02 0.00 0.13
Crit Moves:  ****            ****            ****
Green/Cycle: 0.00 0.44 0.44  0.17 0.61 0.00  0.00 0.00 0.00  0.25 0.00 0.25
Volume/Cap:  0.00 0.56 0.09  0.34 0.23 0.00  0.00 0.00 0.00  0.07 0.00 0.51
Uniform Del:  0.0 20.8 16.4  36.5  8.9  0.0   0.0  0.0  0.0  28.6  0.0 32.3
IncremntDel:  0.0  1.7  0.5   3.5  0.5  0.0   0.0  0.0  0.0   0.4  0.0  4.7
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 1.00
Delay/Veh:    0.0 22.5 16.9  40.0  9.4  0.0   0.0  0.0  0.0  29.0  0.0 37.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 22.5 16.9  40.0  9.4  0.0   0.0  0.0  0.0  29.0  0.0 37.0
LOS by Move:    A    C    B     D    A    A     A    A    A     C    A    D
HCM2kAvgQ:      0    9    1     3    3    0     0    0    0     1    0    4
Note: Queue reported is the number of cars per lane.
```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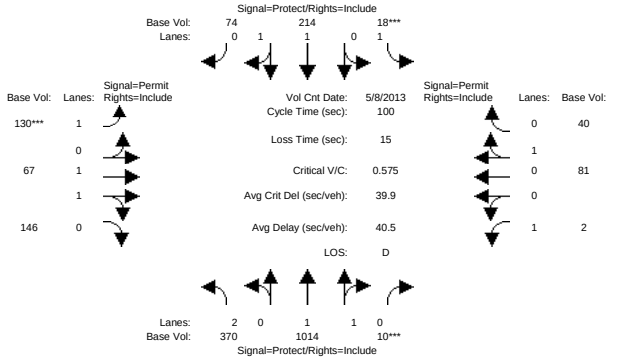
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	370	1014	10	18	214	74	130	67	146	2	81	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	370	1014	10	18	214	74	130	67	146	2	81	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	385	1054	10	19	222	77	135	70	152	2	84	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	385	1054	10	19	222	77	135	70	152	2	84	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	385	1054	10	19	222	77	135	70	152	2	84	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.78	0.76	0.55	0.68	0.66	0.51	0.71	0.70
Lanes:	2.00	1.98	0.02	1.00	1.48	0.52	1.00	1.00	1.00	1.00	0.67	0.33
Final Sat.:	2987	3046	30	1539	2188	757	1037	1295	1257	962	897	443
Capacity Analysis Module:												
Vol/Sat:	0.13	0.35	0.35	0.01	0.10	0.10	0.13	0.05	0.12	0.00	0.09	0.09
Crit Moves:			****	****			****					
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.92	0.91	0.91	0.10	0.28	0.28	0.37	0.15	0.35	0.01	0.27	0.27
Uniform Del:	42.4	29.4	29.4	39.2	22.8	22.8	24.3	22.3	24.0	21.2	23.3	23.3
IncremntDel:	27.9	12.1	12.1	1.1	0.7	0.7	2.9	0.2	1.5	0.0	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	70.3	41.5	41.5	40.3	23.5	23.5	27.2	22.6	25.5	21.2	24.7	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.3	41.5	41.5	40.3	23.5	23.5	27.2	22.6	25.5	21.2	24.7	24.7
LOS by Move:	E	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	7	17	17	1	4	3	3	2	4	0	3	3

Note: Queue reported is the number of cars per lane.

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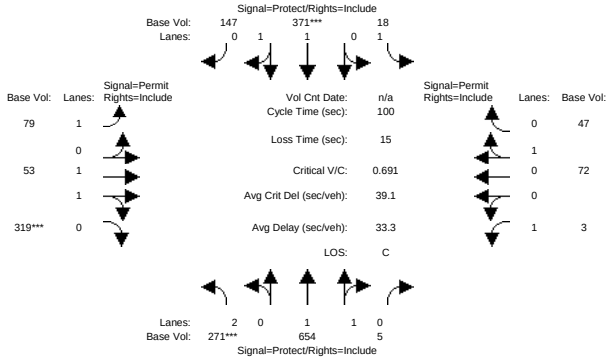
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	38	38	12	36	36	35	35	35	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	271	654	5	18	371	147	79	53	319	3	72	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	271	654	5	18	371	147	79	53	319	3	72	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	291	703	5	19	399	158	85	57	343	3	77	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	291	703	5	19	399	158	85	57	343	3	77	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	291	703	5	19	399	158	85	57	343	3	77	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.78	0.74	0.52	0.66	0.61	0.39	0.70	0.67
Lanes:	2.00	1.98	0.02	1.00	1.41	0.59	1.00	1.00	1.00	1.00	0.60	0.40
Final Sat.:	2987	3053	23	1539	2082	825	995	1257	1151	740	795	519
Capacity Analysis Module:												
Vol/Sat:	0.10	0.23	0.23	0.01	0.19	0.19	0.09	0.05	0.30	0.00	0.10	0.10
Crit Moves:	****				****				****			
Green/Cycle:	0.14	0.38	0.38	0.12	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.70	0.61	0.61	0.10	0.53	0.53	0.24	0.13	0.85	0.01	0.28	0.28
Uniform Del:	41.0	25.0	25.0	39.2	25.3	25.3	23.1	22.1	30.1	21.2	23.4	23.4
IncremntDel:	9.3	2.3	2.3	1.1	1.9	1.9	1.7	0.1	17.5	0.1	1.5	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.2	27.3	27.3	40.4	27.3	27.3	24.8	22.2	47.6	21.3	24.9	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	27.3	27.3	40.4	27.3	27.3	24.8	22.2	47.6	21.3	24.9	24.9
LOS by Move:	D	C	C	D	C	C	C	C	D	C	C	C
HCM2kAvgQ:	5	9	9	1	8	7	2	1	12	0	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
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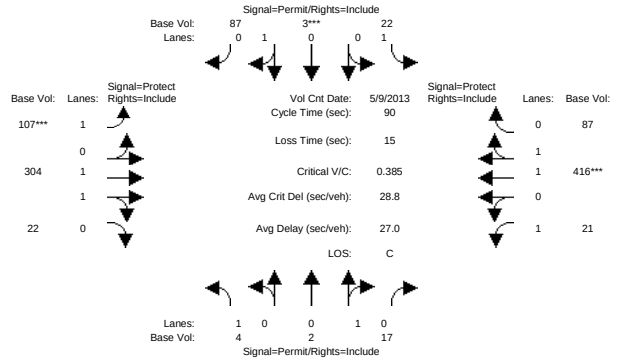
Intersection #35: 16th/4th




```
Street Name:            4th Street                      16th Street
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    30   30   30    30   30   30    17   30   30    15   28   28
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:       4    2   17    22    3   87   107  304   22    21  416   87
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    4    2   17    22    3   87   107  304   22    21  416   87
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:     4    2   18    23    3   91   112  319   23    22  437   91
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    4    2   18    23    3   91   112  319   23    22  437   91
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    4    2   18    23    3   91   112  319   23    22  437   91
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.57 0.74  0.71  0.61 0.73  0.70  0.81 0.75  0.75  0.81 0.79  0.78
Lanes:       1.00 0.10  0.90  1.00 0.03  0.97  1.00 1.86  0.14  1.00 1.65  0.35
Final Sat.:  1079  142  1210  1165   44  1283  1539 2664   193  1539 2474   517
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.01  0.01  0.02 0.07  0.07  0.07 0.12  0.12  0.01 0.18  0.18
Crit Moves:                      ****          ****                ****
Green/Cycle: 0.33 0.33  0.33  0.33 0.33  0.33  0.19 0.33  0.33  0.17 0.31  0.31
Volume/Cap:  0.01 0.04  0.04  0.06 0.21  0.21  0.39 0.36  0.36  0.09 0.57  0.57
Uniform Del: 20.1 20.3  20.3  20.4 21.5  21.5  31.9 22.7  22.7  31.7 25.9  25.9
IncremntDel:  0.1  0.2   0.2   0.3  1.1   1.1   3.8  1.1   1.1   0.7  2.5   2.5
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   20.1 20.5  20.5  20.7 22.6  22.6  35.8 23.8  23.8  32.4 28.4  28.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  20.1 20.5  20.5  20.7 22.6  22.6  35.8 23.8  23.8  32.4 28.4  28.4
LOS by Move:    C    C     C     C    C     C     D    C     C     C    C     C
HCM2kAvgQ:      0    0     0     0    2     2     3    4     4     1    7     7
Note: Queue reported is the number of cars per lane.
```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Level Of Service Computation Report
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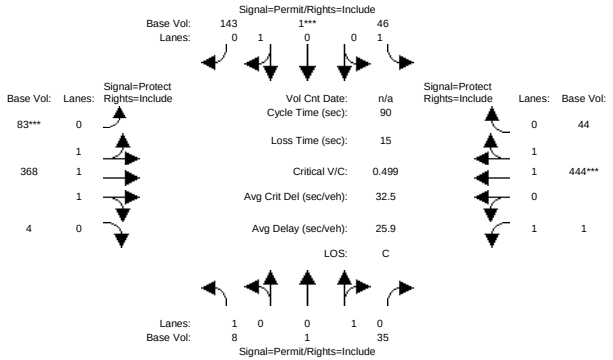
Intersection #35: 16th/4th




```
Street Name:            4th Street                      16th Street
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    30   30   30    30   30   30    15   30   30    15   30   30
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8    1   35    46    1  143    83  368    4     1  444   44
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    8    1   35    46    1  143    83  368    4     1  444   44
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91
PHF Volume:     9    1   38    51    1  157    91  404    4     1  488   48
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    9    1   38    51    1  157    91  404    4     1  488   48
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    9    1   38    51    1  157    91  404    4     1  488   48
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.52 0.73  0.70  0.60 0.73  0.69  0.74 0.74  0.74  0.81 0.80  0.79
Lanes:       1.00 0.03  0.97  1.00 0.01  0.99  0.55 2.42  0.03  1.00 1.82  0.18
Final Sat.:   991   37  1288  1140    9  1309   766 3395    37  1539 2763   274
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.03  0.03  0.04 0.12  0.12  0.12 0.12  0.12  0.00 0.18  0.18
Crit Moves:                      ****          ****                ****
Green/Cycle: 0.33 0.33  0.33  0.33 0.33  0.33  0.17 0.33  0.33  0.17 0.33  0.33
Volume/Cap:  0.03 0.09  0.09  0.13 0.36  0.36  0.71 0.36  0.36  0.00 0.53  0.53
Uniform Del: 20.2 20.6  20.6  20.9 22.7  22.7  35.5 22.7  22.7  31.3 24.3  24.3
IncremntDel:  0.1  0.4   0.4   0.7  2.3   2.3   6.2  0.7   0.7   0.0  2.0   2.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   20.3 21.0  21.0  21.7 25.0  25.0  41.6 23.4  23.4  31.3 26.3  26.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  20.3 21.0  21.0  21.7 25.0  25.0  41.6 23.4  23.4  31.3 26.3  26.3
LOS by Move:    C    C     C     C    C     C     D    C     C     C    C     C
HCM2kAvgQ:      0    1     1     1    4     4     5    4     4     0    7     6
Note: Queue reported is the number of cars per lane.
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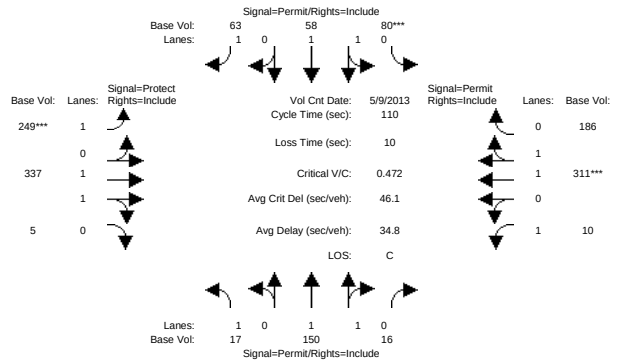
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #36: 16th/Owens



Street Name:	Owens St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	45	45	45	45	45	45	20	55	55	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	17	150	16	80	58	63	249	337	5	10	311	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	150	16	80	58	63	249	337	5	10	311	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	18	158	17	84	61	66	262	355	5	11	327	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	158	17	84	61	66	262	355	5	11	327	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	158	17	84	61	66	262	355	5	11	327	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.54	0.80	0.80	0.59	0.60	0.70	0.81	0.76	0.76	0.71	0.76	0.73
Lanes:	1.00	1.81	0.19	1.00	1.00	1.00	1.00	1.97	0.03	1.00	1.23	0.77
Final Sat.:	1028	2742	293	1116	1135	1327	1539	2839	42	1353	1786	1068
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.06	0.08	0.05	0.05	0.17	0.12	0.12	0.01	0.18	0.18
Crit Moves:				****			****				****	
Green/Cycle:	0.41	0.41	0.41	0.41	0.41	0.41	0.18	0.50	0.50	0.32	0.32	0.32
Volume/Cap:	0.04	0.14	0.14	0.18	0.13	0.12	0.94	0.25	0.25	0.02	0.58	0.58
Uniform Del:	19.5	20.4	20.4	20.8	20.3	20.2	44.4	15.7	15.7	25.8	31.3	31.3
IncremntDel:	0.2	0.2	0.2	0.5	0.2	0.5	39.7	0.4	0.4	0.1	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.7	20.6	20.6	21.3	20.5	20.7	84.1	16.1	16.1	25.9	34.0	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.7	20.6	20.6	21.3	20.5	20.7	84.1	16.1	16.1	25.9	34.0	34.0
LOS by Move:	B	C	C	C	C	C	F	B	B	C	C	C
HCM2kAvgQ:	0	2	2	2	1	1	11	4	0	0	8	8

Note: Queue reported is the number of cars per lane.

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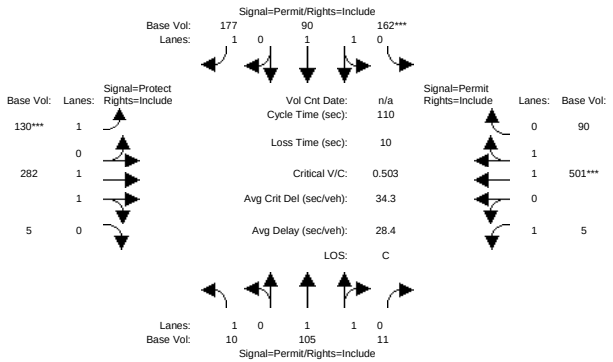
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #36: 16th/Owens



Street Name:	Owens St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	45	45	45	45	45	45	20	55	55	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	10	105	11	162	90	177	130	282	5	5	501	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	105	11	162	90	177	130	282	5	5	501	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	11	111	12	171	95	186	137	297	5	5	527	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	111	12	171	95	186	137	297	5	5	527	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	111	12	171	95	186	137	297	5	5	527	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.45	0.80	0.79	0.56	0.58	0.66	0.81	0.76	0.76	0.43	0.79	0.78
Lanes:	1.00	1.81	0.19	1.00	1.00	1.00	1.00	1.97	0.03	1.00	1.69	0.31
Final Sat.:	853	2746	288	1060	1104	1259	1539	2828	50	809	2544	457
Capacity Analysis Module:												
Vol/Sat:	0.01	0.04	0.04	0.16	0.09	0.15	0.09	0.10	0.10	0.01	0.21	0.21
Crit Moves:				****			****				****	
Green/Cycle:	0.41	0.41	0.41	0.41	0.41	0.41	0.18	0.50	0.50	0.32	0.32	0.32
Volume/Cap:	0.03	0.10	0.10	0.39	0.21	0.36	0.49	0.21	0.21	0.02	0.65	0.65
Uniform Del:	19.4	20.0	20.0	22.9	21.0	22.5	40.4	15.4	15.4	25.7	32.3	32.3
IncremntDel:	0.2	0.2	0.2	1.7	0.4	2.0	6.0	0.3	0.3	0.1	3.4	3.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.6	20.2	20.2	24.6	21.4	24.5	46.4	15.7	15.7	25.9	35.7	35.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.6	20.2	20.2	24.6	21.4	24.5	46.4	15.7	15.7	25.9	35.7	35.7
LOS by Move:	B	C	C	C	C	C	D	B	B	C	D	D
HCM2kAvgQ:	0	1	1	4	2	5	4	3	3	0	10	10

Note: Queue reported is the number of cars per lane.

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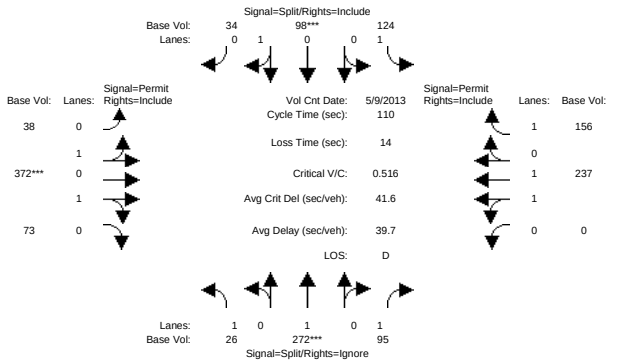
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #37: 16th/7th




```
Street Name:            7th Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   30   30   30    31   31   31    34   34   34    34   34   34    65
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   9.0  9.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am
Base Vol:     26  272   95   124   98   34    38  372   73     0  237  156
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  26  272   95   124   98   34    38  372   73     0  237  156
User Adj:    1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.98 0.98 0.00  0.98 0.98 0.98  0.98 0.98 0.98  0.98 0.98 0.98
PHF Volume:   27  278    0   127  100   35    39  380   74     0  242  159
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  27  278    0   127  100   35    39  380   74     0  242  159
PCE Adj:     1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  27  278    0   127  100   35    39  380   74     0  242  159
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.85 1.00  0.81 0.72 0.70  0.67 0.67 0.66  0.95 0.81 0.67
Lanes:       1.00 1.00 1.00  1.00 0.74 0.26  0.16 1.54 0.30  0.00 2.00 1.00
Final Sat.:  1539 1620 1900  1539 1007  349   200 1955  384     0 3079 1282
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.17 0.00  0.08 0.10 0.10  0.19 0.19 0.19  0.00 0.08 0.12
Crit Moves:       ****            ****            ****
Green/Cycle: 0.32 0.32 0.00  0.22 0.22 0.22  0.36 0.36 0.36  0.00 0.36 0.36
Volume/Cap:  0.05 0.54 0.00  0.37 0.45 0.45  0.54 0.54 0.54  0.00 0.22 0.34
Uniform Del: 33.1 39.3  0.0  46.2 47.1 47.1  35.5 35.5 35.5   0.0 31.1 32.7
IncremntDel:  0.2  4.0  0.0   3.1  4.8  4.8   2.3  2.3  2.3   0.0  0.5  2.0
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00
Delay/Veh:   33.3 43.3  0.0  49.3 51.9 51.9  37.8 37.8 37.8   0.0 31.5 34.7
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  33.3 43.3  0.0  49.3 51.9 51.9  37.8 37.8 37.8   0.0 31.5 34.7
LOS by Move:    C    D    A     D    D    D     D    D    D     A    C    C
HCM2kAvgQ:      1   10    0     5    5    5     9    9    9     0    4    5
Note: Queue reported is the number of cars per lane.
```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Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
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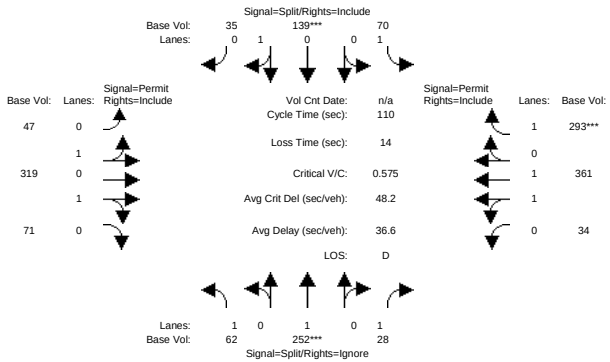
Intersection #37: 16th/7th




```
Street Name:            7th Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   30   30   30    31   31   31    34   34   34    34   34   34    65
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   9.0  9.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     62  252   28    70  139   35    47  319   71    34  361  293
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  62  252   28    70  139   35    47  319   71    34  361  293
User Adj:    1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.98 0.98 0.00  0.98 0.98 0.98  0.98 0.98 0.98  0.98 0.98 0.98
PHF Volume:   63  257    0    71  142   36    48  326   72    35  368  299
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  63  257    0    71  142   36    48  326   72    35  368  299
PCE Adj:     1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  63  257    0    71  142   36    48  326   72    35  368  299
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.81 0.85 1.00  0.81 0.72 0.71  0.63 0.63 0.63  0.71 0.71 0.69
Lanes:       1.00 1.00 1.00  1.00 0.80 0.20  0.21 1.46 0.33  0.17 1.83 1.00
Final Sat.:  1539 1620 1900  1539 1096  276   259 1755  391   232 2459 1303
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.16 0.00  0.05 0.13 0.13  0.19 0.19 0.19  0.15 0.15 0.23
Crit Moves:       ****            ****                            ****
Green/Cycle: 0.21 0.21 0.00  0.22 0.22 0.22  0.46 0.46 0.46  0.46 0.46 0.46
Volume/Cap:  0.19 0.74 0.00  0.21 0.58 0.58  0.40 0.40 0.40  0.32 0.32 0.49
Uniform Del: 45.1 51.4  0.0  44.5 48.7 48.7  24.7 24.7 24.7  23.6 23.6 26.1
IncremntDel:  1.3 13.3  0.0   1.4  8.0  8.0   1.1  1.1  1.1   0.7  0.7  2.9
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   46.4 64.6  0.0  45.9 56.7 56.7  25.7 25.7 25.7  24.3 24.3 28.9
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  46.4 64.6  0.0  45.9 56.7 56.7  25.7 25.7 25.7  24.3 24.3 28.9
LOS by Move:    D    E    A     D    E    E     C    C    C     C    C    C
HCM2kAvgQ:      2   12    0     3    7    7     7    7    7     6    6    9
Note: Queue reported is the number of cars per lane.
```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Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
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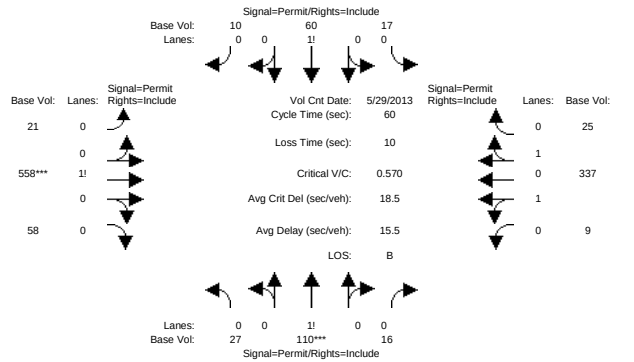
Intersection #38: 16th St/Rhode Island




```
Street Name:       Rhode Island Street              16th Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    22   22   22    22   22   22    28   28   28    28   28   28
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am
Base Vol:      27  110   16    17   60   10    21  558   58     9  337   25
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   27  110   16    17   60   10    21  558   58     9  337   25
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91
PHF Volume:    30  121   18    19   66   11    23  613   64    10  370   27
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   30  121   18    19   66   11    23  613   64    10  370   27
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   30  121   18    19   66   11    23  613   64    10  370   27
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.93  0.93  0.92 0.92  0.92  0.97 0.97  0.97  0.88 0.88  0.88
Lanes:       0.18 0.72  0.10  0.20 0.69  0.11  0.03 0.88  0.09  0.05 1.82  0.13
Final Sat.:   312 1270   185   342 1207   201    61 1615   168    81 3045   226
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.10  0.10  0.05 0.05  0.05  0.38 0.38  0.38  0.12 0.12  0.12
Crit Moves:       ****                          ****
Green/Cycle: 0.37 0.37  0.37  0.37 0.37  0.37  0.47 0.47  0.47  0.47 0.47  0.47
Volume/Cap:  0.26 0.26  0.26  0.15 0.15  0.15  0.81 0.81  0.81  0.26 0.26  0.26
Uniform Del: 13.3 13.3  13.3  12.7 12.7  12.7  13.8 13.8  13.8   9.7  9.7   9.7
IncremntDel:  0.2  0.2   0.2   0.1  0.1   0.1   6.0  6.0   6.0   0.1  0.1   0.1
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   13.5 13.5  13.5  12.8 12.8  12.8  19.7 19.7  19.7   9.8  9.8   9.8
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  13.5 13.5  13.5  12.8 12.8  12.8  19.7 19.7  19.7   9.8  9.8   9.8
LOS by Move:    B    B     B     B    B     B     B    B     B     A    A     A
HCM2kAvgQ:      2    2     2     1    1     1    11   11    11     3    3     3
Note: Queue reported is the number of cars per lane.
```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Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
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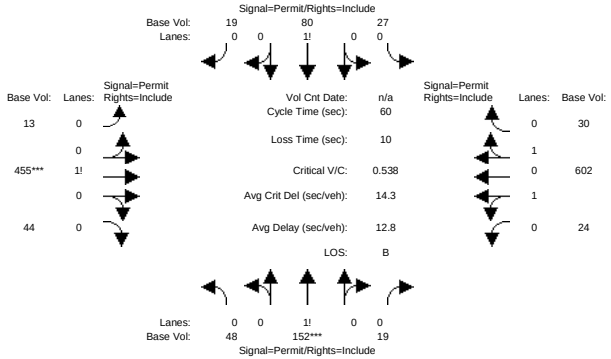
Intersection #38: 16th St/Rhode Island




```
Street Name:       Rhode Island Street              16th Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    22   22   22    22   22   22    28   28   28    28   28   28
Y+R:          5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      48  152   19    27   80   19    13  455   44    24  602   30
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   48  152   19    27   80   19    13  455   44    24  602   30
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91
PHF Volume:    53  167   21    30   88   21    14  500   48    26  662   33
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   53  167   21    30   88   21    14  500   48    26  662   33
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   53  167   21    30   88   21    14  500   48    26  662   33
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.90  0.90  0.89 0.89  0.89  0.96 0.96  0.96  0.87 0.87  0.87
Lanes:       0.22 0.69  0.09  0.21 0.64  0.15  0.02 0.89  0.09  0.07 1.84  0.09
Final Sat.:   374 1184   148   362 1072   255    46 1627   157   121 3043   152
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.14  0.14  0.08 0.08  0.08  0.31 0.31  0.31  0.22 0.22  0.22
Crit Moves:       ****                          ****
Green/Cycle: 0.37 0.37  0.37  0.37 0.37  0.37  0.47 0.47  0.47  0.47 0.47  0.47
Volume/Cap:  0.38 0.38  0.38  0.22 0.22  0.22  0.66 0.66  0.66  0.47 0.47  0.47
Uniform Del: 14.0 14.0  14.0  13.1 13.1  13.1  12.3 12.3  12.3  10.9 10.9  10.9
IncremntDel:  0.4  0.4   0.4   0.2  0.2   0.2   1.9  1.9   1.9   0.2  0.2   0.2
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   14.4 14.4  14.4  13.3 13.3  13.3  14.2 14.2  14.2  11.1 11.1  11.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  14.4 14.4  14.4  13.3 13.3  13.3  14.2 14.2  14.2  11.1 11.1  11.1
LOS by Move:    B    B     B     B    B     B     B    B     B     B    B     B
HCM2kAvgQ:      4    4     4     2    2     2     8    8     8     5    5     5
Note: Queue reported is the number of cars per lane.
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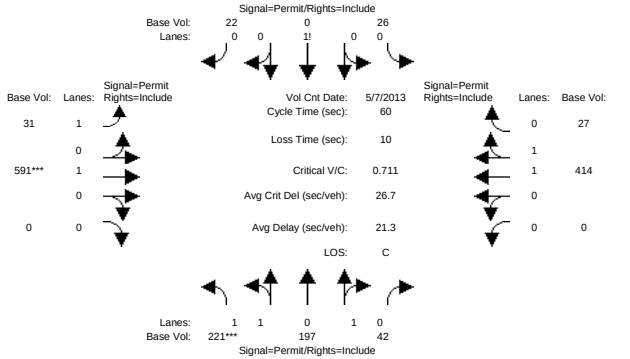
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	221	197	42	26	0	22	31	591	0	0	414	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	197	42	26	0	22	31	591	0	0	414	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	238	212	45	28	0	24	33	635	0	0	445	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	212	45	28	0	24	33	635	0	0	445	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	238	212	45	28	0	24	33	635	0	0	445	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.61	0.61	0.55	1.00	0.55	0.41	0.75	1.00	1.00	0.75	0.75
Lanes:	1.47	1.26	0.27	0.54	0.00	0.46	1.00	1.00	0.00	0.00	1.88	0.12
Final Sat.:	1642	1464	312	563	0	477	778	1418	0	0	2685	175
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.05	0.00	0.05	0.04	0.45	0.00	0.00	0.17	0.17
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.41	0.41	0.41	0.14	0.00	0.14	0.09	0.93	0.00	0.00	0.34	0.34
Uniform Del:	14.8	14.8	14.8	13.3	0.0	13.3	8.4	14.5	0.0	0.0	9.6	9.6
IncremntDel:	1.1	1.1	1.1	0.8	0.0	0.8	0.5	20.6	0.0	0.0	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.9	15.9	15.9	14.2	0.0	14.2	8.8	35.1	0.0	0.0	10.3	10.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.9	15.9	14.2	0.0	14.2	8.8	35.1	0.0	0.0	10.3	10.3
LOS by Move:	B	B	B	B	A	B	A	D	A	A	B	B
HCM2kAvgQ:	3	3	3	1	0	1	0	11	0	0	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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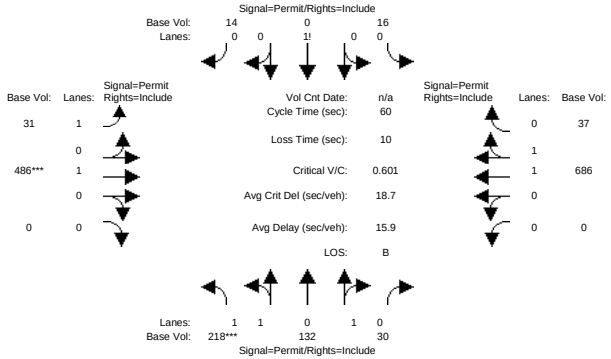
Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	218	132	30	16	0	14	31	486	0	0	686	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	218	132	30	16	0	14	31	486	0	0	686	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	240	145	33	18	0	15	34	534	0	0	754	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	240	145	33	18	0	15	34	534	0	0	754	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	240	145	33	18	0	15	34	534	0	0	754	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.60	0.60	0.58	1.00	0.58	0.26	0.75	1.00	1.00	0.75	0.75
Lanes:	1.75	1.02	0.23	0.54	0.00	0.46	1.00	1.00	0.00	0.00	1.90	0.10
Final Sat.:	1931	1169	266	588	0	515	501	1418	0	0	2717	147
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.03	0.00	0.03	0.07	0.38	0.00	0.00	0.28	0.28
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.35	0.35	0.35	0.09	0.00	0.09	0.14	0.78	0.00	0.00	0.57	0.57
Uniform Del:	14.5	14.5	14.5	13.1	0.0	13.1	8.6	12.8	0.0	0.0	11.1	11.1
IncremntDel:	0.8	0.8	0.8	0.4	0.0	0.4	1.2	8.5	0.0	0.0	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	13.5	0.0	13.5	9.8	21.4	0.0	0.0	12.8	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	13.5	0.0	13.5	9.8	21.4	0.0	0.0	12.8	12.8
LOS by Move:	B	B	B	B	A	B	A	C	A	A	B	B
HCM2kAvgQ:	2	2	2	0	0	0	0	8	0	0	6	6

Note: Queue reported is the number of cars per lane.

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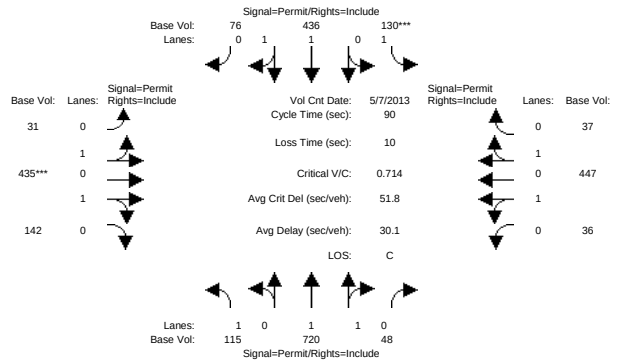
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	54	0	54	54	0	54	0	26	0	0	26	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:30am												
Base Vol:	115	720	48	130	436	76	31	435	142	36	447	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	720	48	130	436	76	31	435	142	36	447	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	119	742	49	134	449	78	32	448	146	37	461	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	742	49	134	449	78	32	448	146	37	461	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	742	49	134	449	78	32	448	146	37	461	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.27	0.59	0.72	0.20	0.58	0.70	0.64	0.58	0.63	0.61	0.54	0.61
Lanes:	1.00	1.90	0.10	1.00	1.75	0.25	0.09	1.47	0.44	0.12	1.75	0.13
Final Sat.:	515	2116	141	375	1925	336	115	1617	528	145	1795	149
Capacity Analysis Module:												
Vol/Sat:	0.23	0.35	0.35	0.36	0.23	0.23	0.28	0.28	0.28	0.26	0.26	0.26
Crit Moves:				****				****				
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.38	0.58	0.58	0.60	0.39	0.39	0.96	0.96	0.96	0.89	0.89	0.89
Uniform Del:	9.4	11.1	11.1	11.2	9.4	9.4	31.5	31.5	31.5	30.6	30.6	30.6
IncremntDel:	3.6	1.9	1.9	11.1	0.8	0.8	26.6	26.6	26.6	17.6	17.6	17.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.9	12.9	12.9	22.3	10.2	10.2	58.1	58.1	58.1	48.2	48.2	48.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.9	12.9	12.9	22.3	10.2	10.2	58.1	58.1	58.1	48.2	48.2	48.2
LOS by Move:	B	B	B	C	B	B	E	E	E	D	D	D
HCM2kAvgQ:	2	8	9	3	4	5	15	13	14	10	9	10

Note: Queue reported is the number of cars per lane.

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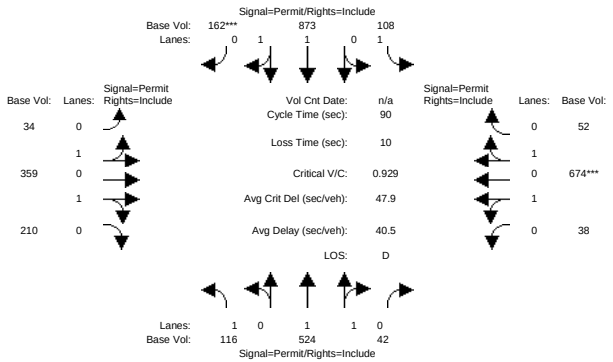
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	50	0	50	50	0	50	0	30	0	0	30	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	116	524	42	108	873	162	34	359	210	38	674	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	524	42	108	873	162	34	359	210	38	674	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	120	540	43	111	900	167	35	370	216	39	695	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	540	43	111	900	167	35	370	216	39	695	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	540	43	111	900	167	35	370	216	39	695	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.16	0.59	0.72	0.31	0.58	0.70	0.57	0.51	0.56	0.65	0.58	0.65
Lanes:	1.00	1.88	0.12	1.00	1.73	0.27	0.10	1.24	0.66	0.09	1.79	0.12
Final Sat.:	307	2090	168	588	1904	353	114	1200	702	111	1967	152
Capacity Analysis Module:												
Vol/Sat:	0.39	0.26	0.26	0.19	0.47	0.47	0.31	0.31	0.31	0.35	0.35	0.35
Crit Moves:						****					****	
Green/Cycle:	0.56	0.56	0.56	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.70	0.47	0.47	0.34	0.85	0.85	0.92	0.92	0.92	1.06	1.06	1.06
Uniform Del:	14.6	12.0	12.0	11.0	16.9	16.9	28.9	28.9	28.9	30.0	30.0	30.0
IncremntDel:	21.3	1.2	1.2	2.8	7.4	7.4	20.5	20.5	20.5	50.0	50.0	50.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	35.9	13.2	13.2	13.8	24.2	24.2	49.4	49.4	49.4	80.0	80.0	80.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.9	13.2	13.2	13.8	24.2	24.2	49.4	49.4	49.4	80.0	80.0	80.0
LOS by Move:	D	B	B	B	C	C	D	D	D	E	E	E
HCM2kAvgQ:	4	5	6	2	16	18	14	12	13	19	17	19

Note: Queue reported is the number of cars per lane.

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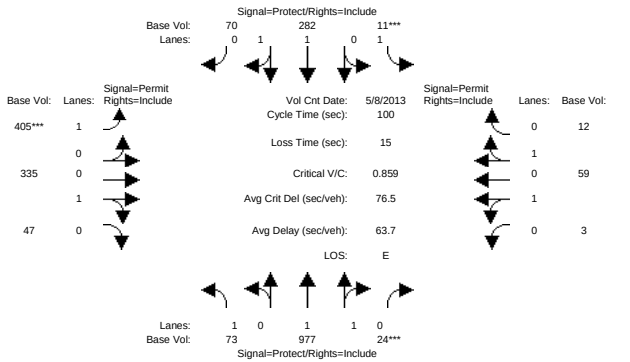
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	17	40	40	15	38	38	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	73	977	24	11	282	70	405	335	47	3	59	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	977	24	11	282	70	405	335	47	3	59	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	75	1009	25	11	291	72	418	346	49	3	61	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	1009	25	11	291	72	418	346	49	3	61	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	1009	25	11	291	72	418	346	49	3	61	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.80	0.81	0.78	0.77	0.58	0.73	0.73	0.74	0.74	0.74
Lanes:	1.00	1.95	0.05	1.00	1.60	0.40	1.00	0.88	0.12	0.08	1.59	0.33
Final Sat.:	1539	2963	73	1539	2365	587	1094	1220	171	115	2254	458
Capacity Analysis Module:												
Vol/Sat:	0.05	0.34	0.34	0.01	0.12	0.12	0.38	0.28	0.28	0.03	0.03	0.03
Crit Moves:			****	****			****					
Green/Cycle:	0.17	0.40	0.40	0.15	0.38	0.38	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.29	0.85	0.85	0.05	0.32	0.32	1.27	0.95	0.95	0.09	0.09	0.09
Uniform Del:	36.2	27.3	27.3	36.4	21.9	21.9	35.0	34.2	34.2	25.2	25.2	25.2
IncremntDel:	2.8	7.6	7.6	0.4	0.8	0.8	145.2	32.3	32.3	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.0	34.9	34.9	36.8	22.7	22.7	180.2	66.5	66.5	25.4	25.4	25.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	34.9	34.9	36.8	22.7	22.7	180.2	66.5	66.5	25.4	25.4	25.4
LOS by Move:	D	C	C	D	C	C	F	E	E	C	C	C
HCM2kAvgQ:	2	18	18	0	4	4	24	14	14	1	1	1

Note: Queue reported is the number of cars per lane.

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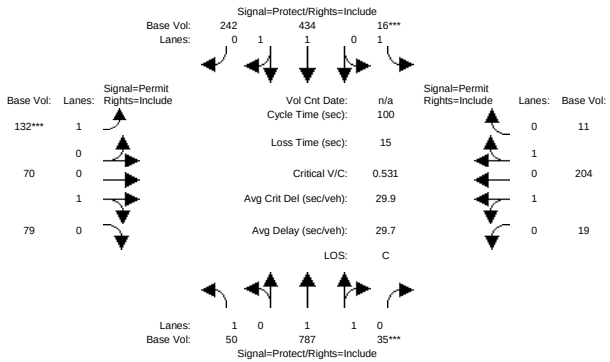
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	17	40	40	15	38	38	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	50	787	35	16	434	242	132	70	79	19	204	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	787	35	16	434	242	132	70	79	19	204	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	53	828	37	17	457	255	139	74	83	20	215	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	828	37	17	457	255	139	74	83	20	215	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	828	37	17	457	255	139	74	83	20	215	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.79	0.81	0.76	0.71	0.47	0.69	0.61	0.73	0.74	0.74
Lanes:	1.00	1.91	0.09	1.00	1.25	0.75	1.00	0.44	0.56	0.16	1.75	0.09
Final Sat.:	1539	2899	129	1539	1809	1009	899	575	649	229	2462	133
Capacity Analysis Module:												
Vol/Sat:	0.03	0.29	0.29	0.01	0.25	0.25	0.15	0.13	0.13	0.09	0.09	0.09
Crit Moves:			****	****			****					
Green/Cycle:	0.17	0.40	0.40	0.15	0.38	0.38	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.20	0.71	0.71	0.07	0.66	0.66	0.52	0.43	0.43	0.29	0.29	0.29
Uniform Del:	35.7	25.2	25.2	36.5	25.7	25.7	29.0	28.1	28.1	26.8	26.8	26.8
IncremntDel:	1.7	3.6	3.6	0.6	3.3	3.3	6.9	3.6	3.6	0.9	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.4	28.8	28.8	37.1	29.0	29.0	35.9	31.7	31.7	27.7	27.7	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	28.8	28.8	37.1	29.0	29.0	35.9	31.7	31.7	27.7	27.7	27.7
LOS by Move:	D	C	C	D	C	C	D	C	C	C	C	C
HCM2kAvgQ:	2	13	13	0	10	10	4	4	4	3	3	3

Note: Queue reported is the number of cars per lane.

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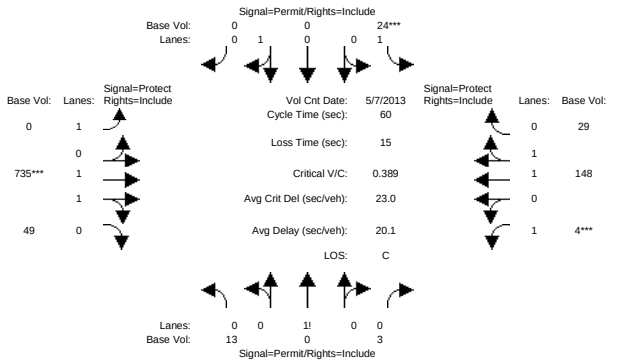
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	13	0	3	24	0	0	0	735	49	4	148	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	0	3	24	0	0	0	735	49	4	148	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	14	0	3	25	0	0	0	774	52	4	156	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	0	3	25	0	0	0	774	52	4	156	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	0	3	25	0	0	0	774	52	4	156	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	1.00	0.70	0.67	1.00	1.00	1.00	0.75	0.75	0.81	0.74	0.74
Lanes:	0.82	0.00	0.18	1.00	1.00	0.00	1.00	1.87	0.13	1.00	1.67	0.33
Final Sat.:	1053	0	243	1269	1900	0	1900	2681	179	1539	2351	461
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.02	0.00	0.00	0.00	0.29	0.29	0.00	0.07	0.07
Crit Moves:				****				****		****		
Green/Cycle:	0.20	0.00	0.20	0.20	0.00	0.00	0.00	0.40	0.40	0.20	0.60	0.60
Volume/Cap:	0.06	0.00	0.06	0.10	0.00	0.00	0.00	0.72	0.72	0.01	0.11	0.11
Uniform Del:	24.3	0.0	24.3	24.5	0.0	0.0	0.0	19.0	19.0	24.1	6.4	6.4
IncremntDel:	0.5	0.0	0.5	0.8	0.0	0.0	0.0	4.0	4.0	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	24.8	0.0	24.8	25.3	0.0	0.0	0.0	22.9	22.9	24.1	6.6	6.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.8	0.0	24.8	25.3	0.0	0.0	0.0	22.9	22.9	24.1	6.6	6.6
LOS by Move:	C	A	C	C	A	A	A	C	C	C	A	A
HCM2kAvgQ:	0	0	0	1	0	0	0	10	10	0	1	1

Note: Queue reported is the number of cars per lane.

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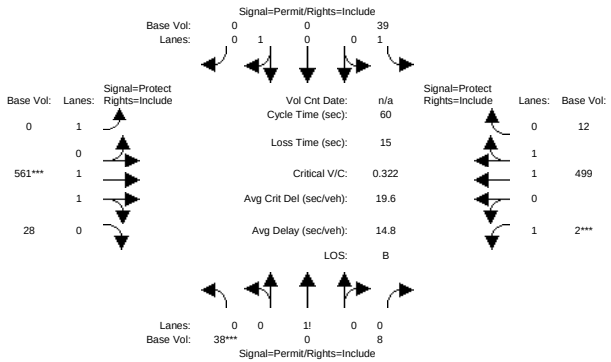
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	38	0	8	39	0	0	0	561	28	2	499	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	0	8	39	0	0	0	561	28	2	499	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	40	0	8	41	0	0	0	591	29	2	525	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	0	8	41	0	0	0	591	29	2	525	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	0	8	41	0	0	0	591	29	2	525	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	1.00	0.65	0.63	1.00	1.00	1.00	0.75	0.75	0.81	0.76	0.76
Lanes:	0.83	0.00	0.17	1.00	1.00	0.00	1.00	1.90	0.10	1.00	1.95	0.05
Final Sat.:	998	0	210	1189	1900	0	1900	2730	136	1539	2810	68
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.04	0.03	0.00	0.00	0.00	0.22	0.22	0.00	0.19	0.19
Crit Moves:	****							****		****		
Green/Cycle:	0.20	0.00	0.20	0.20	0.00	0.00	0.00	0.40	0.40	0.20	0.60	0.60
Volume/Cap:	0.20	0.00	0.20	0.17	0.00	0.00	0.00	0.54	0.54	0.01	0.31	0.31
Uniform Del:	25.0	0.0	25.0	24.9	0.0	0.0	0.0	17.2	17.2	24.0	7.4	7.4
IncremntDel:	1.9	0.0	1.9	1.6	0.0	0.0	0.0	1.8	1.8	0.0	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.9	0.0	26.9	26.4	0.0	0.0	0.0	19.1	19.1	24.1	7.9	7.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.9	0.0	26.9	26.4	0.0	0.0	0.0	19.1	19.1	24.1	7.9	7.9
LOS by Move:	C	A	C	C	A	A	A	B	B	C	A	A
HCM2kAvgQ:	1	0	1	1	0	0	0	6	6	0	3	3

Note: Queue reported is the number of cars per lane.

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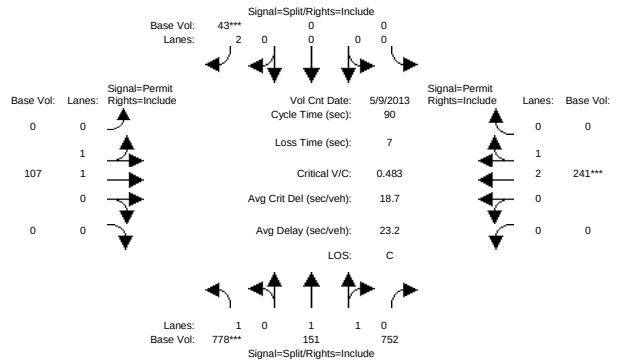
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 AM

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	55	55	55	13	13	13	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	778	151	752	0	0	43	0	107	0	0	241	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	778	151	752	0	0	43	0	107	0	0	241	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	807	157	780	0	0	45	0	111	0	0	250	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	807	157	780	0	0	45	0	111	0	0	250	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	807	157	780	0	0	45	0	111	0	0	250	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.13	0.74	0.72	1.00	1.00	0.61	0.95	0.94	1.00	1.00	0.90	0.91
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	3.00	0.00
Final Sat.:	2138	1403	1374	0	0	2325	0	3558	0	0	5112	0
Capacity Analysis Module:												
Vol/Sat:	0.38	0.11	0.57	0.00	0.00	0.02	0.00	0.03	0.00	0.00	0.05	0.00
Crit Moves:	****					****					****	
Green/Cycle:	0.61	0.61	0.61	0.00	0.00	0.14	0.00	0.17	0.00	0.00	0.17	0.00
Volume/Cap:	0.62	0.18	0.93	0.00	0.00	0.13	0.00	0.19	0.00	0.00	0.29	0.00
Uniform Del:	10.9	7.7	15.7	0.0	0.0	33.6	0.0	32.3	0.0	0.0	32.9	0.0
IncremntDel:	2.2	0.1	15.6	0.0	0.0	0.8	0.0	0.7	0.0	0.0	0.9	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	13.1	7.7	31.4	0.0	0.0	34.4	0.0	33.0	0.0	0.0	33.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	7.7	31.4	0.0	0.0	34.4	0.0	33.0	0.0	0.0	33.7	0.0
LOS by Move:	B	A	C	A	A	C	A	C	A	A	C	A
HCM2kAvgQ:	14	2	25	0	0	1	0	1	0	0	2	0

Note: Queue reported is the number of cars per lane.

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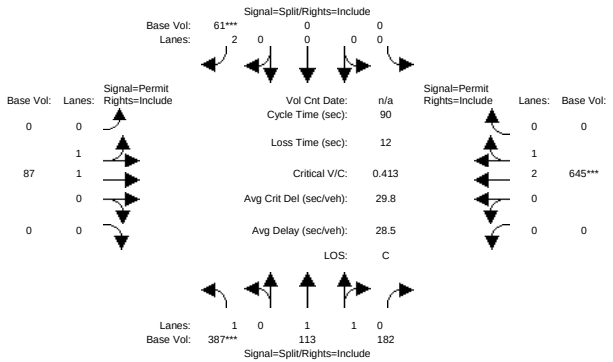
Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
2015 PM

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	29	29	29	26	26	26	23	23	23	23	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	387	113	182	0	0	61	0	87	0	0	645	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	387	113	182	0	0	61	0	87	0	0	645	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	403	118	190	0	0	64	0	91	0	0	672	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	403	118	190	0	0	64	0	91	0	0	672	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	403	118	190	0	0	64	0	91	0	0	672	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.81	1.00	1.00	0.62	0.95	0.94	1.00	1.00	0.90	0.91
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	3.00	0.00
Final Sat.:	2018	1454	1540	0	0	2358	0	3558	0	0	5112	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.08	0.12	0.00	0.00	0.03	0.00	0.03	0.00	0.00	0.13	0.00
Crit Moves:	****					****					****	
Green/Cycle:	0.32	0.32	0.32	0.00	0.00	0.29	0.00	0.26	0.00	0.00	0.26	0.00
Volume/Cap:	0.62	0.25	0.38	0.00	0.00	0.09	0.00	0.10	0.00	0.00	0.51	0.00
Uniform Del:	25.8	22.5	23.6	0.0	0.0	23.4	0.0	25.6	0.0	0.0	28.7	0.0
IncremntDel:	4.4	0.5	1.4	0.0	0.0	0.3	0.0	0.2	0.0	0.0	1.4	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Delay/Veh:	30.2	23.0	25.0	0.0	0.0	23.7	0.0	25.8	0.0	0.0	30.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	23.0	25.0	0.0	0.0	23.7	0.0	25.8	0.0	0.0	30.2	0.0
LOS by Move:	C	C	C	A	A	C	A	C	A	A	C	A
HCM2kAvgQ:	10	3	4	0	0	1	0	1	0	0	6	0

Note: Queue reported is the number of cars per lane.

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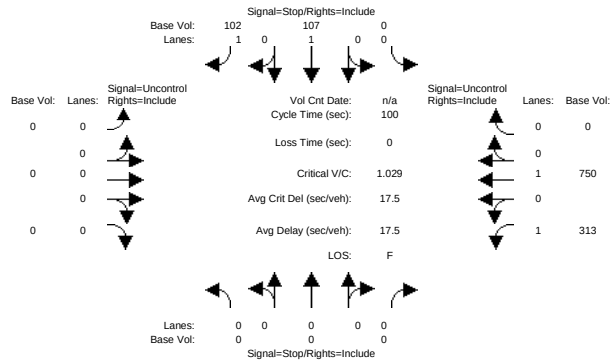
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
2015 AM

Intersection #44: Mariposa/I-280 SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	0	107	102	0	0	0	313	750	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	107	102	0	0	0	313	750	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	111	106	0	0	0	326	781	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	111	106	0	0	0	326	781	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	1433	781	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	135	398	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	108	398	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	1.03	0.27	xxxx	xxxx	xxxx	0.20	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	6.7	1.1	xxxx	xxxx	xxxxx	0.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	169	17.3	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	F	C	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			95.0			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

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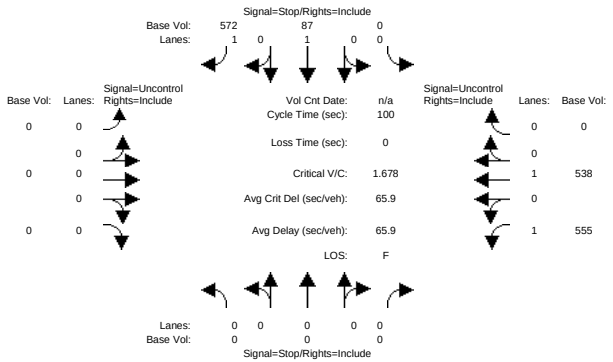
Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
2015 PM

Intersection #44: Mariposa/I-280 SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	0	87	572	0	0	0	555	538	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	87	572	0	0	0	555	538	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	93	609	0	0	0	590	572	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	93	609	0	0	0	590	572	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	1753	572	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	86	523	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	55	523	xxxx	xxxx	xxxxx	1636	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	1.68	1.16	xxxx	xxxx	xxxx	0.36	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	8.7	21.4	xxxx	xxxx	xxxxx	1.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	492	118.9	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	F	F	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			168.2			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

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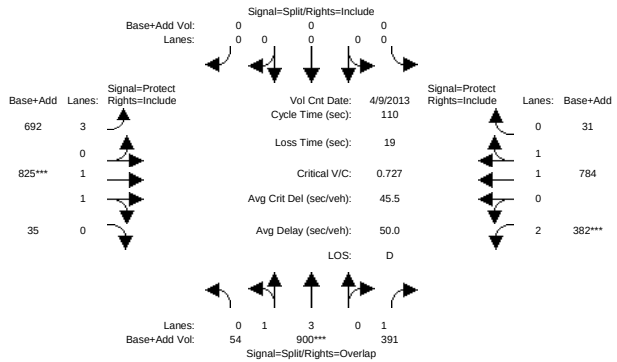
Year 2015 Plus LRDP (Mission Bay Only)

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One AM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module: >> Count Date: 9 Apr 2013 << 7:00-8:45am												
Base Vol:	54	889	390	0	0	0	689	825	35	347	780	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	889	390	0	0	0	689	825	35	347	780	31
Added Vol:	0	11	1	0	0	0	3	0	0	35	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	900	391	0	0	0	692	825	35	382	784	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	57	947	412	0	0	0	728	868	37	402	825	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	947	412	0	0	0	728	868	37	402	825	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	947	412	0	0	0	728	868	37	402	825	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.80	0.79	0.81	0.80
Lanes:	0.23	3.77	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	332	5531	1344	0	0	0	4480	2935	125	2987	2944	116
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.31	0.00	0.00	0.00	0.16	0.30	0.30	0.13	0.28	0.28
Crit Moves:		****						****			****	
Green/Cycle:	0.35	0.35	0.49	0.00	0.00	0.00	0.16	0.34	0.34	0.14	0.31	0.31
Volume/Cap:	0.48	0.48	0.62	0.00	0.00	0.00	0.99	0.88	0.88	0.99	0.91	0.91
Uniform Del:	27.6	27.6	20.5	0.0	0.0	0.0	45.9	34.4	34.4	47.4	36.5	36.5
IncremntDel:	0.8	0.8	4.4	0.0	0.0	0.0	31.7	10.7	10.7	41.6	13.9	13.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.5	28.5	25.0	0.0	0.0	0.0	77.7	45.1	45.1	89.0	50.4	50.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.5	28.5	25.0	0.0	0.0	0.0	77.7	45.1	45.1	89.0	50.4	50.4
LOS by Move:	C	C	C	A	A	A	E	D	D	F	D	D
HCM2kAvgQ:	7	7	10	0	0	0	9	14	14	11	18	18

Note: Queue reported is the number of cars per lane.

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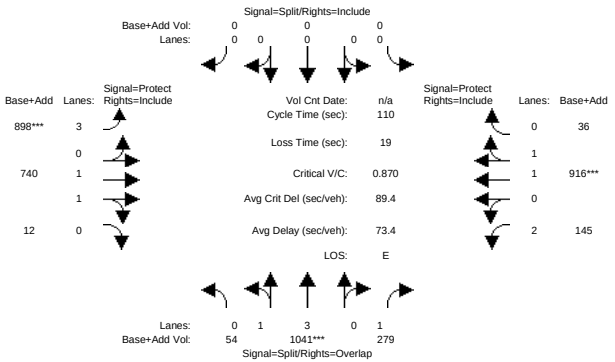
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One PM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	54	974	274	0	0	0	881	739	12	141	916	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	974	274	0	0	0	881	739	12	141	916	36
Added Vol:	0	67	5	0	0	0	17	1	0	4	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	1041	279	0	0	0	898	740	12	145	916	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	56	1073	288	0	0	0	926	763	12	149	944	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	1073	288	0	0	0	926	763	12	149	944	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	1073	288	0	0	0	926	763	12	149	944	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.81	0.79	0.81	0.80
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.97	0.03	2.00	1.92	0.08
Final Sat.:	289	5574	1353	0	0	0	4480	3024	49	2987	2944	116
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.21	0.00	0.00	0.00	0.21	0.25	0.25	0.05	0.32	0.32
Crit Moves:		****						****			****	
Green/Cycle:	0.35	0.35	0.48	0.00	0.00	0.00	0.16	0.35	0.35	0.12	0.31	0.31
Volume/Cap:	0.54	0.54	0.45	0.00	0.00	0.00	1.26	0.72	0.72	0.41	1.04	1.04
Uniform Del:	28.4	28.4	19.1	0.0	0.0	0.0	46.0	31.1	31.1	44.5	38.0	38.0
IncremntDel:	1.0	1.0	2.2	0.0	0.0	0.0	129.1	4.2	4.2	3.3	39.5	39.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	29.4	29.4	21.3	0.0	0.0	0.0	175.1	35.3	35.3	47.9	77.5	77.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	29.4	21.3	0.0	0.0	0.0	175.1	35.3	35.3	47.9	77.5	77.5
LOS by Move:	C	C	C	A	A	A	F	D	D	D	E	E
HCM2kAvgQ:	8	8	6	0	0	0	18	11	11	3	25	25

Note: Queue reported is the number of cars per lane.

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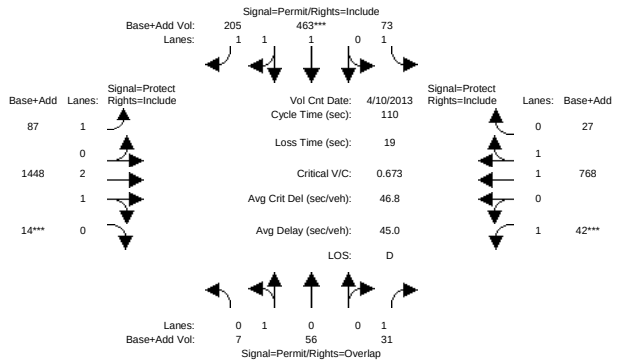
Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	36	36	36	36	36	36	19	40	40	15	36	36
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module: >> Count Date: 10 Apr 2013 << 7:00-8:45am												
Base Vol:	7	54	28	73	363	205	87	1448	14	38	768	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	54	28	73	363	205	87	1448	14	38	768	27
Added Vol:	0	2	3	0	100	0	0	0	0	4	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	56	31	73	463	205	87	1448	14	42	768	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	8	60	33	78	498	220	94	1557	11	45	826	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	60	33	78	498	220	94	1557	11	45	826	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	60	33	78	498	220	94	1557	11	45	826	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.81	0.69	0.58	0.77	0.75	0.81	0.77	0.78	0.81	0.80	0.80
Lanes:	0.11	0.89	1.00	1.00	2.00	1.00	1.00	2.98	0.02	1.00	1.93	0.07
Final Sat.:	170	1362	1314	1103	2937	1434	1539	4346	29	1539	2931	103
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.03	0.07	0.17	0.15	0.06	0.36	0.36	0.03	0.28	0.28
Crit Moves:					****				****	****		
Green/Cycle:	0.33	0.33	0.46	0.33	0.33	0.33	0.17	0.36	0.36	0.14	0.33	0.33
Volume/Cap:	0.14	0.14	0.05	0.22	0.52	0.47	0.35	0.99	0.99	0.22	0.86	0.86
Uniform Del:	26.0	26.0	16.2	26.8	30.0	29.4	40.1	34.7	34.7	42.3	34.7	34.7
IncremntDel:	0.6	0.6	0.2	1.4	1.4	1.0	3.6	19.3	19.3	2.3	9.7	9.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.6	26.6	16.4	28.2	31.4	30.4	43.7	54.0	54.0	44.6	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.6	26.6	16.4	28.2	31.4	30.4	43.7	54.0	54.0	44.6	44.4	44.4
LOS by Move:	C	C	B	C	C	C	D	D	D	D	D	D
HCM2kAvgQ:	2	2	1	2	8	6	3	25	26	1	14	14

Note: Queue reported is the number of cars per lane.

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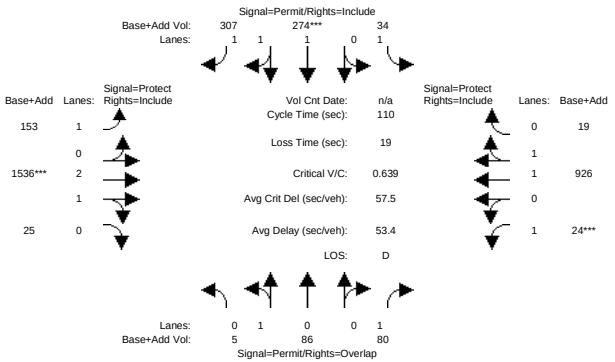
Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	38	38	38	38	38	38	15	38	38	15	38	38
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	5	77	62	34	263	307	153	1536	25	24	926	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	77	62	34	263	307	153	1536	25	24	926	19
Added Vol:	0	9	18	0	11	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	86	80	34	274	307	153	1536	25	24	926	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	5	89	82	35	282	316	158	1584	26	25	955	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	89	82	35	282	316	158	1584	26	25	955	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	89	82	35	282	316	158	1584	26	25	955	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.84	0.59	0.50	0.75	0.62	0.81	0.79	0.77	0.81	0.81	0.80
Lanes:	0.06	0.94	1.00	1.00	1.28	1.72	1.00	2.95	0.05	1.00	1.96	0.04
Final Sat.:	87	1503	1120	948	1817	2036	1539	4430	72	1539	3008	62
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.07	0.04	0.16	0.16	0.10	0.36	0.36	0.02	0.32	0.32
Crit Moves:					****				****	****		
Green/Cycle:	0.35	0.35	0.48	0.35	0.35	0.35	0.14	0.35	0.35	0.14	0.35	0.35
Volume/Cap:	0.17	0.17	0.15	0.11	0.45	0.45	0.75	1.03	1.03	0.12	0.92	0.92
Uniform Del:	25.0	25.0	15.9	24.5	27.9	27.9	45.7	36.0	36.0	41.7	34.5	34.5
IncremntDel:	0.7	0.7	0.6	0.7	1.1	1.1	21.7	32.3	32.3	1.1	13.9	13.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.7	25.7	16.5	25.1	29.0	29.0	67.4	68.3	68.3	42.8	48.4	48.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.7	25.7	16.5	25.1	29.0	29.0	67.4	68.3	68.3	42.8	48.4	48.4
LOS by Move:	C	C	B	C	C	C	E	E	E	D	D	D
HCM2kAvgQ:	2	2	2	1	6	5	7	28	27	1	16	16

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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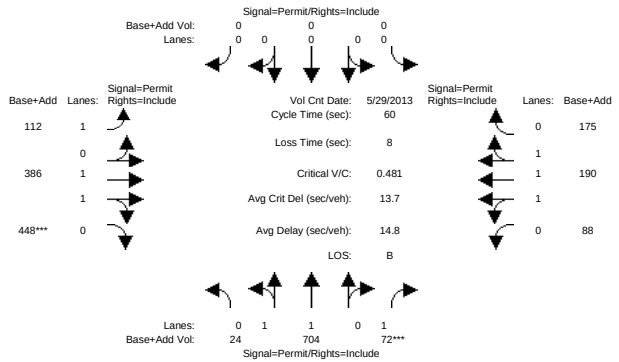
Intersection #26: 7th St/Brannan



Street Name: 7th Street Brannan Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	21	0	21	0	0	31	31	31	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am												
Base Vol:	24	695	71	0	0	0	112	386	336	72	190	175
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	695	71	0	0	0	112	386	336	72	190	175
Added Vol:	0	9	1	0	0	0	0	0	112	16	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	704	72	0	0	0	112	386	448	88	190	175
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	762	78	0	0	0	121	418	485	95	206	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	762	78	0	0	0	121	418	485	95	206	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	762	78	0	0	0	121	418	485	95	206	189
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.39	0.74	0.73	0.51	0.51	0.51
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.63	1.37	1.00
Final Sat.:	101	2965	1201	0	0	0	749	1415	1378	618	1335	966
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.06	0.00	0.00	0.00	0.16	0.30	0.35	0.15	0.15	0.20
Crit Moves:			****						****			
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.73	0.73	0.19	0.00	0.00	0.00	0.31	0.57	0.68	0.30	0.30	0.38
Uniform Del:	17.1	17.1	13.6	0.0	0.0	0.0	8.4	9.9	10.8	8.3	8.3	8.7
IncremntDel:	4.5	4.5	1.0	0.0	0.0	0.0	2.1	1.5	2.8	0.5	0.5	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	21.5	21.5	14.5	0.0	0.0	0.0	10.5	11.5	13.7	8.7	8.7	9.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.5	21.5	14.5	0.0	0.0	0.0	10.5	11.5	13.7	8.7	8.7	9.6
LOS by Move:	C	C	B	A	A	A	B	B	B	A	A	A
HCM2kAvgQ:	8	8	1	0	0	0	2	6	8	2	2	3

Note: Queue reported is the number of cars per lane.

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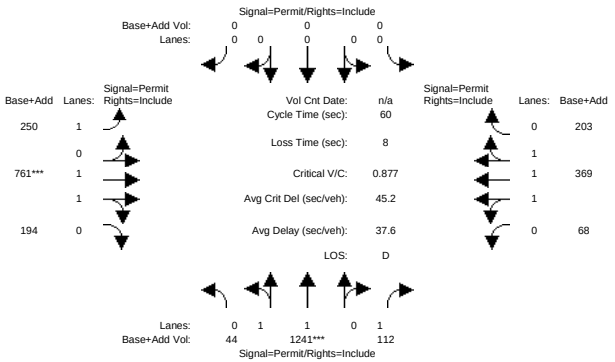
Intersection #26: 7th St/Brannan



Street Name: 7th Street Brannan Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	44	1185	99	0	0	0	250	761	183	67	369	203
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	1185	99	0	0	0	250	761	183	67	369	203
Added Vol:	0	56	13	0	0	0	0	0	11	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	1241	112	0	0	0	250	761	194	68	369	203
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	45	1274	115	0	0	0	257	781	199	70	379	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	1274	115	0	0	0	257	781	199	70	379	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	1274	115	0	0	0	257	781	199	70	379	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.32	0.79	0.78	0.55	0.55	0.54
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.59	0.41	0.32	1.72	0.96
Final Sat.:	105	2959	1202	0	0	0	616	2375	605	330	1790	985
Capacity Analysis Module:												
Vol/Sat:	0.43	0.43	0.10	0.00	0.00	0.00	0.42	0.33	0.33	0.21	0.21	0.21
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.00	0.00	0.00	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	1.08	1.08	0.24	0.00	0.00	0.00	0.89	0.71	0.71	0.45	0.45	0.45
Uniform Del:	18.0	18.0	11.9	0.0	0.0	0.0	14.6	12.7	12.7	10.8	10.8	10.8
IncremntDel:	49.0	49.0	1.2	0.0	0.0	0.0	31.6	3.0	3.0	1.0	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	67.0	67.0	13.1	0.0	0.0	0.0	46.2	15.7	15.7	11.8	11.8	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.0	67.0	13.1	0.0	0.0	0.0	46.2	15.7	15.7	11.8	11.8	11.8
LOS by Move:	E	E	B	A	A	A	D	B	B	B	B	B
HCM2kAvgQ:	24	24	2	0	0	0	8	9	9	4	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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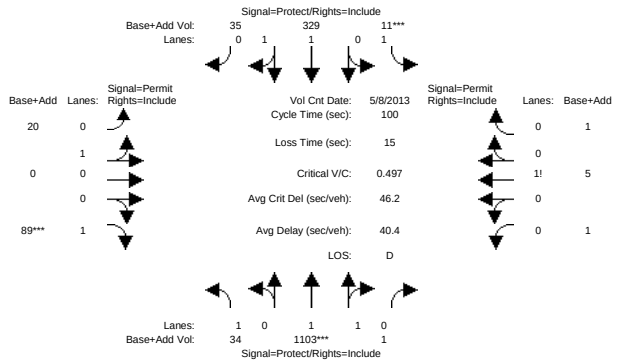
2015 Plus MB Phase One AM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	36	36	17	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	34	1091	1	11	295	34	19	0	56	1	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	1091	1	11	295	34	19	0	56	1	5	1
Added Vol:	0	12	0	0	34	1	1	0	33	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	1103	1	11	329	35	20	0	89	1	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	36	1161	1	12	346	37	21	0	94	1	5	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1161	1	12	346	37	21	0	94	1	5	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	1161	1	12	346	37	21	0	94	1	5	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.79	0.67	1.00	0.69	0.82	0.82	0.82
Lanes:	1.00	1.99	0.01	1.00	1.81	0.19	1.00	0.00	1.00	0.14	0.72	0.14
Final Sat.:	1539	3383	3	1539	2742	292	1272	0	1313	223	1117	223
Capacity Analysis Module:												
Vol/Sat:	0.02	0.34	0.34	0.01	0.13	0.13	0.02	0.00	0.07	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.15	0.36	0.36	0.17	0.38	0.38	0.32	0.00	0.32	0.32	0.32	0.32
Volume/Cap:	0.15	0.95	0.95	0.04	0.33	0.33	0.05	0.00	0.22	0.01	0.01	0.01
Uniform Del:	37.0	31.2	31.2	34.7	22.0	22.0	23.5	0.0	24.9	23.2	23.2	23.2
IncremntDel:	1.4	16.8	16.8	0.3	0.8	0.8	0.2	0.0	1.2	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	47.9	47.9	35.0	22.8	22.8	23.8	0.0	26.1	23.3	23.3	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	47.9	47.9	35.0	22.8	22.8	23.8	0.0	26.1	23.3	23.3	23.3
LOS by Move:	D	D	D	D	C	C	C	A	C	C	C	C
HCM2kAvgQ:	1	19	17	0	4	4	0	0	2	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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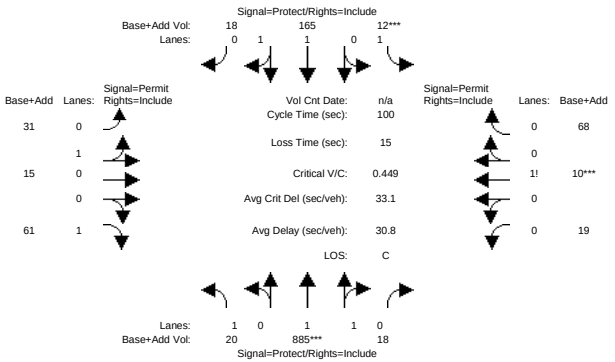
2015 Plus MB Phase One PM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	16	38	38	32	32	32	32	32	32
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	821	18	12	161	18	23	15	57	19	10	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	821	18	12	161	18	23	15	57	19	10	68
Added Vol:	0	64	0	0	4	0	8	0	4	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	885	18	12	165	18	31	15	61	19	10	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	932	19	13	174	19	33	16	64	20	11	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	932	19	13	174	19	33	16	64	20	11	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	932	19	13	174	19	33	16	64	20	11	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.80	0.79	0.65	0.69	0.65	0.72	0.73	0.68
Lanes:	1.00	1.96	0.04	1.00	1.80	0.20	0.69	0.31	1.00	0.19	0.10	0.71
Final Sat.:	1539	3156	64	1539	2730	298	848	410	1226	256	135	918
Capacity Analysis Module:												
Vol/Sat:	0.01	0.30	0.30	0.01	0.06	0.06	0.04	0.04	0.05	0.08	0.08	0.08
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.37	0.37	0.16	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.09	0.80	0.80	0.05	0.17	0.17	0.12	0.12	0.16	0.24	0.24	0.24
Uniform Del:	36.6	28.2	28.2	35.6	20.5	20.5	24.0	24.0	24.4	25.1	25.1	25.1
IncremntDel:	0.8	5.6	5.6	0.4	0.3	0.3	0.6	0.6	0.9	1.4	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.4	33.8	33.8	36.0	20.8	20.8	24.7	24.7	25.3	26.5	26.5	26.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	33.8	33.8	36.0	20.8	20.8	24.7	24.7	25.3	26.5	26.5	26.5
LOS by Move:	D	C	C	C	D	C	C	C	C	C	C	C
HCM2kAvgQ:	1	14	13	0	2	2	1	1	1	3	3	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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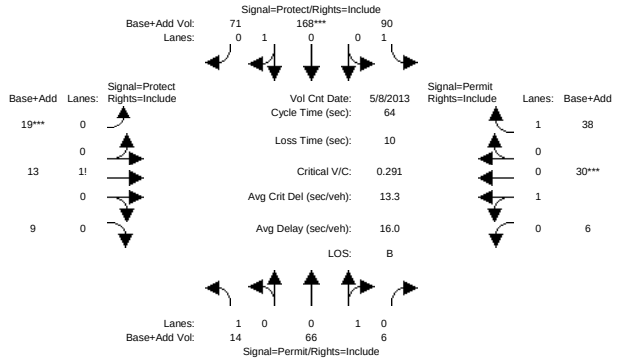
2015 Plus MB Phase One AM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	21	21	9	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	14	61	6	57	130	37	19	12	9	6	29	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	61	6	57	130	37	19	12	9	6	29	38
Added Vol:	0	5	0	33	38	34	0	1	0	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	66	6	90	168	71	19	13	9	6	30	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	16	78	7	106	198	84	22	15	11	7	35	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	78	7	106	198	84	22	15	11	7	35	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	78	7	106	198	84	22	15	11	7	35	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.43	0.67	0.67	0.81	0.81	0.80	0.71	0.71	0.69	0.83	0.84	0.68
Lanes:	1.00	0.92	0.08	1.00	0.70	0.30	0.46	0.32	0.22	0.17	0.83	1.00
Final Sat.:	808	1173	107	1539	1083	458	620	424	294	266	1331	1298
Capacity Analysis Module:												
Vol/Sat:	0.02	0.07	0.07	0.07	0.18	0.18	0.04	0.04	0.04	0.03	0.03	0.03
Crit Moves:					****			****			****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.06	0.20	0.20	0.31	0.33	0.33	0.26	0.12	0.12	0.17	0.17	0.22
Uniform Del:	14.7	15.5	15.5	21.0	8.0	8.0	24.5	16.4	16.4	23.4	23.4	23.6
IncremntDel:	0.5	1.1	1.1	2.4	1.1	1.1	3.3	0.6	0.6	1.5	1.5	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.2	16.6	16.6	23.4	9.1	9.1	27.8	17.0	17.0	24.9	24.9	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.2	16.6	16.6	23.4	9.1	9.1	27.8	17.0	17.0	24.9	24.9	26.1
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	1	1	2	3	3	1	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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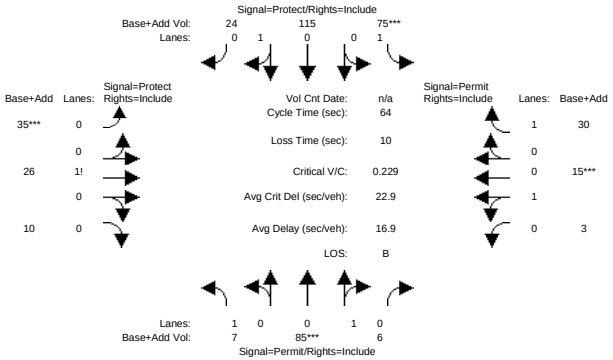
Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	21	21	21	14	35	35	9	19	19	10	10	10
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	7	58	4	71	111	20	35	20	10	3	15	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	58	4	71	111	20	35	20	10	3	15	30
Added Vol:	0	27	2	4	4	4	0	6	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	85	6	75	115	24	35	26	10	3	15	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	7	89	6	79	121	25	37	27	11	3	16	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	89	6	79	121	25	37	27	11	3	16	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	89	6	79	121	25	37	27	11	3	16	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.42	0.68	0.66	0.81	0.83	0.80	0.71	0.71	0.68	0.80	0.85	0.65
Lanes:	1.00	0.93	0.07	1.00	0.82	0.18	0.49	0.36	0.15	0.17	0.83	1.00
Final Sat.:	799	1197	84	1539	1298	271	664	493	190	265	1327	1236
Capacity Analysis Module:												
Vol/Sat:	0.01	0.07	0.07	0.05	0.09	0.09	0.06	0.06	0.06	0.01	0.01	0.03
Crit Moves:		****			****			****			****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.03	0.23	0.23	0.23	0.17	0.17	0.39	0.19	0.19	0.08	0.08	0.16
Uniform Del:	14.6	15.6	15.6	20.6	7.2	7.2	25.0	16.7	16.7	23.1	23.1	23.4
IncremntDel:	0.2	1.3	1.3	1.6	0.4	0.4	6.1	1.0	1.0	0.6	0.6	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.8	16.9	16.9	22.2	7.7	7.7	31.1	17.8	17.8	23.6	23.6	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	16.9	16.9	22.2	7.7	7.7	31.1	17.8	17.8	23.6	23.6	25.2
LOS by Move:	B	B	B	C	A	A	C	B	B	C	C	C
HCM2kAvgQ:	0	2	2	1	1	1	1	1	0	0	0	1

Note: Queue reported is the number of cars per lane.

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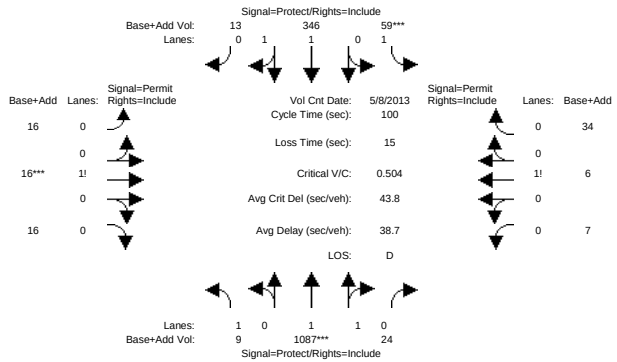
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One AM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	9	1076	24	59	280	12	16	16	16	7	6	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	1076	24	59	280	12	16	16	16	7	6	34
Added Vol:	0	11	0	0	66	1	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	1087	24	59	346	13	16	16	16	7	6	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	1144	25	62	364	14	17	17	17	7	6	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1144	25	62	364	14	17	17	17	7	6	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1144	25	62	364	14	17	17	17	7	6	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.81	0.80	0.65	0.66	0.65	0.74	0.75	0.72
Lanes:	1.00	1.95	0.05	1.00	1.93	0.07	0.33	0.33	0.34	0.15	0.12	0.73
Final Sat.:	1539	3297	73	1539	2952	111	413	413	413	206	177	1002
Capacity Analysis Module:												
Vol/Sat:	0.01	0.35	0.35	0.04	0.12	0.12	0.04	0.04	0.04	0.04	0.04	0.04
Crit Moves:		****		****				****				
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.04	0.94	0.94	0.27	0.33	0.33	0.12	0.12	0.12	0.11	0.11	0.11
Uniform Del:	36.3	30.4	30.4	37.6	22.6	22.6	23.4	23.4	23.4	23.3	23.3	23.3
IncremntDel:	0.3	14.4	14.4	2.8	0.8	0.8	0.6	0.6	0.6	0.5	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.7	44.8	44.8	40.5	23.4	23.4	24.0	24.0	24.0	23.8	23.8	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	44.8	44.8	40.5	23.4	23.4	24.0	24.0	24.0	23.8	23.8	23.8
LOS by Move:	D	D	D	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	23	21	2	4	4	1	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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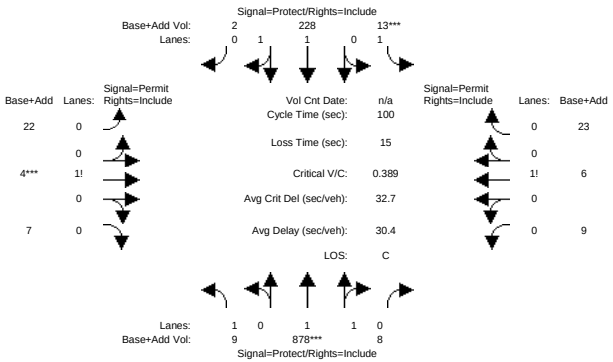
Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	37	37	15	37	37	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	9	817	8	13	221	2	19	4	7	9	6	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	817	8	13	221	2	19	4	7	9	6	23
Added Vol:	0	61	0	0	7	0	3	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	878	8	13	228	2	22	4	7	9	6	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	924	8	14	240	2	23	4	7	9	6	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	924	8	14	240	2	23	4	7	9	6	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	924	8	14	240	2	23	4	7	9	6	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.81	0.55	0.62	0.59	0.72	0.75	0.66
Lanes:	1.00	1.98	0.02	1.00	1.98	0.02	0.69	0.11	0.20	0.23	0.14	0.63
Final Sat.:	1539	3199	29	1539	3049	27	714	130	227	308	206	788
Capacity Analysis Module:												
Vol/Sat:	0.01	0.29	0.29	0.01	0.08	0.08	0.03	0.03	0.03	0.03	0.03	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.15	0.37	0.37	0.15	0.37	0.37	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.04	0.78	0.78	0.06	0.21	0.21	0.10	0.10	0.10	0.09	0.09	0.09
Uniform Del:	36.3	27.9	27.9	36.4	21.5	21.5	23.2	23.2	23.2	23.2	23.2	23.2
IncremntDel:	0.3	5.1	5.1	0.5	0.4	0.4	0.6	0.6	0.6	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.7	33.0	33.0	36.9	22.0	22.0	23.8	23.8	23.8	23.6	23.6	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.7	33.0	33.0	36.9	22.0	22.0	23.8	23.8	23.8	23.6	23.6	23.6
LOS by Move:	D	C	C	C	D	C	C	C	C	C	C	C
HCM2kAvgQ:	0	15	14	0	3	3	1	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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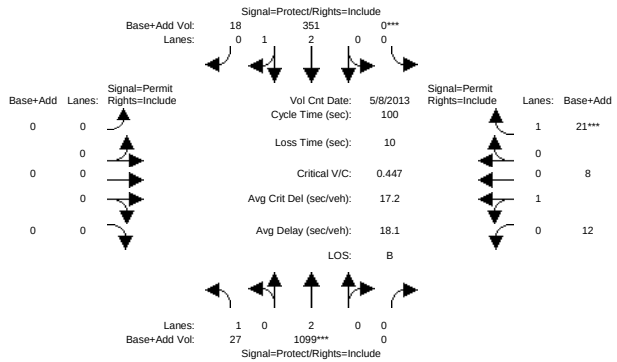
Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	27	1088	0	0	286	17	0	0	0	12	8	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	1088	0	0	286	17	0	0	0	12	8	21
Added Vol:	0	11	0	0	65	1	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	1099	0	0	351	18	0	0	0	12	8	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	29	1180	0	0	377	19	0	0	0	13	9	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	1180	0	0	377	19	0	0	0	13	9	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	29	1180	0	0	377	19	0	0	0	13	9	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.79	0.82	0.62
Lanes:	1.00	2.00	0.00	0.00	2.85	0.15	0.00	0.00	0.00	0.61	0.39	1.00
Final Sat.:	1539	3079	0	0	4178	214	0	0	0	914	609	1177
Capacity Analysis Module:												
Vol/Sat:	0.02	0.38	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.01	0.01	0.02
Crit Moves:		****		****								****
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.12	0.67	0.00	0.00	0.22	0.22	0.00	0.00	0.00	0.04	0.04	0.06
Uniform Del:	36.5	15.0	0.0	0.0	18.7	18.7	0.0	0.0	0.0	22.8	22.8	22.9
IncremntDel:	1.1	2.1	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.2	0.2	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	37.6	17.1	0.0	0.0	19.0	19.0	0.0	0.0	0.0	22.9	22.9	23.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.6	17.1	0.0	0.0	19.0	19.0	0.0	0.0	0.0	22.9	22.9	23.2
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	14	0	0	3	3	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

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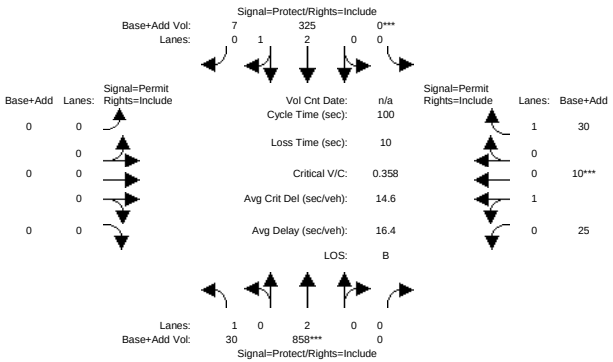
Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	30	797	0	0	318	7	0	0	0	25	10	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	797	0	0	318	7	0	0	0	25	10	30
Added Vol:	0	61	0	0	7	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	858	0	0	325	7	0	0	0	25	10	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	32	913	0	0	346	7	0	0	0	27	11	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	913	0	0	346	7	0	0	0	27	11	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	913	0	0	346	7	0	0	0	27	11	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.75	0.80	0.60
Lanes:	1.00	2.00	0.00	0.00	2.94	0.06	0.00	0.00	0.00	0.73	0.27	1.00
Final Sat.:	1539	3079	0	0	4317	93	0	0	0	1039	416	1147
Capacity Analysis Module:												
Vol/Sat:	0.02	0.30	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.03	0.03	0.03
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.14	0.52	0.00	0.00	0.19	0.19	0.00	0.00	0.00	0.08	0.08	0.08
Uniform Del:	36.6	13.1	0.0	0.0	18.5	18.5	0.0	0.0	0.0	23.0	23.0	23.1
IncremntDel:	1.2	1.1	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.3	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	37.8	14.2	0.0	0.0	18.7	18.7	0.0	0.0	0.0	23.3	23.3	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.8	14.2	0.0	0.0	18.7	18.7	0.0	0.0	0.0	23.3	23.3	23.5
LOS by Move:	D	B	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	9	0	0	3	3	0	0	0	1	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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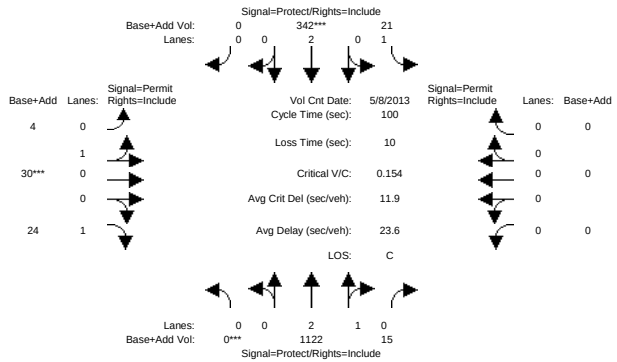
Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	0	1111	15	21	277	0	4	30	24	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1111	15	21	277	0	4	30	24	0	0	0
Added Vol:	0	11	0	0	65	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1122	15	21	342	0	4	30	24	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1179	16	22	359	0	4	32	25	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1179	16	22	359	0	4	32	25	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1179	16	22	359	0	4	32	25	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.84	0.84	0.62	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.12	0.88	1.00	0.00	0.00	0.00
Final Sat.:	0	4357	58	1539	3079	0	189	1415	1183	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.01	0.12	0.00	0.02	0.02	0.02	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.68	0.68	0.08	0.20	0.00	0.07	0.07	0.06	0.00	0.00	0.00
Uniform Del:	0.0	25.0	25.0	34.6	10.5	0.0	23.0	23.0	22.9	0.0	0.0	0.0
IncremntDel:	0.0	2.2	2.2	0.6	0.3	0.0	0.2	0.2	0.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	27.2	27.2	35.2	10.7	0.0	23.2	23.2	23.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.2	27.2	35.2	10.7	0.0	23.2	23.2	23.3	0.0	0.0	0.0
LOS by Move:	A	C	C	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	12	12	1	3	0	1	1	1	0	0	0

Note: Queue reported is the number of cars per lane.

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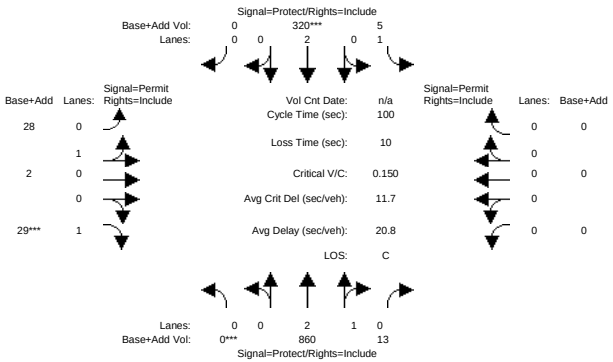
Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	804	13	5	313	0	23	2	29	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	804	13	5	313	0	23	2	29	0	0	0
Added Vol:	0	56	0	0	7	0	5	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	860	13	5	320	0	28	2	29	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	905	14	5	337	0	29	2	31	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	905	14	5	337	0	29	2	31	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	905	14	5	337	0	29	2	31	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.76	0.79	0.62	1.00	1.00	1.00
Lanes:	0.00	2.96	0.04	1.00	2.00	0.00	0.94	0.06	1.00	0.00	0.00	0.00
Final Sat.:	0	4349	66	1539	3079	0	1349	96	1178	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.00	0.11	0.00	0.02	0.02	0.03	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.00	0.40	0.40	0.17	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.53	0.53	0.02	0.19	0.00	0.07	0.07	0.08	0.00	0.00	0.00
Uniform Del:	0.0	23.1	23.1	34.2	10.4	0.0	22.9	22.9	23.0	0.0	0.0	0.0
IncremntDel:	0.0	1.1	1.1	0.1	0.2	0.0	0.3	0.3	0.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	24.2	24.2	34.3	10.6	0.0	23.2	23.2	23.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.2	24.2	34.3	10.6	0.0	23.2	23.2	23.4	0.0	0.0	0.0
LOS by Move:	A	C	C	C	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	8	8	0	3	0	1	1	1	0	0	0

Note: Queue reported is the number of cars per lane.

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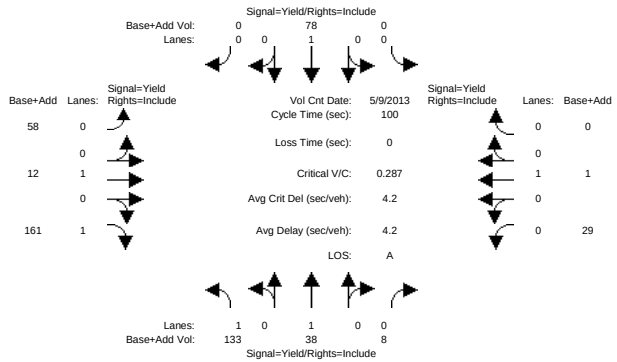
Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	120	37	8	0	43	0	58	0	82	24	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	37	8	0	43	0	58	0	82	24	0	0
Added Vol:	13	1	0	0	35	0	0	12	79	5	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	38	8	0	78	0	58	12	161	29	1	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	185	53	11	0	108	0	81	17	224	40	1	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	53	11	0	108	0	81	17	224	40	1	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	53	11	0	108	0	81	17	224	40	1	0
PCE Module:												
AutoPCE:	185	53	11	0	108	0	81	17	224	40	1	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	185	53	11	0	108	0	81	17	224	40	1	0
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	97			226			149			318		
MaxVolume:	1147			1078			1120			1028		
PedVolume:	0			0			0			0		
AdjMaxVol:	1147			1078			1120			1028		
ApproachVol:	249			108			321			42		
ApproachV/C:	0.22			0.10			0.29			0.04		
ApproachDel:	4.0			3.7			4.5			3.6		
ApproachLOS:	A			A			A			A		
Queue:	0.8			0.3			1.2			0.1		

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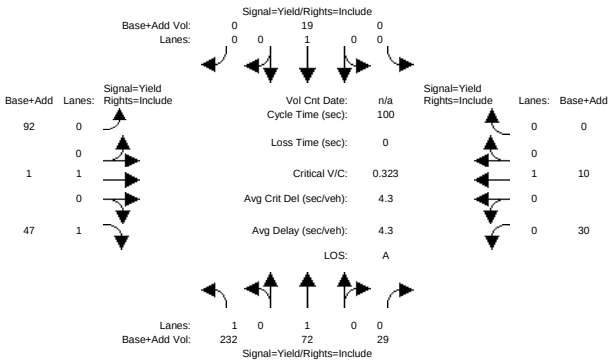
Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	158	65	24	0	15	0	92	0	39	30	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	65	24	0	15	0	92	0	39	30	0	0
Added Vol:	74	7	5	0	4	0	0	1	8	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	232	72	29	0	19	0	92	1	47	30	10	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	258	80	32	0	21	0	102	1	52	33	11	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	258	80	32	0	21	0	102	1	52	33	11	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	258	80	32	0	21	0	102	1	52	33	11	0
PCE Module:												
AutoPCE:	258	80	32	0	21	0	102	1	52	33	11	0
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	258	80	32	0	21	0	102	1	52	33	11	0
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	103			302			54			440		
MaxVolume:	1144			1037			1171			962		
PedVolume:	0			0			0			0		
AdjMaxVol:	1144			1037			1171			962		
ApproachVol:	370			21			156			44		
ApproachV/C:	0.32			0.02			0.13			0.05		
ApproachDel:	4.6			3.5			3.5			3.9		
ApproachLOS:	A			A			A			A		
Queue:	1.4			0.1			0.5			0.1		

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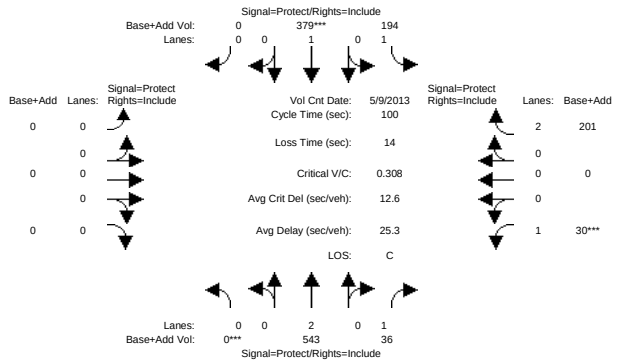
Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	0	538	30	109	336	0	0	0	0	29	0	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	538	30	109	336	0	0	0	0	29	0	188
Added Vol:	0	5	6	85	43	0	0	0	0	1	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	543	36	194	379	0	0	0	0	30	0	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	567	38	203	396	0	0	0	0	31	0	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	567	38	203	396	0	0	0	0	31	0	210
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	567	38	203	396	0	0	0	0	31	0	210
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.57	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.53
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	1079	1539	1620	0	0	0	0	1539	0	2000
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.03	0.13	0.24	0.00	0.00	0.00	0.00	0.02	0.00	0.10
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.44	0.44	0.17	0.61	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.42	0.08	0.77	0.40	0.00	0.00	0.00	0.00	0.08	0.00	0.42
Uniform Del:	0.0	19.3	16.3	39.6	10.1	0.0	0.0	0.0	0.0	28.7	0.0	31.4
IncremntDel:	0.0	1.0	0.3	19.3	1.2	0.0	0.0	0.0	0.0	0.4	0.0	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	20.2	16.6	58.9	11.3	0.0	0.0	0.0	0.0	29.1	0.0	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.2	16.6	58.9	11.3	0.0	0.0	0.0	0.0	29.1	0.0	34.0
LOS by Move:	A	C	B	E	B	A	A	A	A	C	A	C
HCM2kAvgQ:	0	6	1	8	6	0	0	0	0	1	0	3

Note: Queue reported is the number of cars per lane.

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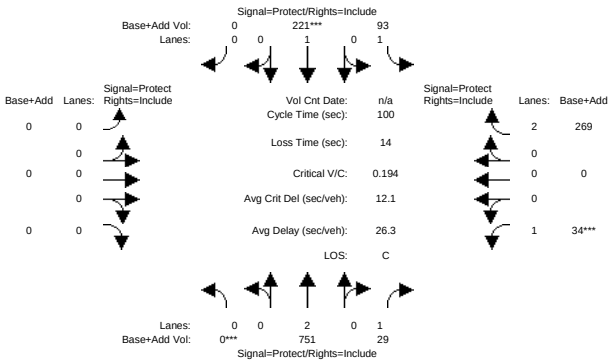
Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	714	29	85	217	0	0	0	0	26	0	193
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	714	29	85	217	0	0	0	0	26	0	193
Added Vol:	0	37	0	8	4	0	0	0	0	8	0	76
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	751	29	93	221	0	0	0	0	34	0	269
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	791	31	98	233	0	0	0	0	36	0	283
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	791	31	98	233	0	0	0	0	36	0	283
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	791	31	98	233	0	0	0	0	36	0	283
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.41	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.42
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	784	1539	1620	0	0	0	0	1539	0	1580
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.04	0.06	0.14	0.00	0.00	0.00	0.00	0.02	0.00	0.18
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.44	0.44	0.17	0.61	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.58	0.09	0.37	0.24	0.00	0.00	0.00	0.00	0.09	0.00	0.72
Uniform Del:	0.0	21.2	16.4	36.7	8.9	0.0	0.0	0.0	0.0	28.8	0.0	34.3
IncremntDel:	0.0	1.9	0.5	4.0	0.6	0.0	0.0	0.0	0.0	0.5	0.0	10.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	23.0	16.9	40.7	9.4	0.0	0.0	0.0	0.0	29.3	0.0	44.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	23.0	16.9	40.7	9.4	0.0	0.0	0.0	0.0	29.3	0.0	44.9
LOS by Move:	A	C	B	D	A	A	A	A	A	C	A	D
HCM2kAvgQ:	0	10	1	3	3	0	0	0	0	1	0	6

Note: Queue reported is the number of cars per lane.

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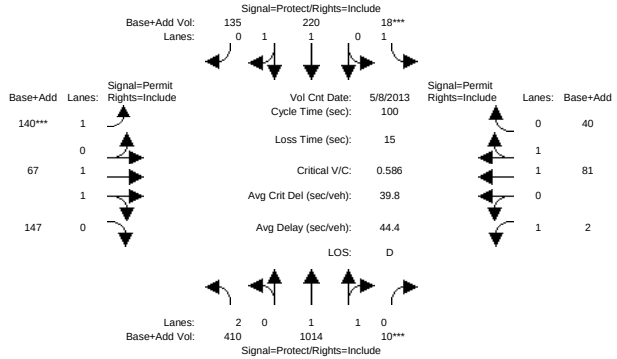
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One AM

Intersection #34: 16th/3rd




```
Street Name:            3rd Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   14   38   38    12   36   36    35   35   35    35   35   35
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.5  5.5  5.5   5.5  5.5  5.5
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am
Base Vol:     370 1014   10    18  214   74   130   67  146     2   81   40
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  370 1014   10    18  214   74   130   67  146     2   81   40
Added Vol:     40    0    0     0    6   61    10    0    1     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  410 1014   10    18  220  135   140   67  147     2   81   40
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96
PHF Volume:   426 1054   10    19  229  140   146   70  153     2   84   42
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  426 1054   10    19  229  140   146   70  153     2   84   42
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  426 1054   10    19  229  140   146   70  153     2   84   42
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.79 0.81 0.81  0.81 0.76 0.75  0.55 0.68 0.66  0.50 0.72 0.71
Lanes:       2.00 1.98 0.02  1.00 1.23 0.77  1.00 1.00 1.00  1.00 1.33 0.67
Final Sat.:  2987 3046   30  1539 1788 1097  1042 1295 1256   951 1827  902
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.35 0.35  0.01 0.13 0.13  0.14 0.05 0.12  0.00 0.05 0.05
Crit Moves:           ****  ****            ****
Green/Cycle: 0.14 0.38 0.38  0.12 0.36 0.36  0.35 0.35 0.35  0.35 0.35 0.35
Volume/Cap:  1.02 0.91 0.91  0.10 0.36 0.36  0.40 0.15 0.35  0.01 0.13 0.13
Uniform Del: 43.0 29.4 29.4  39.2 23.5 23.5  24.6 22.3 24.0  21.2 22.1 22.1
IncremntDel: 49.0 12.1 12.1   1.1  1.0  1.0   3.2  0.2  1.5   0.0  0.3  0.3
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   92.0 41.5 41.5  40.3 24.4 24.4  27.8 22.6 25.5  21.2 22.4 22.4
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  92.0 41.5 41.5  40.3 24.4 24.4  27.8 22.6 25.5  21.2 22.4 22.4
LOS by Move:    F    D    D     D    C    C     C    C    C     C    C    C
HCM2kAvgQ:      8   16   16     1    5    4     3    2    4     0    1    1
Note: Queue reported is the number of cars per lane.
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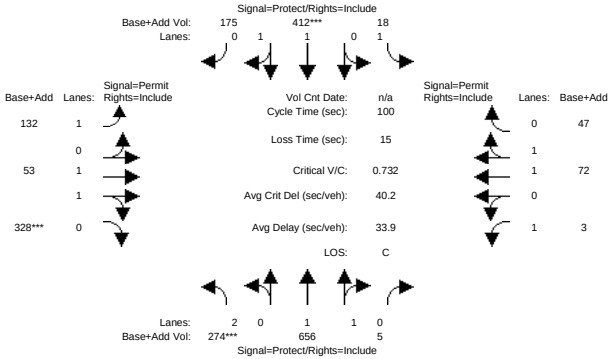
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One PM

Intersection #34: 16th/3rd




```
Street Name:            3rd Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   14   38   38    12   36   36    35   35   35    35   35   35
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.5  5.5  5.5   5.5  5.5  5.5
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     271  654    5    18  371  147    79   53  319     3   72   47
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  271  654    5    18  371  147    79   53  319     3   72   47
Added Vol:      3    2    0     0   41   28    53    0    9     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  274  656    5    18  412  175   132   53  328     3   72   47
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93  0.93 0.93 0.93
PHF Volume:   295  705    5    19  443  188   142   57  353     3   77   51
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  295  705    5    19  443  188   142   57  353     3   77   51
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  295  705    5    19  443  188   142   57  353     3   77   51
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.79 0.81 0.81  0.81 0.77 0.75  0.53 0.66 0.61  0.37 0.71 0.69
Lanes:       2.00 1.98 0.02  1.00 1.39 0.61  1.00 1.00 1.00  1.00 1.19 0.81
Final Sat.:  2987 3053   23  1539 2046  869  1002 1257 1150   700 1617 1056
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.23 0.23  0.01 0.22 0.22  0.14 0.05 0.31  0.00 0.05 0.05
Crit Moves:  ****            ****            ****
Green/Cycle: 0.14 0.38 0.38  0.12 0.36 0.36  0.35 0.35 0.35  0.35 0.35 0.35
Volume/Cap:  0.70 0.61 0.61  0.10 0.60 0.60  0.40 0.13 0.88  0.01 0.14 0.14
Uniform Del: 41.0 25.0 25.0  39.2 26.1 26.1  24.6 22.1 30.5  21.2 22.2 22.2
IncremntDel:  9.6  2.4  2.4   1.1  2.6  2.6   3.4  0.1 20.0   0.1  0.3  0.3
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   50.6 27.4 27.4  40.4 28.7 28.7  28.1 22.2 50.5  21.3 22.5 22.5
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  50.6 27.4 27.4  40.4 28.7 28.7  28.1 22.2 50.5  21.3 22.5 22.5
LOS by Move:    D    C    C     D    C    C     C    C    D     C    C    C
HCM2kAvgQ:      5    9    9     1    9    9     3    1   13     0    1    1
Note: Queue reported is the number of cars per lane.
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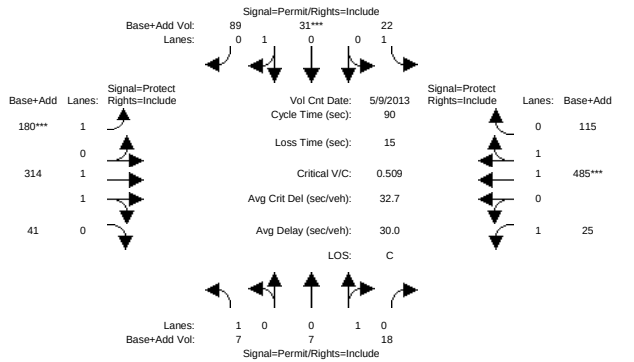
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One AM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	30	30	30	17	30	30	15	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	4	2	17	22	3	87	107	304	22	21	416	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	2	17	22	3	87	107	304	22	21	416	87
Added Vol:	3	5	1	0	28	2	73	10	19	4	69	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	7	18	22	31	89	180	314	41	25	485	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	7	7	19	23	33	93	189	330	43	26	509	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	7	19	23	33	93	189	330	43	26	509	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	7	19	23	33	93	189	330	43	26	509	121
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.55	0.76	0.74	0.61	0.76	0.73	0.81	0.75	0.74	0.81	0.79	0.77
Lanes:	1.00	0.27	0.73	1.00	0.25	0.75	1.00	1.77	0.23	1.00	1.61	0.39
Final Sat.:	1048	395	1016	1158	363	1042	1539	2507	327	1539	2409	571
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.02	0.02	0.09	0.09	0.12	0.13	0.13	0.02	0.21	0.21
Crit Moves:					****		****				****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.19	0.33	0.33	0.17	0.31	0.31
Volume/Cap:	0.02	0.06	0.06	0.06	0.27	0.27	0.65	0.39	0.39	0.10	0.68	0.68
Uniform Del:	20.1	20.4	20.4	20.4	22.0	22.0	33.8	23.0	23.0	31.8	27.1	27.1
IncremntDel:	0.1	0.2	0.2	0.3	1.4	1.4	10.8	1.2	1.2	0.8	4.0	4.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.3	20.6	20.6	20.7	23.4	23.4	44.5	24.3	24.3	32.6	31.1	31.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.3	20.6	20.6	20.7	23.4	23.4	44.5	24.3	24.3	32.6	31.1	31.1
LOS by Move:	C	C	C	C	C	C	D	C	C	C	C	C
HCM2kAvgQ:	0	1	1	0	3	3	5	4	4	1	9	9

Note: Queue reported is the number of cars per lane.

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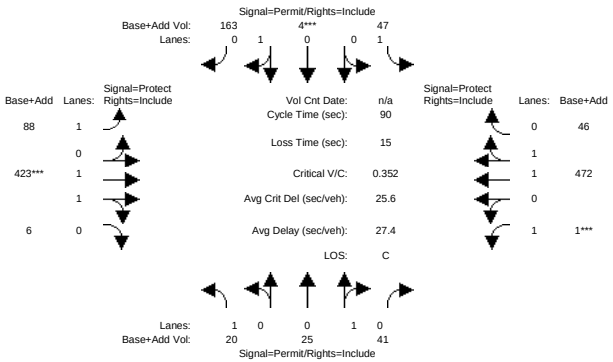
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One PM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	30	30	30	15	50	50	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	8	1	35	46	1	143	83	368	4	1	444	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	1	35	46	1	143	83	368	4	1	444	44
Added Vol:	12	24	6	1	3	20	5	55	2	0	28	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	25	41	47	4	163	88	423	6	1	472	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	22	27	45	52	4	179	97	465	7	1	519	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	27	45	52	4	179	97	465	7	1	519	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	27	45	52	4	179	97	465	7	1	519	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.45	0.77	0.75	0.57	0.73	0.69	0.81	0.76	0.76	0.81	0.80	0.80
Lanes:	1.00	0.37	0.63	1.00	0.02	0.98	1.00	1.97	0.03	1.00	1.82	0.18
Final Sat.:	853	545	893	1092	31	1280	1539	2840	40	1539	2768	270
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.05	0.05	0.14	0.14	0.06	0.16	0.16	0.00	0.19	0.19
Crit Moves:					****			****			****	
Green/Cycle:	0.27	0.27	0.27	0.27	0.27	0.27	0.20	0.45	0.45	0.14	0.39	0.39
Volume/Cap:	0.09	0.18	0.18	0.17	0.51	0.51	0.32	0.36	0.36	0.01	0.48	0.48
Uniform Del:	29.9	30.6	30.6	30.5	33.8	33.8	37.8	19.6	19.6	41.1	24.9	24.9
IncremntDel:	0.8	1.0	1.0	1.3	5.2	5.2	2.8	0.8	0.8	0.0	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.7	31.7	31.7	31.8	39.0	39.0	40.6	20.3	20.3	41.1	26.2	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.7	31.7	31.7	31.8	39.0	39.0	40.6	20.3	20.3	41.1	26.2	26.2
LOS by Move:	C	C	C	C	D	D	D	C	C	D	C	C
HCM2kAvgQ:	1	2	2	1	6	6	3	5	5	0	8	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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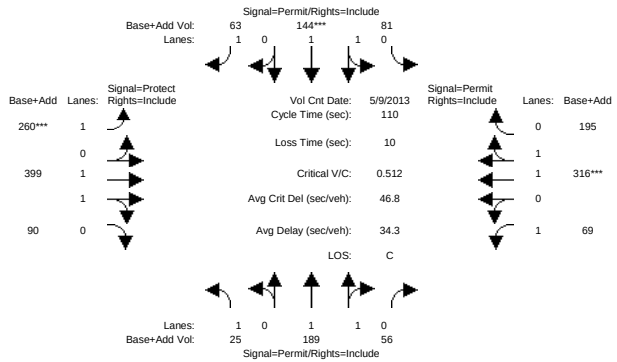
Intersection #36: 16th/Owens



Street Name: Owens St 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	45	45	45	45	45	45	20	55	55	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	17	150	16	80	58	63	249	337	5	10	311	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	150	16	80	58	63	249	337	5	10	311	186
Added Vol:	8	39	40	1	86	0	11	62	85	59	5	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	189	56	81	144	63	260	399	90	69	316	195
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	26	199	59	85	152	66	274	420	95	73	333	205
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	199	59	85	152	66	274	420	95	73	333	205
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	199	59	85	152	66	274	420	95	73	333	205
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.48	0.78	0.78	0.61	0.62	0.70	0.81	0.74	0.73	0.31	0.76	0.75
Lanes:	1.00	1.54	0.46	0.72	1.28	1.00	1.00	1.63	0.37	1.00	1.23	0.77
Final Sat.:	911	2290	679	840	1493	1327	1539	2287	516	593	1783	1100
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.10	0.10	0.05	0.18	0.18	0.18	0.12	0.19	0.19
Crit Moves:					****			****			****	
Green/Cycle:	0.41	0.41	0.41	0.41	0.41	0.41	0.18	0.50	0.50	0.32	0.32	0.32
Volume/Cap:	0.07	0.21	0.21	0.25	0.25	0.12	0.98	0.37	0.37	0.38	0.59	0.59
Uniform Del:	19.8	21.0	21.0	21.4	21.4	20.2	44.8	16.8	16.8	29.1	31.4	31.4
IncremntDel:	0.4	0.4	0.4	0.6	0.6	0.5	48.5	0.7	0.7	5.8	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.1	21.4	21.4	22.0	22.0	20.7	93.2	17.6	17.6	35.0	34.2	34.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.1	21.4	21.4	22.0	22.0	20.7	93.2	17.6	17.6	35.0	34.2	34.2
LOS by Move:	C	C	C	C	C	C	F	B	B	C	C	C
HCM2kAvgQ:	1	3	3	3	3	1	12	6	6	2	8	8

Note: Queue reported is the number of cars per lane.

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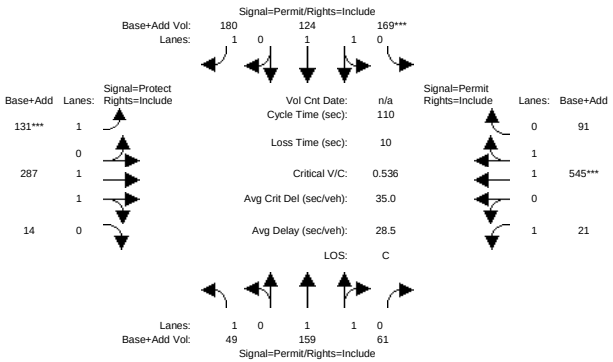
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One PM

Intersection #36: 16th/Owens



Street Name: Owens St 16th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	45	45	45	45	45	45	20	55	55	35	35	35
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	10	105	11	162	90	177	130	282	5	5	501	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	105	11	162	90	177	130	282	5	5	501	90
Added Vol:	39	54	50	7	34	3	1	5	9	16	44	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	159	61	169	124	180	131	287	14	21	545	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	52	167	64	178	131	189	138	302	15	22	574	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	167	64	178	131	189	138	302	15	22	574	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	167	64	178	131	189	138	302	15	22	574	96
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.42	0.78	0.76	0.53	0.55	0.66	0.81	0.75	0.75	0.42	0.79	0.78
Lanes:	1.00	1.44	0.56	1.00	1.00	1.00	1.00	1.91	0.09	1.00	1.71	0.29
Final Sat.:	805	2117	812	1014	1045	1259	1539	2733	133	792	2577	430
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.08	0.18	0.12	0.15	0.09	0.11	0.11	0.03	0.22	0.22
Crit Moves:					****			****			****	
Green/Cycle:	0.41	0.41	0.41	0.41	0.41	0.41	0.18	0.50	0.50	0.32	0.32	0.32
Volume/Cap:	0.16	0.19	0.19	0.43	0.31	0.37	0.49	0.22	0.22	0.09	0.70	0.70
Uniform Del:	20.5	20.9	20.9	23.3	21.9	22.6	40.4	15.5	15.5	26.3	32.9	32.9
IncremntDel:	1.0	0.4	0.4	1.9	0.8	2.0	6.1	0.4	0.4	0.7	4.2	4.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	21.5	21.2	21.2	25.2	22.7	24.6	46.5	15.8	15.8	27.0	37.1	37.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.5	21.2	21.2	25.2	22.7	24.6	46.5	15.8	15.8	27.0	37.1	37.1
LOS by Move:	C	C	C	C	C	C	D	B	B	C	D	D
HCM2kAvgQ:	1	3	3	5	3	5	4	3	3	1	11	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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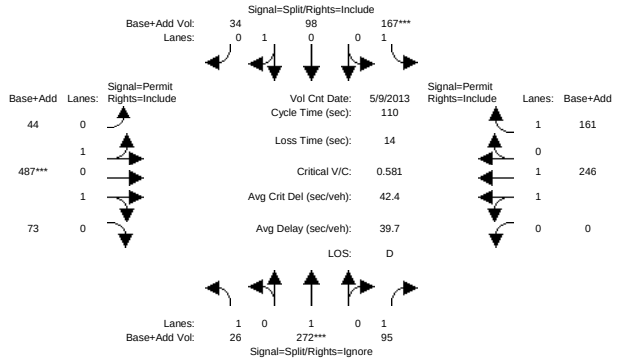
Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	26	272	95	124	98	34	38	372	73	0	237	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	272	95	124	98	34	38	372	73	0	237	156
Added Vol:	0	0	0	43	0	0	6	115	0	0	9	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	272	95	167	98	34	44	487	73	0	246	161
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	27	278	0	170	100	35	45	497	74	0	251	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	278	0	170	100	35	45	497	74	0	251	164
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	278	0	170	100	35	45	497	74	0	251	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.72	0.70	0.67	0.67	0.67	0.95	0.81	0.68
Lanes:	1.00	1.00	1.00	1.00	0.74	0.26	0.15	1.61	0.24	0.00	2.00	1.00
Final Sat.:	1539	1620	1900	1539	1007	349	186	2059	309	0	3079	1291
Capacity Analysis Module:												
Vol/Sat:	0.02	0.17	0.00	0.11	0.10	0.10	0.24	0.24	0.24	0.00	0.08	0.13
Crit Moves:		****		****				****				
Green/Cycle:	0.28	0.28	0.00	0.22	0.22	0.22	0.40	0.40	0.40	0.00	0.40	0.40
Volume/Cap:	0.06	0.61	0.00	0.50	0.45	0.45	0.61	0.61	0.61	0.00	0.21	0.32
Uniform Del:	36.8	43.6	0.0	47.7	47.1	47.1	33.6	33.6	33.6	0.0	27.7	29.2
IncremntDel:	0.3	5.9	0.0	5.2	4.8	4.8	2.7	2.7	2.7	0.0	0.4	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	37.0	49.5	0.0	52.9	51.9	51.9	36.3	36.3	36.3	0.0	28.1	30.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.0	49.5	0.0	52.9	51.9	51.9	36.3	36.3	36.3	0.0	28.1	30.8
LOS by Move:	D	D	A	D	D	D	D	D	D	A	C	C
HCM2kAvgQ:	1	11	0	7	5	5	11	12	11	0	4	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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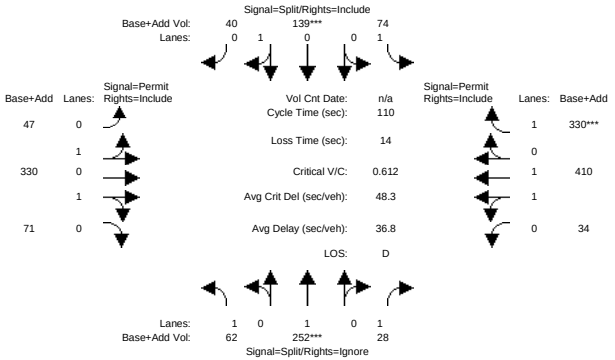
Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	31	31	31	34	34	34	34	34	65
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	62	252	28	70	139	35	47	319	71	34	361	293
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	252	28	70	139	35	47	319	71	34	361	293
Added Vol:	0	0	0	4	0	5	0	11	0	0	49	37
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	252	28	74	139	40	47	330	71	34	410	330
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	63	257	0	76	142	41	48	337	72	35	418	337
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	257	0	76	142	41	48	337	72	35	418	337
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	257	0	76	142	41	48	337	72	35	418	337
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.72	0.71	0.63	0.63	0.62	0.71	0.71	0.69
Lanes:	1.00	1.00	1.00	1.00	0.77	0.23	0.21	1.47	0.32	0.15	1.85	1.00
Final Sat.:	1539	1620	1900	1539	1061	305	250	1757	378	207	2499	1303
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.00	0.05	0.13	0.13	0.19	0.19	0.19	0.17	0.17	0.26
Crit Moves:		****			****							****
Green/Cycle:	0.21	0.21	0.00	0.22	0.22	0.22	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	0.19	0.74	0.00	0.22	0.60	0.60	0.41	0.41	0.41	0.36	0.36	0.56
Uniform Del:	45.1	51.4	0.0	44.6	49.0	49.0	24.9	24.9	24.9	24.1	24.1	27.1
IncremntDel:	1.3	13.3	0.0	1.5	8.6	8.6	1.1	1.1	1.1	0.8	0.8	3.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.4	64.6	0.0	46.1	57.6	57.6	26.0	26.0	26.0	24.9	24.9	30.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.4	64.6	0.0	46.1	57.6	57.6	26.0	26.0	26.0	24.9	24.9	30.8
LOS by Move:	D	E	A	D	E	E	C	C	C	C	C	C
HCM2kAvgQ:	2	12	0	3	8	8	7	7	7	6	6	10

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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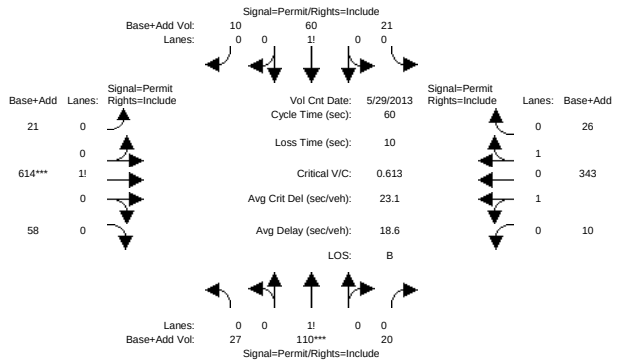
Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 29 May 2013 << 7:00-8:45am												
Base Vol:	27	110	16	17	60	10	21	558	58	9	337	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	110	16	17	60	10	21	558	58	9	337	25
Added Vol:	0	0	4	4	0	0	0	56	0	1	6	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	110	20	21	60	10	21	614	58	10	343	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	30	121	22	23	66	11	23	675	64	11	377	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	121	22	23	66	11	23	675	64	11	377	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	121	22	23	66	11	23	675	64	11	377	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.91	0.91	0.91	0.97	0.97	0.97	0.88	0.88	0.88
Lanes:	0.17	0.70	0.13	0.23	0.66	0.11	0.03	0.89	0.08	0.05	1.81	0.14
Final Sat.:	303	1235	225	397	1135	189	56	1635	154	88	3014	229
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.06	0.06	0.06	0.41	0.41	0.41	0.13	0.13	0.13
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.27	0.27	0.27	0.16	0.16	0.16	0.88	0.88	0.88	0.27	0.27	0.27
Uniform Del:	13.3	13.3	13.3	12.8	12.8	12.8	14.5	14.5	14.5	9.8	9.8	9.8
IncremntDel:	0.2	0.2	0.2	0.1	0.1	0.1	10.8	10.8	10.8	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.6	13.6	13.6	12.9	12.9	12.9	25.3	25.3	25.3	9.8	9.8	9.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.6	13.6	13.6	12.9	12.9	12.9	25.3	25.3	25.3	9.8	9.8	9.8
LOS by Move:	B	B	B	B	B	B	C	C	C	A	A	A
HCM2kAvgQ:	2	2	2	1	1	1	12	12	12	3	3	3

Note: Queue reported is the number of cars per lane.

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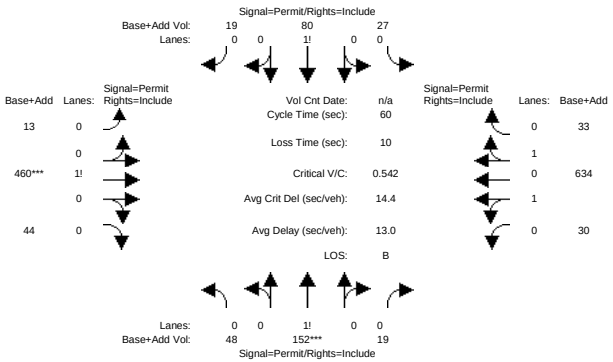
Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	48	152	19	27	80	19	13	455	44	24	602	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	152	19	27	80	19	13	455	44	24	602	30
Added Vol:	0	0	0	0	0	0	0	5	0	6	32	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	152	19	27	80	19	13	460	44	30	634	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	53	167	21	30	88	21	14	505	48	33	697	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	167	21	30	88	21	14	505	48	33	697	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	167	21	30	88	21	14	505	48	33	697	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.89	0.89	0.89	0.96	0.96	0.96	0.86	0.86	0.86
Lanes:	0.22	0.69	0.09	0.21	0.64	0.15	0.03	0.89	0.08	0.09	1.82	0.09
Final Sat.:	374	1184	148	362	1072	255	46	1627	156	141	2984	155
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.08	0.08	0.08	0.31	0.31	0.31	0.23	0.23	0.23
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.38	0.38	0.38	0.22	0.22	0.22	0.67	0.67	0.67	0.50	0.50	0.50
Uniform Del:	14.0	14.0	14.0	13.1	13.1	13.1	12.4	12.4	12.4	11.1	11.1	11.1
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	2.0	2.0	2.0	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.4	14.4	14.4	13.3	13.3	13.3	14.4	14.4	14.4	11.4	11.4	11.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.4	14.4	14.4	13.3	13.3	13.3	14.4	14.4	14.4	11.4	11.4	11.4
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	4	4	4	2	2	2	8	8	8	6	6	6

Note: Queue reported is the number of cars per lane.

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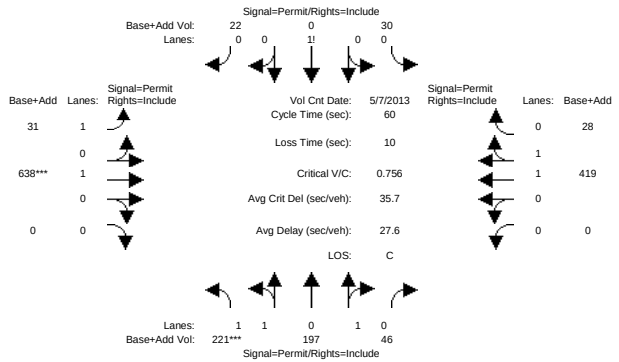
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One AM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	221	197	42	26	0	22	31	591	0	0	414	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	197	42	26	0	22	31	591	0	0	414	27
Added Vol:	0	0	4	4	0	0	0	47	0	0	5	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	221	197	46	30	0	22	31	638	0	0	419	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	238	212	49	32	0	24	33	686	0	0	451	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	212	49	32	0	24	33	686	0	0	451	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	238	212	49	32	0	24	33	686	0	0	451	30
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.61	0.60	0.53	1.00	0.54	0.41	0.75	1.00	1.00	0.75	0.75
Lanes:	1.46	1.25	0.29	0.58	0.00	0.42	1.00	1.00	0.00	0.00	1.87	0.13
Final Sat.:	1624	1448	338	588	0	431	773	1418	0	0	2681	179
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.05	0.00	0.05	0.04	0.48	0.00	0.00	0.17	0.17
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.42	0.42	0.42	0.16	0.00	0.16	0.09	1.00	0.00	0.00	0.35	0.35
Uniform Del:	14.8	14.8	14.8	13.4	0.0	13.4	8.4	15.5	0.0	0.0	9.6	9.6
IncremntDel:	1.1	1.1	1.1	0.9	0.0	0.9	0.5	34.6	0.0	0.0	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.9	15.9	15.9	14.3	0.0	14.3	8.8	50.1	0.0	0.0	10.3	10.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.9	15.9	14.3	0.0	14.3	8.8	50.1	0.0	0.0	10.3	10.3
LOS by Move:	B	B	B	B	A	B	A	D	A	A	B	B
HCM2kAvgQ:	3	3	3	1	0	1	0	14	0	0	3	3

Note: Queue reported is the number of cars per lane.

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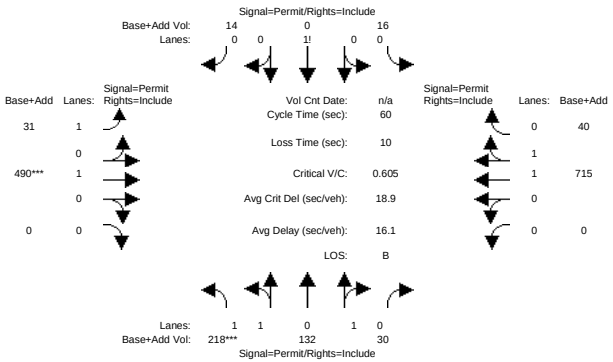
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One PM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	218	132	30	16	0	14	31	486	0	0	686	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	218	132	30	16	0	14	31	486	0	0	686	37
Added Vol:	0	0	0	0	0	0	0	4	0	0	29	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	218	132	30	16	0	14	31	490	0	0	715	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	240	145	33	18	0	15	34	538	0	0	786	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	240	145	33	18	0	15	34	538	0	0	786	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	240	145	33	18	0	15	34	538	0	0	786	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.60	0.60	0.58	1.00	0.58	0.25	0.75	1.00	1.00	0.75	0.75
Lanes:	1.75	1.02	0.23	0.54	0.00	0.46	1.00	1.00	0.00	0.00	1.89	0.11
Final Sat.:	1931	1169	266	588	0	515	475	1418	0	0	2711	152
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.03	0.00	0.03	0.07	0.38	0.00	0.00	0.29	0.29
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.35	0.35	0.35	0.09	0.00	0.09	0.15	0.79	0.00	0.00	0.60	0.60
Uniform Del:	14.5	14.5	14.5	13.1	0.0	13.1	8.6	12.9	0.0	0.0	11.3	11.3
IncremntDel:	0.8	0.8	0.8	0.4	0.0	0.4	1.4	8.8	0.0	0.0	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	13.5	0.0	13.5	10.0	21.7	0.0	0.0	13.2	13.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	13.5	0.0	13.5	10.0	21.7	0.0	0.0	13.2	13.2
LOS by Move:	B	B	B	B	A	B	A	C	A	A	B	B
HCM2kAvgQ:	2	2	2	0	0	0	0	8	0	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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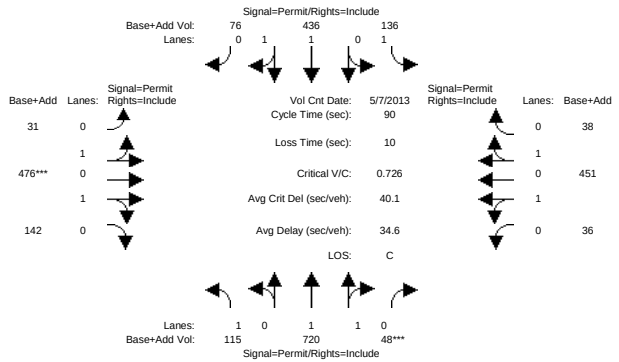
Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	54	0	54	54	0	54	0	26	0	0	26	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:30am												
Base Vol:	115	720	48	130	436	76	31	435	142	36	447	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	720	48	130	436	76	31	435	142	36	447	37
Added Vol:	0	0	0	6	0	0	0	41	0	0	4	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	720	48	136	436	76	31	476	142	36	451	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	119	742	49	140	449	78	32	491	146	37	465	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	742	49	140	449	78	32	491	146	37	465	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	742	49	140	449	78	32	491	146	37	465	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.34	0.59	0.72	0.25	0.58	0.70	0.65	0.58	0.64	0.59	0.53	0.59
Lanes:	1.00	1.90	0.10	1.00	1.75	0.25	0.09	1.50	0.41	0.12	1.75	0.13
Final Sat.:	644	2116	141	469	1925	336	108	1666	497	139	1745	147
Capacity Analysis Module:												
Vol/Sat:	0.18	0.35	0.35	0.30	0.23	0.23	0.29	0.29	0.29	0.27	0.27	0.27
Crit Moves:			****					****				
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.31	0.58	0.58	0.50	0.39	0.39	1.02	1.02	1.02	0.92	0.92	0.92
Uniform Del:	8.8	11.1	11.1	10.3	9.4	9.4	32.0	32.0	32.0	31.0	31.0	31.0
IncremntDel:	2.0	1.9	1.9	6.2	0.8	0.8	40.2	40.2	40.2	22.2	22.2	22.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.9	12.9	12.9	16.4	10.2	10.2	72.2	72.2	72.2	53.2	53.2	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	12.9	12.9	16.4	10.2	10.2	72.2	72.2	72.2	53.2	53.2	53.2
LOS by Move:	B	B	B	B	B	B	E	E	E	D	D	D
HCM2kAvgQ:	2	8	9	3	4	5	17	16	17	11	10	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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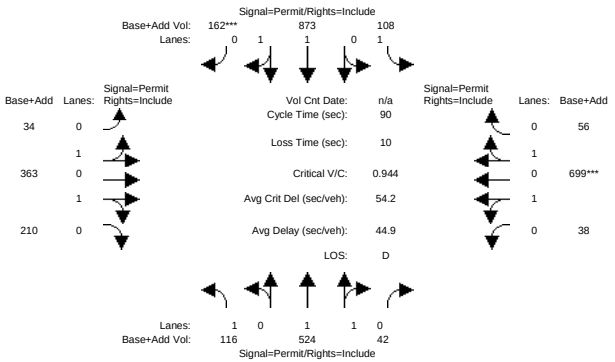
Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	50	0	50	50	0	50	0	30	0	0	30	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	116	524	42	108	873	162	34	359	210	38	674	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	524	42	108	873	162	34	359	210	38	674	52
Added Vol:	0	0	0	0	0	0	0	4	0	0	25	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	116	524	42	108	873	162	34	363	210	38	699	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	120	540	43	111	900	167	35	374	216	39	721	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	540	43	111	900	167	35	374	216	39	721	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	540	43	111	900	167	35	374	216	39	721	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.16	0.59	0.72	0.31	0.58	0.70	0.56	0.50	0.55	0.65	0.58	0.65
Lanes:	1.00	1.88	0.12	1.00	1.73	0.27	0.10	1.24	0.66	0.09	1.78	0.13
Final Sat.:	307	2090	168	588	1904	353	111	1185	686	107	1967	158
Capacity Analysis Module:												
Vol/Sat:	0.39	0.26	0.26	0.19	0.47	0.47	0.32	0.32	0.32	0.37	0.37	0.37
Crit Moves:						****					****	
Green/Cycle:	0.56	0.56	0.56	0.56	0.56	0.56	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.70	0.47	0.47	0.34	0.85	0.85	0.95	0.95	0.95	1.10	1.10	1.10
Uniform Del:	14.6	12.0	12.0	11.0	16.9	16.9	29.2	29.2	29.2	30.0	30.0	30.0
IncremntDel:	21.3	1.2	1.2	2.8	7.4	7.4	24.2	24.2	24.2	63.4	63.4	63.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	35.9	13.2	13.2	13.8	24.2	24.2	53.4	53.4	53.4	93.4	93.4	93.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.9	13.2	13.2	13.8	24.2	24.2	53.4	53.4	53.4	93.4	93.4	93.4
LOS by Move:	D	B	B	B	C	C	D	D	D	F	F	F
HCM2kAvgQ:	4	5	6	2	16	18	14	13	14	21	18	21

Note: Queue reported is the number of cars per lane.

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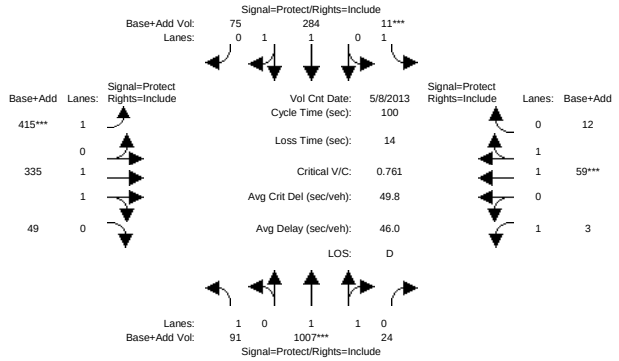
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One AM

Intersection #41: Mariposa/3rd



Street Name: 3rd Street Mariposa Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	39	39	10	25	25	35	18	18	15	8	8
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 8 May 2013 << 7:00-8:45am												
Base Vol:	73	977	24	11	282	70	405	335	47	3	59	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	977	24	11	282	70	405	335	47	3	59	12
Added Vol:	18	30	0	0	2	5	10	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	91	1007	24	11	284	75	415	335	49	3	59	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	94	1040	25	11	293	77	429	346	51	3	61	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	1040	25	11	293	77	429	346	51	3	61	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	1040	25	11	293	77	429	346	51	3	61	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.80	0.81	0.78	0.76	0.81	0.75	0.74	0.81	0.79	0.78
Lanes:	1.00	1.95	0.05	1.00	1.58	0.42	1.00	1.74	0.26	1.00	1.66	0.34
Final Sat.:	1539	2968	71	1539	2329	615	1539	2467	361	1539	2488	506
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.35	0.01	0.13	0.13	0.28	0.14	0.14	0.00	0.02	0.02
Crit Moves:		****		****			****				****	
Green/Cycle:	0.21	0.37	0.37	0.09	0.26	0.26	0.33	0.22	0.22	0.18	0.08	0.08
Volume/Cap:	0.30	0.95	0.95	0.08	0.49	0.49	0.84	0.63	0.63	0.01	0.32	0.32
Uniform Del:	35.6	32.6	32.6	43.8	33.5	33.5	33.0	37.4	37.4	35.3	46.4	46.4
IncremntDel:	2.4	17.7	17.7	1.0	2.3	2.3	15.6	4.8	4.8	0.1	3.8	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.0	50.3	50.3	44.8	35.8	35.8	48.6	42.2	42.2	35.4	50.2	50.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.0	50.3	50.3	44.8	35.8	35.8	48.6	42.2	42.2	35.4	50.2	50.2
LOS by Move:	D	D	D	D	D	D	D	D	D	D	D	D
HCM2kAvgQ:	3	23	23	0	6	5	14	6	6	0	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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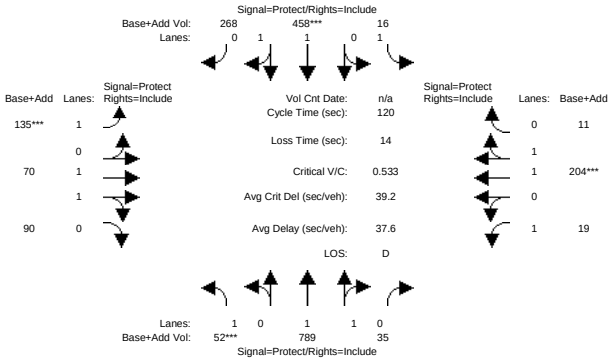
Intersection #41: Mariposa/3rd



Street Name: 3rd Street Mariposa Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	48	48	48	12	46	46	23	23	23	23	23
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	50	787	35	16	434	242	132	70	79	19	204	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	787	35	16	434	242	132	70	79	19	204	11
Added Vol:	2	2	0	0	24	26	3	0	11	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	789	35	16	458	268	135	70	90	19	204	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	55	831	37	17	482	282	142	74	95	20	215	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	831	37	17	482	282	142	74	95	20	215	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	831	37	17	482	282	142	74	95	20	215	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.79	0.81	0.76	0.73	0.81	0.70	0.65	0.81	0.80	0.79
Lanes:	1.00	1.91	0.09	1.00	1.25	0.75	1.00	1.00	1.00	1.00	1.90	0.10
Final Sat.:	1539	2901	129	1539	1793	1049	1539	1322	1243	1539	2896	156
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.29	0.01	0.27	0.27	0.09	0.06	0.08	0.01	0.07	0.07
Crit Moves:	****				****		****				****	
Green/Cycle:	0.12	0.40	0.40	0.10	0.38	0.38	0.19	0.19	0.19	0.19	0.19	0.19
Volume/Cap:	0.30	0.72	0.72	0.11	0.70	0.70	0.48	0.29	0.40	0.07	0.39	0.39
Uniform Del:	48.5	30.3	30.3	49.1	31.2	31.2	43.2	41.5	42.4	39.7	42.3	42.3
IncremntDel:	4.3	3.6	3.6	1.4	3.8	3.8	5.5	1.3	2.8	0.4	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.9	33.9	33.9	50.6	35.0	35.0	48.7	42.8	45.2	40.2	44.3	44.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.9	33.9	33.9	50.6	35.0	35.0	48.7	42.8	45.2	40.2	44.3	44.3
LOS by Move:	D	C	C	C	D	C	C	D	D	D	D	D
HCM2kAvgQ:	2	15	15	1	13	13	5	2	3	1	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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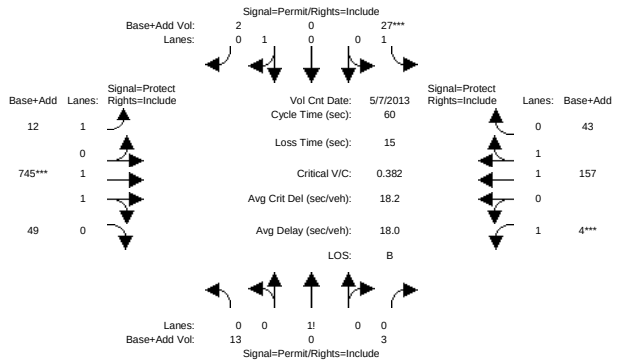
Intersection #42: Mariposa/4th



Street Name: 4th Street Mariposa Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module: >> Count Date: 7 May 2013 << 7:00-8:45am												
Base Vol:	13	0	3	24	0	0	0	735	49	4	148	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	0	3	24	0	0	0	735	49	4	148	29
Added Vol:	0	0	0	3	0	2	12	10	0	0	9	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	0	3	27	0	2	12	745	49	4	157	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	14	0	3	28	0	2	13	784	52	4	165	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	0	3	28	0	2	13	784	52	4	165	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	0	3	28	0	2	13	784	52	4	165	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	1.00	0.68	0.64	1.00	0.68	0.81	0.75	0.75	0.81	0.74	0.73
Lanes:	0.82	0.00	0.18	1.00	0.00	1.00	1.00	1.88	0.12	1.00	1.57	0.43
Final Sat.:	1022	0	236	1214	0	1295	1539	2683	176	1539	2188	599
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.02	0.00	0.00	0.01	0.29	0.29	0.00	0.08	0.08
Crit Moves:				****				****		****		
Green/Cycle:	0.17	0.00	0.17	0.17	0.00	0.17	0.22	0.50	0.50	0.17	0.44	0.44
Volume/Cap:	0.08	0.00	0.08	0.14	0.00	0.01	0.04	0.58	0.58	0.02	0.17	0.17
Uniform Del:	31.7	0.0	31.7	32.0	0.0	31.3	27.4	15.9	15.9	31.3	15.0	15.0
IncremntDel:	0.7	0.0	0.7	1.4	0.0	0.1	0.2	1.8	1.8	0.1	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.4	0.0	32.4	33.4	0.0	31.4	27.6	17.6	17.6	31.5	15.3	15.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.4	0.0	32.4	33.4	0.0	31.4	27.6	17.6	17.6	31.5	15.3	15.3
LOS by Move:	C	A	C	C	A	C	C	B	B	C	B	B
HCM2kAvgQ:	0	0	0	1	0	0	0	9	9	0	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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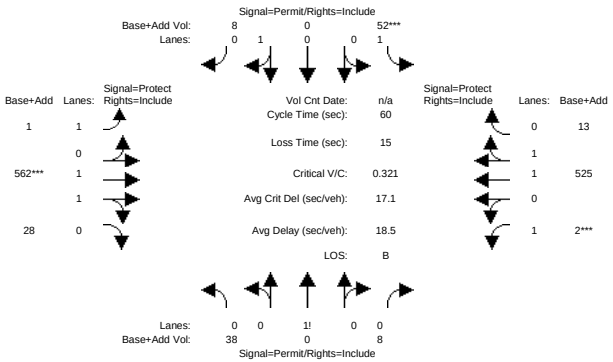
Intersection #42: Mariposa/4th



Street Name: 4th Street Mariposa Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	38	0	8	39	0	0	0	561	28	2	499	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	0	8	39	0	0	0	561	28	2	499	12
Added Vol:	0	0	0	13	0	8	1	1	0	0	26	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	0	8	52	0	8	1	562	28	2	525	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	40	0	8	55	0	8	1	592	29	2	553	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	0	8	55	0	8	1	592	29	2	553	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	0	8	55	0	8	1	592	29	2	553	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.61	1.00	0.63	0.59	1.00	0.68	0.81	0.75	0.75	0.81	0.76	0.76
Lanes:	0.83	0.00	0.17	1.00	0.00	1.00	1.00	1.90	0.10	1.00	1.95	0.05
Final Sat.:	962	0	202	1115	0	1295	1539	2730	136	1539	2805	69
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.04	0.05	0.00	0.01	0.00	0.22	0.22	0.00	0.20	0.20
Crit Moves:				****				****		****		
Green/Cycle:	0.17	0.00	0.17	0.17	0.00	0.17	0.22	0.50	0.50	0.17	0.44	0.44
Volume/Cap:	0.25	0.00	0.25	0.29	0.00	0.04	0.00	0.43	0.43	0.01	0.44	0.44
Uniform Del:	32.6	0.0	32.6	32.9	0.0	31.5	27.2	14.4	14.4	31.3	17.3	17.3
IncremntDel:	3.1	0.0	3.1	4.0	0.0	0.3	0.0	1.0	1.0	0.1	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	35.7	0.0	35.7	36.9	0.0	31.8	27.3	15.3	15.3	31.4	18.4	18.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.7	0.0	35.7	36.9	0.0	31.8	27.3	15.3	15.3	31.4	18.4	18.4
LOS by Move:	D	A	D	D	A	C	C	B	B	C	B	B
HCM2kAvgQ:	1	0	1	2	0	0	0	6	6	0	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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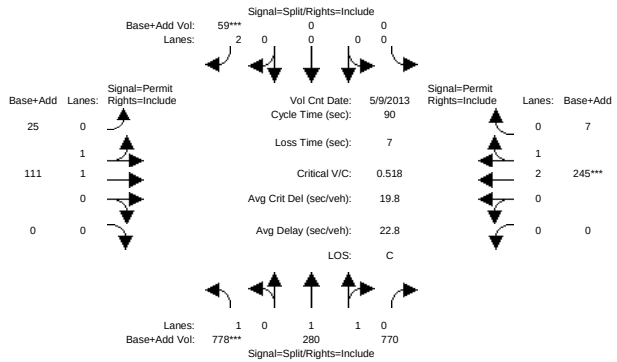
Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	55	55	55	13	13	13	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2013 << 7:00-8:45am												
Base Vol:	778	151	752	0	0	43	0	107	0	0	241	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	778	151	752	0	0	43	0	107	0	0	241	0
Added Vol:	0	129	18	0	0	16	25	4	0	0	4	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	778	280	770	0	0	59	25	111	0	0	245	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	807	290	799	0	0	61	26	115	0	0	254	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	807	290	799	0	0	61	26	115	0	0	254	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	807	290	799	0	0	61	26	115	0	0	254	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.75	0.74	1.00	1.00	0.61	0.78	0.82	1.00	1.00	0.89	0.86
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.38	1.62	0.00	0.00	2.91	0.09
Final Sat.:	2018	1427	1402	0	0	2325	565	2510	0	0	4944	141
Capacity Analysis Module:												
Vol/Sat:	0.40	0.20	0.57	0.00	0.00	0.03	0.05	0.05	0.00	0.00	0.05	0.05
Crit Moves:	****					****					****	
Green/Cycle:	0.61	0.61	0.61	0.00	0.00	0.14	0.17	0.17	0.00	0.00	0.17	0.17
Volume/Cap:	0.65	0.33	0.93	0.00	0.00	0.18	0.28	0.28	0.00	0.00	0.31	0.31
Uniform Del:	11.3	8.5	15.8	0.0	0.0	33.8	32.8	32.8	0.0	0.0	32.9	32.9
IncremntDel:	2.7	0.3	14.4	0.0	0.0	1.2	1.3	1.3	0.0	0.0	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	14.1	8.8	30.3	0.0	0.0	35.0	34.1	34.1	0.0	0.0	33.9	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.1	8.8	30.3	0.0	0.0	35.0	34.1	34.1	0.0	0.0	33.9	33.9
LOS by Move:	B	A	C	A	A	D	C	C	A	A	C	C
HCM2kAvgQ:	15	4	26	0	0	1	2	2	0	0	3	2

Note: Queue reported is the number of cars per lane.

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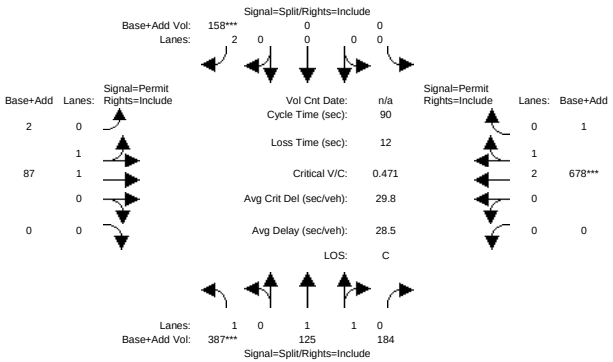
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One PM

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	29	29	29	26	26	26	23	23	23	23	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	387	113	182	0	0	61	0	87	0	0	645	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	387	113	182	0	0	61	0	87	0	0	645	0
Added Vol:	0	12	2	0	0	97	2	0	0	0	33	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	387	125	184	0	0	158	2	87	0	0	678	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	403	130	192	0	0	165	2	91	0	0	706	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	403	130	192	0	0	165	2	91	0	0	706	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	403	130	192	0	0	165	2	91	0	0	706	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.82	1.00	1.00	0.62	0.85	0.88	1.00	1.00	0.90	0.86
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.05	1.95	0.00	0.00	2.99	0.01
Final Sat.:	2018	1461	1549	0	0	2358	75	3284	0	0	5104	8
Capacity Analysis Module:												
Vol/Sat:	0.20	0.09	0.12	0.00	0.00	0.07	0.03	0.03	0.00	0.00	0.14	0.14
Crit Moves:	****					****					****	
Green/Cycle:	0.32	0.32	0.32	0.00	0.00	0.29	0.26	0.26	0.00	0.00	0.26	0.26
Volume/Cap:	0.62	0.28	0.38	0.00	0.00	0.24	0.11	0.11	0.00	0.00	0.54	0.54
Uniform Del:	25.8	22.7	23.6	0.0	0.0	24.5	25.6	25.6	0.0	0.0	28.9	28.9
IncremntDel:	4.4	0.6	1.3	0.0	0.0	0.8	0.3	0.3	0.0	0.0	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	30.2	23.3	24.9	0.0	0.0	25.3	25.9	25.9	0.0	0.0	30.6	30.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	23.3	24.9	0.0	0.0	25.3	25.9	25.9	0.0	0.0	30.6	30.6
LOS by Move:	C	C	C	A	A	C	C	C	A	A	C	C
HCM2kAvgQ:	10	3	5	0	0	2	1	1	0	0	7	7

Note: Queue reported is the number of cars per lane.

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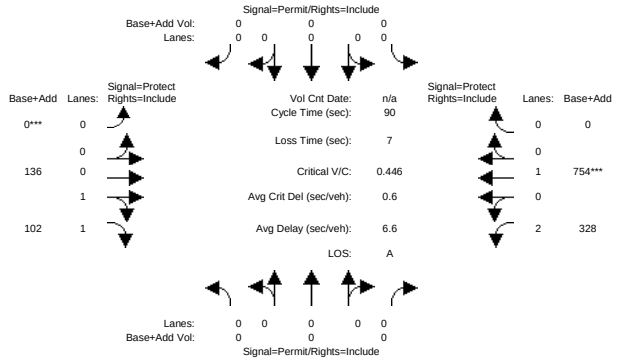
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One AM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	31	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	107	102	313	750	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	107	102	313	750	0
Added Vol:	0	0	0	0	0	0	0	29	0	15	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	136	102	328	754	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	0	0	0	142	106	342	785	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	142	106	342	785	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	142	106	342	785	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	1778	1778	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.06	0.10	0.41	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.18	0.16	0.45	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	22.4	8.7	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	22.5	8.8	0.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	22.5	8.8	0.6	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	3	2	2	3	0

Note: Queue reported is the number of cars per lane.

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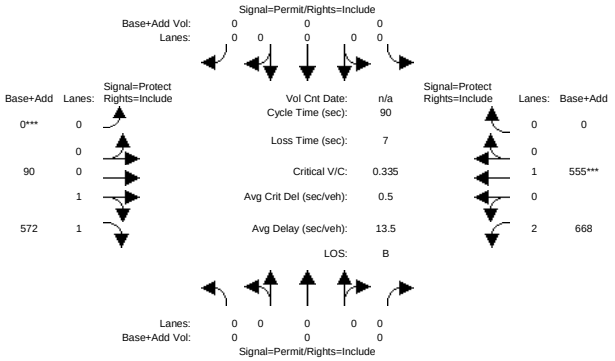
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2015 Plus MB Phase One PM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	87	572	555	538	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	87	572	555	538	0
Added Vol:	0	0	0	0	0	0	0	3	0	113	17	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	90	572	668	555	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	96	609	711	590	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	96	609	711	590	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	96	609	711	590	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	1.73	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	449	2857	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.20	0.31	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.34	0.34	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8	26.8	9.9	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0	28.0	10.0	0.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0	28.0	10.0	0.5	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	10	10	5	2	0

Note: Queue reported is the number of cars per lane.

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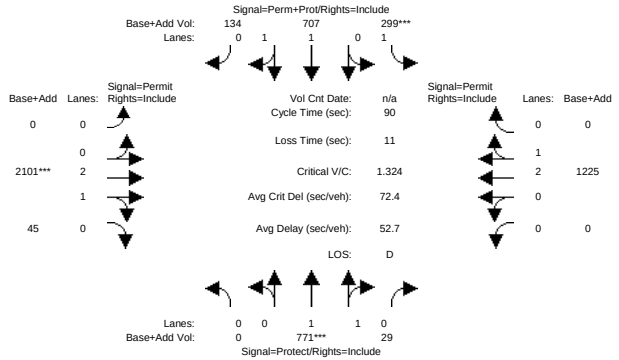
Year 2040 Plus LRDP (4-Lane 16th Street)

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #1: Stanyan / Oak-Fell / Kezar




```
Street Name:          Stanyan Street                Kezar / Oak / Fell
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    21    0    21     8   33   33     0   46   46    46   46    0
Y+R:         12.0  4.0  12.0   6.0  6.0  6.0   4.0  5.0  5.0   5.0  5.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  771    29   299  707  134     0 2101   45     0 1225    0
Growth Adj:  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  771    29   299  707  134     0 2101   45     0 1225    0
Added Vol:      0    0     0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0     0     0    0    0     0    0    0     0    0    0
Initial Fut:    0  771    29   299  707  134     0 2101   45     0 1225    0
User Adj:    1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.99 0.99  0.99  0.99 0.99 0.99  0.99 0.99 0.99  0.99 0.99 0.99
PHF Volume:     0  779    29   302  714  135     0 2122   45     0 1237    0
Reduct Vol:     0    0     0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0  779    29   302  714  135     0 2122   45     0 1237    0
PCE Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  779    29   302  714  135     0 2122   45     0 1237    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.75  0.75  0.39 0.79 0.79  1.00 0.77 0.77  1.00 0.78 0.91
Lanes:       0.00 1.93  0.07  1.00 1.68 0.32  0.00 2.94 0.06  0.00 3.00 0.00
Final Sat.:     0 2740   103   742 2524  478     0 4318   92     0 4424    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.28  0.28  0.41 0.28 0.28  0.00 0.49 0.49  0.00 0.28 0.00
Crit Moves:       ****       ****           ****
Green/Cycle: 0.00 0.22  0.22  0.44 0.37 0.37  0.00 0.51 0.51  0.00 0.51 0.00
Volume/Cap:  0.00 1.31  1.31  0.80 0.77 0.77  0.00 0.96 0.96  0.00 0.55 0.00
Uniform Del:  0.0 35.2  35.2  32.9 25.2 25.2   0.0 21.2 21.2   0.0 14.9  0.0
IncremntDel:  0.0  151 151.5  16.4  5.3  5.3   0.0 11.9 11.9   0.0  1.0  0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00  1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00 1.00 0.00
Delay/Veh:    0.0  187 186.7  49.3 30.4 30.4   0.0 33.0 33.0   0.0 15.9  0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0  187 186.7  49.3 30.4 30.4   0.0 33.0 33.0   0.0 15.9  0.0
LOS by Move:    A    F     F     D    C    C     A    C    C     A    B    A
HCM2kAvgQ:      0   23    23    10   13   13     0   27   27     0    9    0
Note: Queue reported is the number of cars per lane.
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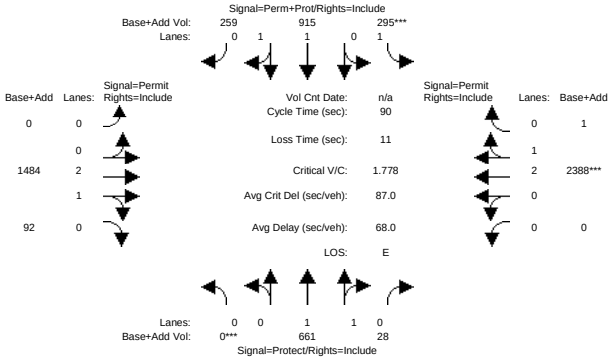
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #1: Stanyan / Oak-Fell / Kezar

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Street Name:          Stanyan Street                Kezar / Oak / Fell
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    25   25   25     8   33   33     0   46   46    46   46    0
Y+R:         12.0  4.0  12.0   6.0  6.0  6.0   4.0  5.0  5.0   5.0  5.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  661    28   295  915  259     0 1484   92     0 2388    1
Growth Adj:  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  661    28   295  915  259     0 1484   92     0 2388    1
Added Vol:      0    0     0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0     0     0    0    0     0    0    0     0    0    0
Initial Fut:    0  661    28   295  915  259     0 1484   92     0 2388    1
User Adj:    1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:     0  696    29   311  963  273     0 1562   97     0 2514    1
Reduct Vol:     0    0     0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0  696    29   311  963  273     0 1562   97     0 2514    1
PCE Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  696    29   311  963  273     0 1562   97     0 2514    1
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.75  0.75  0.33 0.78 0.78  1.00 0.77 0.77  1.00 0.78 0.78
Lanes:       0.00 1.92  0.08  1.00 1.56 0.44  0.00 2.82 0.18  0.00 2.99 0.01
Final Sat.:     0 2725   115   632 2316  656     0 4128  256     0 4422    2
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.26  0.26  0.49 0.42 0.42  0.00 0.38 0.38  0.00 0.57 0.57
Crit Moves:  ****          ****           ****           ****
Green/Cycle: 0.00 0.28  0.28  0.43 0.37 0.37  0.00 0.51 0.51  0.00 0.51 0.51
Volume/Cap:  0.00 0.92  0.92  1.18 1.13 1.13  0.00 0.74 0.74  0.00 1.11 1.11
Uniform Del:  0.0 31.5  31.5  37.0 28.5 28.5   0.0 17.3 17.3   0.0 22.0 22.0
IncremntDel:  0.0 17.5  17.5 111.4 72.1 72.1   0.0  2.2  2.2   0.0 57.4 57.4
InitQueuDel:  0.0  0.0   0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00  1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00 1.00 1.00
Delay/Veh:    0.0 49.0  49.0 148.4  101 100.6   0.0 19.6 19.6   0.0 79.4 79.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 49.0  49.0 148.4  101 100.6   0.0 19.6 19.6   0.0 79.4 79.4
LOS by Move:    A    D     D     F    F    F     A    B    B     A    E    E
HCM2kAvgQ:      0   11    11    18   31   31     0   15   15     0   41   41
Note: Queue reported is the number of cars per lane.
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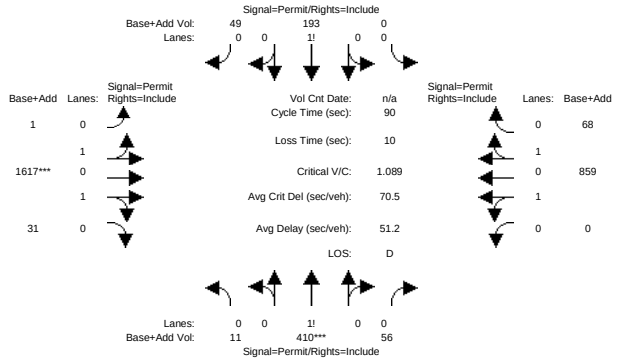
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #2: 9th Ave / Lincoln



Street Name:	9th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	26	26	26	26	26	26	54	54	54	54	54	54
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	11	410	56	0	193	49	1	1617	31	0	859	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	410	56	0	193	49	1	1617	31	0	859	68
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	410	56	0	193	49	1	1617	31	0	859	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	11	414	57	0	195	49	1	1633	31	0	868	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	414	57	0	195	49	1	1633	31	0	868	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	414	57	0	195	49	1	1633	31	0	868	69
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.71	1.00	0.81	0.80	0.72	0.72	0.72	0.95	0.74	0.74
Lanes:	0.02	0.86	0.12	0.00	0.80	0.20	0.01	1.96	0.03	0.00	1.85	0.15
Final Sat.:	31	1164	159	0	1230	312	2	2668	51	0	2618	207
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.36	0.00	0.16	0.16	0.61	0.61	0.61	0.00	0.33	0.33
Crit Moves:		****						****				
Green/Cycle:	0.29	0.29	0.29	0.00	0.29	0.29	0.60	0.60	0.60	0.00	0.60	0.60
Volume/Cap:	1.23	1.23	1.23	0.00	0.55	0.55	1.02	1.02	1.02	0.00	0.55	0.55
Uniform Del:	32.0	32.0	32.0	0.0	27.0	27.0	18.0	18.0	18.0	0.0	10.8	10.8
IncremntDel:	124.7	125	124.7	0.0	4.8	4.8	27.5	27.5	27.5	0.0	1.3	1.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	156.7	157	156.7	0.0	31.8	31.8	45.5	45.5	45.5	0.0	12.1	12.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	156.7	157	156.7	0.0	31.8	31.8	45.5	45.5	45.5	0.0	12.1	12.1
LOS by Move:	F	F	F	A	C	C	D	D	D	A	B	B
HCM2kAvgQ:	25	25	25	0	6	6	34	34	34	0	8	8

Note: Queue reported is the number of cars per lane.

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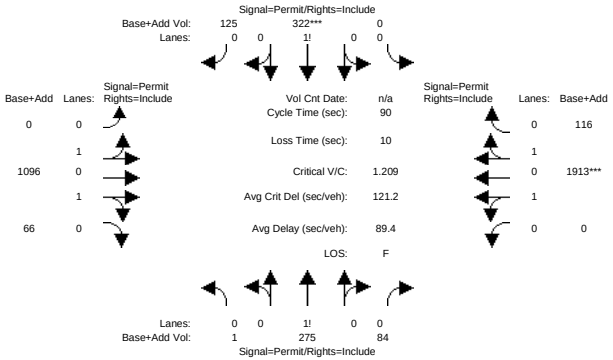
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #2: 9th Ave / Lincoln



Street Name:	9th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	23	23	23	23	23	57	57	57	57	57	57
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	1	275	84	0	322	125	0	1096	66	0	1913	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	275	84	0	322	125	0	1096	66	0	1913	116
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	275	84	0	322	125	0	1096	66	0	1913	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	1	293	89	0	343	133	0	1166	70	0	2035	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	293	89	0	343	133	0	1166	70	0	2035	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	293	89	0	343	133	0	1166	70	0	2035	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.70	1.00	0.80	0.79	0.95	0.75	0.74	0.95	0.75	0.74
Lanes:	0.01	0.76	0.23	0.00	0.72	0.28	0.00	1.89	0.11	0.00	1.89	0.11
Final Sat.:	4	1024	313	0	1095	425	0	2671	161	0	2670	162
Capacity Analysis Module:												
Vol/Sat:	0.29	0.29	0.29	0.00	0.31	0.31	0.00	0.44	0.44	0.00	0.76	0.76
Crit Moves:					****						****	
Green/Cycle:	0.26	0.26	0.26	0.00	0.26	0.26	0.00	0.63	0.63	0.00	0.63	0.63
Volume/Cap:	1.12	1.12	1.12	0.00	1.22	1.22	0.00	0.69	0.69	0.00	1.20	1.20
Uniform Del:	33.5	33.5	33.5	0.0	33.5	33.5	0.0	10.7	10.7	0.0	16.5	16.5
IncremntDel:	84.3	84.3	84.3	0.0	122	121.6	0.0	2.2	2.2	0.0	97.2	97.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	117.8	118	117.8	0.0	155	155.1	0.0	12.9	12.9	0.0	114	113.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	117.8	118	117.8	0.0	155	155.1	0.0	12.9	12.9	0.0	114	113.7
LOS by Move:	F	F	F	A	F	F	A	B	B	A	F	F
HCM2kAvgQ:	18	18	17	0	27	26	0	13	13	0	55	55

Note: Queue reported is the number of cars per lane.

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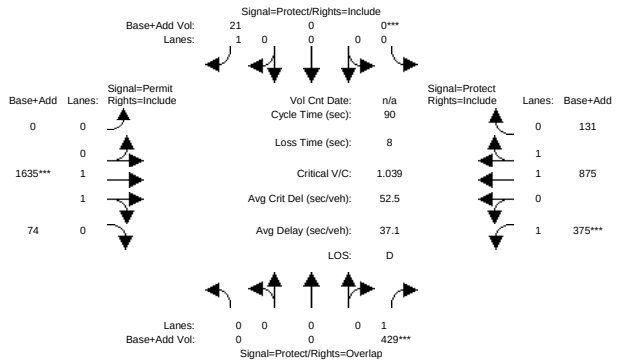
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #3: 7th Ave / Lincoln



Street Name:	7th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	29	0	0	24	52	52	52	29	58	58
Y+R:	4.0	4.0	5.0	4.0	4.0	4.0	4.5	4.5	4.5	5.0	4.5	4.5
Volume Module:												
Base Vol:	0	0	429	0	0	21	0	1635	74	375	875	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	429	0	0	21	0	1635	74	375	875	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	429	0	0	21	0	1635	74	375	875	131
User Adj:	1.00	1.00	0.70	1.00	1.00	1.00	1.00	0.70	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	313	0	0	22	0	1192	77	391	911	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	313	0	0	22	0	1192	77	391	911	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	313	0	0	22	0	1192	77	391	911	136
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.62	1.00	1.00	0.69	1.00	0.75	0.74	0.81	0.74	0.73
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.88	0.12	1.00	1.74	0.26
Final Sat.:	0	0	1187	0	0	1303	0	2659	172	1539	2437	365
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.26	0.00	0.00	0.02	0.00	0.45	0.45	0.25	0.37	0.37
Crit Moves:			****	****				****		****		
Green/Cycle:	0.00	0.00	0.47	0.00	0.00	0.21	0.00	0.46	0.46	0.26	0.72	0.72
Volume/Cap:	0.00	0.00	0.56	0.00	0.00	0.08	0.00	0.97	0.97	0.99	0.52	0.52
Uniform Del:	0.0	0.0	21.6	0.0	0.0	35.6	0.0	29.8	29.8	41.8	7.2	7.2
IncremntDel:	0.0	0.0	4.1	0.0	0.0	0.6	0.0	19.5	19.5	42.6	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	25.7	0.0	0.0	36.2	0.0	49.3	49.3	84.4	8.2	8.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	25.7	0.0	0.0	36.2	0.0	49.3	49.3	84.4	8.2	8.2
LOS by Move:	A	A	C	A	A	D	A	D	D	F	A	A
HCM2kAvgQ:	0	0	7	0	0	1	0	22	22	18	9	9

Note: Queue reported is the number of cars per lane.

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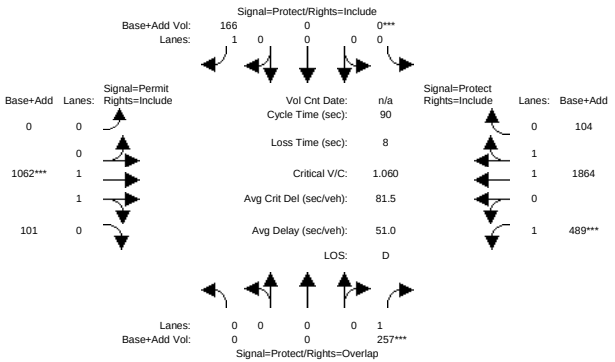
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #3: 7th Ave / Lincoln



Street Name:	7th Avenue						Lincoln Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	38	0	0	24	43	43	43	38	58	58
Y+R:	4.0	4.0	5.0	4.0	4.0	4.0	4.5	4.5	4.5	5.0	4.5	4.5
Volume Module:												
Base Vol:	0	0	257	0	0	166	0	1062	101	489	1864	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	257	0	0	166	0	1062	101	489	1864	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	257	0	0	166	0	1062	101	489	1864	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	268	0	0	173	0	1106	105	509	1553	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	268	0	0	173	0	1106	105	509	1553	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	268	0	0	173	0	1106	105	509	1553	108
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.63	1.00	1.00	0.68	1.00	0.74	0.74	0.81	0.74	0.74
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.83	0.17	1.00	1.87	0.13
Final Sat.:	0	0	1193	0	0	1300	0	2574	245	1539	2644	184
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.22	0.00	0.00	0.13	0.00	0.43	0.43	0.33	0.59	0.59
Crit Moves:			****	****				****		****		
Green/Cycle:	0.00	0.00	0.54	0.00	0.00	0.21	0.00	0.39	0.39	0.34	0.72	0.72
Volume/Cap:	0.00	0.00	0.41	0.00	0.00	0.64	0.00	1.12	1.12	0.98	0.81	0.81
Uniform Del:	0.0	0.0	15.2	0.0	0.0	40.9	0.0	34.7	34.7	37.2	10.6	10.6
IncremntDel:	0.0	0.0	1.9	0.0	0.0	11.1	0.0	64.6	64.6	35.8	3.7	3.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	0.0	17.1	0.0	0.0	52.1	0.0	99.3	99.3	73.0	14.3	14.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	17.1	0.0	0.0	52.1	0.0	99.3	99.3	73.0	14.3	14.3
LOS by Move:	A	A	B	A	A	D	A	F	F	E	B	B
HCM2kAvgQ:	0	0	5	0	0	7	0	32	32	23	24	24

Note: Queue reported is the number of cars per lane.

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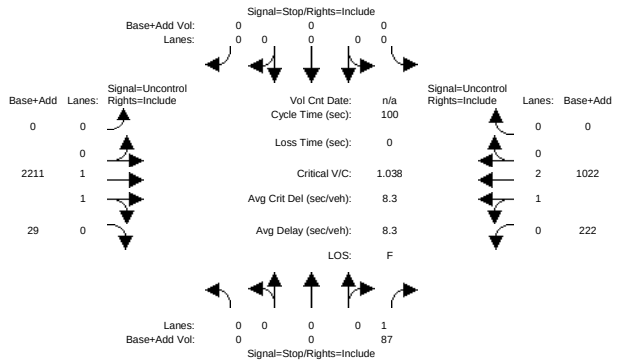
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #4: 4th Ave / Lincoln



Street Name: 4th Avenue Lincoln Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	87	0	0	0	2211	29	222	1022	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	87	0	0	0	2211	29	222	1022	0	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	87	0	0	0	2211	29	222	1022	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	89	0	0	0	2256	30	227	1043	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	89	0	0	0	2256	30	227	1043	0	
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	1143	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2286	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	194	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	218	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	194	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	218	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.46	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	2.2	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	9.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	38.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	118.1	xxxx	xxxxx
LOS by Move:	*	*	E	*	*	*	*	*	*	F	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	118.1	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	F	*	*
ApproachDel:	38.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	E			*			*			*		

Note: Queue reported is the number of cars per lane.

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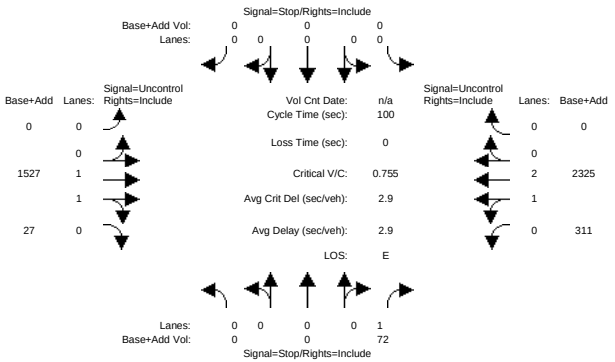
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #4: 4th Ave / Lincoln



Street Name: 4th Avenue Lincoln Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	72	0	0	0	1527	27	311	2325	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	72	0	0	0	1527	27	311	2325	0	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	72	0	0	0	1527	27	311	2325	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
PHF Volume:	0	0	73	0	0	0	1542	27	314	2348	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	0	0	73	0	0	0	1542	27	314	2348	0	
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	785	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1570	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	336	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	416	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	336	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	416	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.22	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.75	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.8	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	6.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	18.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	35.8	xxxx	xxxxx
LOS by Move:	*	*	C	*	*	*	*	*	*	E	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.2	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	35.8	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	E	*	*
ApproachDel:	18.7			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

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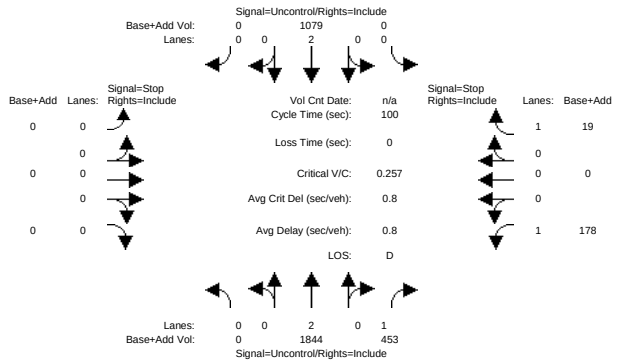
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #5: Lincoln Way-Kezar Drive-Third Avenue



Street Name:	Lincoln Way-Kezar Drive						Third Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	1844	453	0	1079	0	0	0	0	178	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1844	453	0	1079	0	0	0	0	178	0	19
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1844	453	0	1079	0	0	0	0	178	0	19
User Adj:	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00	1.00	0.25	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	941	462	0	551	0	0	0	0	45	0	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	941	462	0	551	0	0	0	0	45	0	19
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1216	xxxx	470
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	176	xxxx	545
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	176	xxxx	545
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.26	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.0	xxxx	0.1
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	32.3	xxxx	11.8
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			26.2		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the number of cars per lane.

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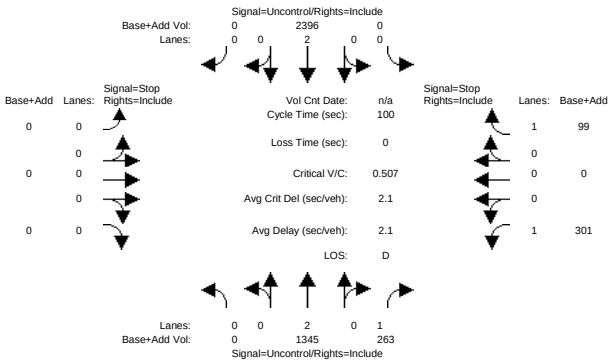
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #5: Lincoln Way-Kezar Drive-Third Avenue



Street Name:	Lincoln Way-Kezar Drive						Third Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	1345	263	0	2396	0	0	0	0	301	0	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1345	263	0	2396	0	0	0	0	301	0	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1345	263	0	2396	0	0	0	0	301	0	99
User Adj:	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00	1.00	0.25	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	693	271	0	1235	0	0	0	0	78	0	102
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	693	271	0	1235	0	0	0	0	78	0	102
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1311	xxxx	347
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	153	xxxx	655
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	153	xxxx	655
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.51	xxxx	0.16
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2.4	xxxx	0.5
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	50.6	xxxx	11.5
LOS by Move:	*	*	*	*	*	*	*	*	*	F	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			28.4		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the number of cars per lane.

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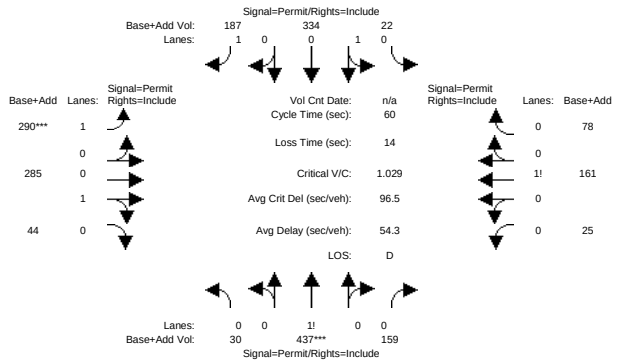
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #6: Stanyan / Frederick



Street Name: Stanyan Street Frederick Street
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green:	25	25	25	25	25	25	21	21	21	21	21	21
Y+R:	9.0	9.0	9.0	9.0	9.0	9.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	30	437	159	22	334	187	290	285	44	25	161	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	437	159	22	334	187	290	285	44	25	161	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	437	159	22	334	187	290	285	44	25	161	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	31	451	164	23	344	193	299	294	45	26	166	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	451	164	23	344	193	299	294	45	26	166	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	451	164	23	344	193	299	294	45	26	166	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.68	0.81	0.81	0.63	0.54	0.73	0.73	0.66	0.66	0.66
Lanes:	0.05	0.70	0.25	0.06	0.94	1.00	1.00	0.87	0.13	0.09	0.61	0.30
Final Sat.:	62	902	328	95	1438	1191	1032	1203	186	119	764	370
Capacity Analysis Module:												
Vol/Sat:	0.50	0.50	0.50	0.24	0.24	0.16	0.29	0.24	0.24	0.22	0.22	0.22
Crit Moves:		****					****					
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	1.20	1.20	1.20	0.57	0.57	0.39	0.83	0.70	0.70	0.62	0.62	0.62
Uniform Del:	17.5	17.5	17.5	13.4	13.4	12.2	17.8	16.8	16.8	16.2	16.2	16.2
IncremntDel:	106.6	107	106.6	3.7	3.7	2.3	19.1	8.1	8.1	6.5	6.5	6.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	124.1	124	124.1	17.2	17.2	14.5	37.0	24.8	24.8	22.7	22.7	22.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	124.1	124	124.1	17.2	17.2	14.5	37.0	24.8	24.8	22.7	22.7	22.7
LOS by Move:	F	F	F	B	B	B	D	C	C	C	C	C
HCM2kAvgQ:	27	27	27	5	5	2	8	7	7	5	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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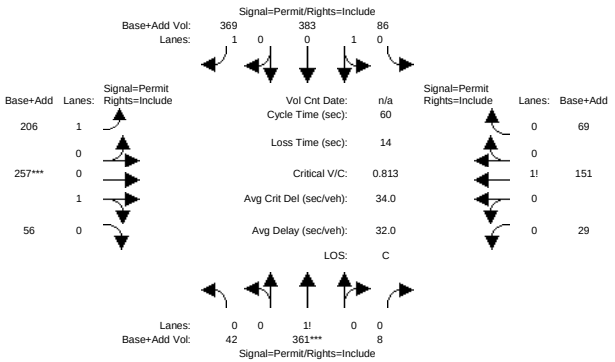
Intersection #6: Stanyan / Frederick



Street Name: Stanyan Street Frederick Street
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green:	25	25	25	25	25	25	21	21	21	21	21	21
Y+R:	9.0	9.0	9.0	9.0	9.0	9.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	42	361	8	86	383	369	206	257	56	29	151	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	361	8	86	383	369	206	257	56	29	151	69
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	361	8	86	383	369	206	257	56	29	151	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	45	384	9	91	407	393	219	273	60	31	161	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	384	9	91	407	393	219	273	60	31	161	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	384	9	91	407	393	219	273	60	31	161	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	0.60	0.60	0.69	0.70	0.60	0.52	0.73	0.72	0.65	0.65	0.64
Lanes:	0.10	0.88	0.02	0.18	0.82	1.00	1.00	0.82	0.18	0.12	0.60	0.28
Final Sat.:	117	1007	22	242	1077	1133	992	1130	246	143	747	341
Capacity Analysis Module:												
Vol/Sat:	0.38	0.38	0.38	0.38	0.38	0.35	0.22	0.24	0.24	0.22	0.22	0.22
Crit Moves:		****						****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.92	0.92	0.92	0.91	0.91	0.83	0.63	0.69	0.69	0.61	0.61	0.61
Uniform Del:	16.5	16.5	16.5	16.4	16.4	15.6	16.3	16.7	16.7	16.1	16.1	16.1
IncremntDel:	24.7	24.7	24.7	21.3	21.3	15.6	8.4	7.9	7.9	6.4	6.4	6.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.2	41.2	41.2	37.7	37.7	31.2	24.7	24.6	24.6	22.6	22.6	22.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.2	41.2	41.2	37.7	37.7	31.2	24.7	24.6	24.6	22.6	22.6	22.6
LOS by Move:	D	D	D	D	D	C	C	C	C	C	C	C
HCM2kAvgQ:	10	10	10	8	8	6	5	7	7	5	5	5

Note: Queue reported is the number of cars per lane.

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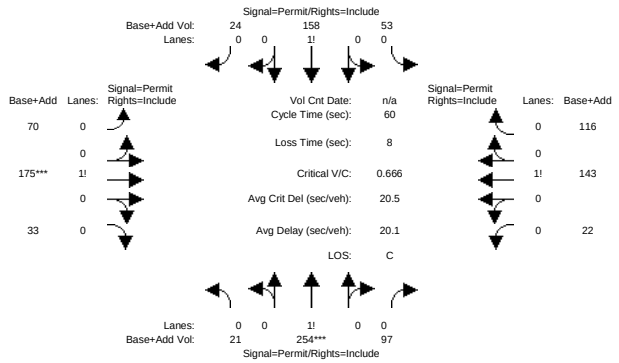
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #7: 9th Ave / Irving



Street Name:	9th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	21	254	97	53	158	24	70	175	33	22	143	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	254	97	53	158	24	70	175	33	22	143	116
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	254	97	53	158	24	70	175	33	22	143	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	23	282	108	59	176	27	78	194	37	24	159	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	282	108	59	176	27	78	194	37	24	159	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	282	108	59	176	27	78	194	37	24	159	129
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.69	0.68	0.62	0.62	0.62	0.62	0.63	0.62	0.66	0.66	0.64
Lanes:	0.06	0.68	0.26	0.23	0.67	0.10	0.25	0.63	0.12	0.08	0.50	0.42
Final Sat.:	74	892	341	265	789	120	298	746	141	97	633	514
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.22	0.22	0.22	0.26	0.26	0.26	0.25	0.25	0.25
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.61	0.61	0.61	0.43	0.43	0.43	0.75	0.75	0.75	0.72	0.72	0.72
Uniform Del:	10.2	10.2	10.2	9.0	9.0	9.0	17.1	17.1	17.1	16.9	16.9	16.9
IncremntDel:	4.1	4.1	4.1	2.2	2.2	2.2	11.5	11.5	11.5	9.7	9.7	9.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.4	14.4	14.4	11.2	11.2	11.2	28.7	28.7	28.7	26.6	26.6	26.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.4	14.4	14.4	11.2	11.2	11.2	28.7	28.7	28.7	26.6	26.6	26.6
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	6	6	6	3	3	3	6	6	6	6	6	5

Note: Queue reported is the number of cars per lane.

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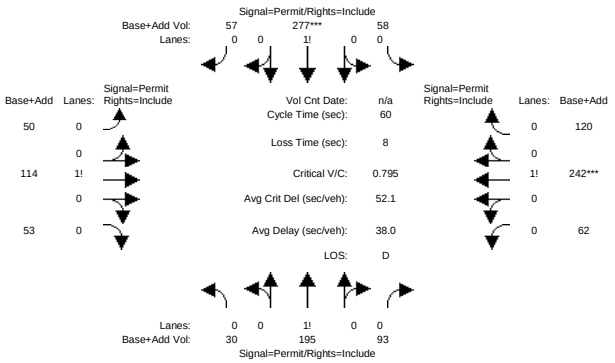
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #7: 9th Ave / Irving



Street Name:	9th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	32	32	32	32	32	32	20	20	20	20	20	20
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	30	195	93	58	277	57	50	114	53	62	242	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	195	93	58	277	57	50	114	53	62	242	120
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	195	93	58	277	57	50	114	53	62	242	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	31	203	97	60	289	59	52	119	55	65	252	125
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	203	97	60	289	59	52	119	55	65	252	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	203	97	60	289	59	52	119	55	65	252	125
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.67	0.66	0.65	0.65	0.65	0.60	0.60	0.59	0.65	0.65	0.64
Lanes:	0.09	0.61	0.30	0.15	0.70	0.15	0.23	0.52	0.25	0.14	0.57	0.29
Final Sat.:	119	772	368	183	876	180	261	595	277	180	701	347
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.26	0.33	0.33	0.33	0.20	0.20	0.20	0.36	0.36	0.36
Crit Moves:					****						****	
Green/Cycle:	0.53	0.53	0.53	0.53	0.53	0.53	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.49	0.49	0.49	0.62	0.62	0.62	0.60	0.60	0.60	1.08	1.08	1.08
Uniform Del:	8.9	8.9	8.9	9.7	9.7	9.7	16.7	16.7	16.7	20.0	20.0	20.0
IncremntDel:	2.6	2.6	2.6	4.3	4.3	4.3	6.9	6.9	6.9	67.4	67.4	67.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.4	11.4	11.4	14.0	14.0	14.0	23.5	23.5	23.5	87.4	87.4	87.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.4	11.4	11.4	14.0	14.0	14.0	23.5	23.5	23.5	87.4	87.4	87.4
LOS by Move:	B	B	B	B	B	B	C	C	C	F	F	F
HCM2kAvgQ:	4	4	4	5	5	5	4	4	4	13	13	13

Note: Queue reported is the number of cars per lane.

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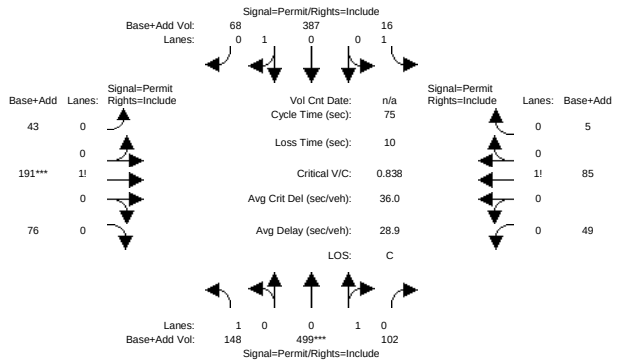
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #8: 7th Ave / Irving



Street Name:	7th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	38	38	38	38	38	38	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	148	499	102	16	387	68	43	191	76	49	85	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	499	102	16	387	68	43	191	76	49	85	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	499	102	16	387	68	43	191	76	49	85	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	159	537	110	17	416	73	46	205	82	53	91	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	537	110	17	416	73	46	205	82	53	91	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	537	110	17	416	73	46	205	82	53	91	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.30	0.73	0.72	0.20	0.73	0.72	0.67	0.68	0.67	0.60	0.61	0.61
Lanes:	1.00	0.83	0.17	1.00	0.85	0.15	0.14	0.61	0.25	0.35	0.61	0.04
Final Sat.:	578	1146	234	378	1178	207	178	791	315	406	705	41
Capacity Analysis Module:												
Vol/Sat:	0.28	0.47	0.47	0.05	0.35	0.35	0.26	0.26	0.26	0.13	0.13	0.13
Crit Moves:		****						****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.37	0.37	0.37	0.37	0.37	0.37
Volume/Cap:	0.55	0.94	0.94	0.09	0.71	0.71	0.70	0.70	0.70	0.35	0.35	0.35
Uniform Del:	13.1	17.9	17.9	10.0	14.7	14.7	20.5	20.5	20.5	17.4	17.4	17.4
IncremntDel:	7.4	21.8	21.8	1.0	6.0	6.0	8.5	8.5	8.5	2.3	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.5	39.6	39.6	10.9	20.7	20.7	29.0	29.0	29.0	19.7	19.7	19.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.5	39.6	39.6	10.9	20.7	20.7	29.0	29.0	29.0	19.7	19.7	19.7
LOS by Move:	C	D	D	B	C	C	C	C	C	B	B	B
HCM2kAvgQ:	2	14	14	0	10	10	7	7	7	3	3	3

Note: Queue reported is the number of cars per lane.

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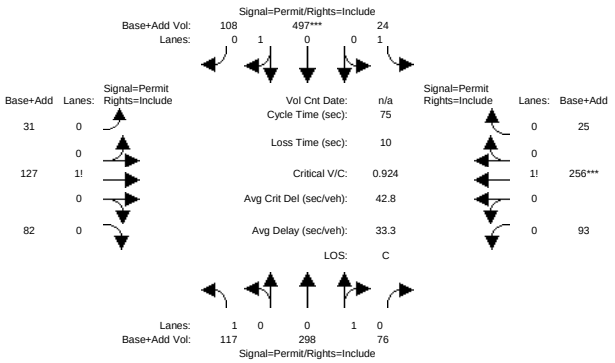
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #8: 7th Ave / Irving



Street Name:	7th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	38	38	38	38	38	38	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	117	298	76	24	497	108	31	127	82	93	256	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	298	76	24	497	108	31	127	82	93	256	25
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	298	76	24	497	108	31	127	82	93	256	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	124	317	81	26	529	115	33	135	87	99	272	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	124	317	81	26	529	115	33	135	87	99	272	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	124	317	81	26	529	115	33	135	87	99	272	27
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.20	0.72	0.72	0.37	0.73	0.72	0.65	0.66	0.64	0.62	0.63	0.62
Lanes:	1.00	0.80	0.20	1.00	0.82	0.18	0.13	0.52	0.35	0.25	0.68	0.07
Final Sat.:	379	1094	279	705	1132	246	160	654	422	295	812	79
Capacity Analysis Module:												
Vol/Sat:	0.33	0.29	0.29	0.04	0.47	0.47	0.21	0.21	0.21	0.34	0.34	0.34
Crit Moves:					****						****	
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.37	0.37	0.37	0.37	0.37	0.37
Volume/Cap:	0.66	0.58	0.58	0.07	0.93	0.93	0.56	0.56	0.56	0.91	0.91	0.91
Uniform Del:	14.1	13.4	13.4	9.9	17.8	17.8	19.1	19.1	19.1	22.8	22.8	22.8
IncremntDel:	16.4	3.6	3.6	0.4	21.5	21.5	4.9	4.9	4.9	25.5	25.5	25.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.5	16.9	16.9	10.3	39.4	39.4	24.0	24.0	24.0	48.3	48.3	48.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.5	16.9	16.9	10.3	39.4	39.4	24.0	24.0	24.0	48.3	48.3	48.3
LOS by Move:	C	B	B	B	D	D	C	C	C	D	D	D
HCM2kAvgQ:	2	7	6	0	18	18	5	5	5	11	11	11

Note: Queue reported is the number of cars per lane.

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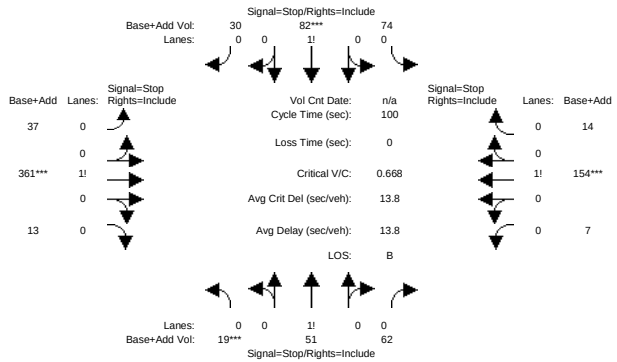
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #9: 4th Ave / Irving



Street Name:	4th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	19	51	62	74	82	30	37	361	13	7	154	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	51	62	74	82	30	37	361	13	7	154	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	51	62	74	82	30	37	361	13	7	154	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	21	56	68	81	90	33	41	397	14	8	169	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	56	68	81	90	33	41	397	14	8	169	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	56	68	81	90	33	41	397	14	8	169	15
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.14	0.39	0.47	0.40	0.44	0.16	0.09	0.88	0.03	0.04	0.88	0.08
Final Sat.:	82	219	267	228	252	92	61	594	21	24	535	49
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.26	0.36	0.36	0.36	0.67	0.67	0.67	0.32	0.32	0.32
Crit Moves:	****				****			****			****	
Delay/Veh:	10.3	10.3	10.3	11.5	11.5	11.5	17.2	17.2	17.2	10.8	10.8	10.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.3	10.3	10.3	11.5	11.5	11.5	17.2	17.2	17.2	10.8	10.8	10.8
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
ApproachDel:	10.3			11.5			17.2			10.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.3			11.5			17.2			10.8		
LOS by Appr:	B			B			C			B		
AllWayAvgQ:	0.3	0.3	0.3	0.4	0.4	0.4	1.7	1.7	1.7	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

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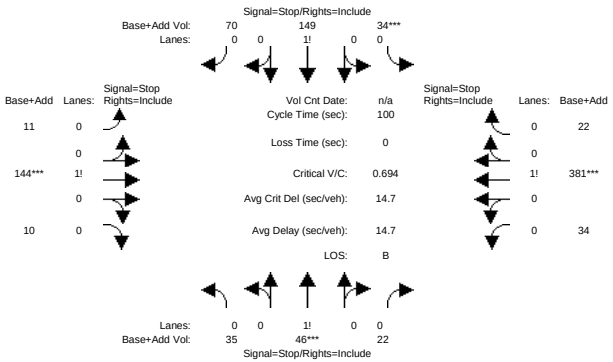
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #9: 4th Ave / Irving



Street Name:	4th Avenue						Irving Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	35	46	22	34	149	70	11	144	10	34	381	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	46	22	34	149	70	11	144	10	34	381	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	46	22	34	149	70	11	144	10	34	381	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	37	49	23	36	159	74	12	153	11	36	405	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	49	23	36	159	74	12	153	11	36	405	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	49	23	36	159	74	12	153	11	36	405	23
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.34	0.45	0.21	0.13	0.59	0.28	0.07	0.87	0.06	0.08	0.87	0.05
Final Sat.:	180	237	113	80	352	165	39	515	36	52	584	34
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.21	0.45	0.45	0.45	0.30	0.30	0.30	0.69	0.69	0.69
Crit Moves:		****			****			****			****	
Delay/Veh:	10.3	10.3	10.3	12.6	12.6	12.6	10.8	10.8	10.8	18.4	18.4	18.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.3	10.3	10.3	12.6	12.6	12.6	10.8	10.8	10.8	18.4	18.4	18.4
LOS by Move:	B	B	B	B	B	B	B	B	B	C	C	C
ApproachDel:	10.3			12.6			10.8			18.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.3			12.6			10.8			18.4		
LOS by Appr:	B			B			B			C		
AllWayAvgQ:	0.2	0.2	0.2	0.7	0.7	0.7	0.3	0.3	0.3	1.9	1.9	1.9

Note: Queue reported is the number of cars per lane.

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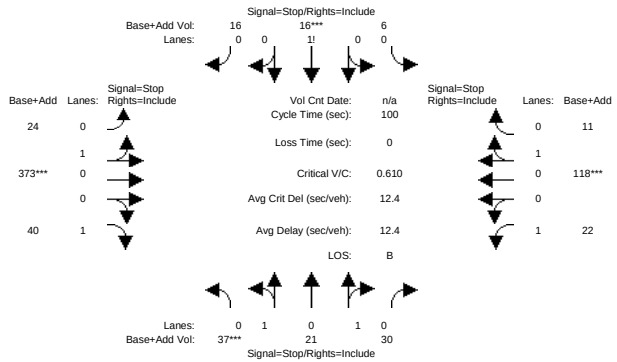
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #10: 2nd Avenue / Irving



Street Name:	2nd Avenue									Irving					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	37	21	30	6	16	16	24	373	40	22	118	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	21	30	6	16	16	24	373	40	22	118	11
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	21	30	6	16	16	24	373	40	22	118	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	40	23	32	6	17	17	26	401	43	24	127	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	23	32	6	17	17	26	401	43	24	127	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	23	32	6	17	17	26	401	43	24	127	12
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.84	0.48	0.68	0.16	0.42	0.42	0.06	0.94	1.00	1.00	0.91	0.09
Final Sat.:	434	270	403	87	233	233	42	658	810	601	608	57
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.08	0.07	0.07	0.07	0.61	0.61	0.05	0.04	0.21	0.21
Crit Moves:	****				****			****			****	
Delay/Veh:	9.8	9.1	8.7	9.4	9.4	9.4	15.2	15.2	7.3	8.8	9.3	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.8	9.1	8.7	9.4	9.4	9.4	15.2	15.2	7.3	8.8	9.3	9.3
LOS by Move:	A	A	A	A	A	A	C	C	A	A	A	A
ApproachDel:	9.3			9.4			14.5			9.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	9.3			9.4			14.5			9.2		
LOS by Appr:	A			A			B			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	1.4	1.4	0.1	0.0	0.2	0.2

Note: Queue reported is the number of cars per lane.

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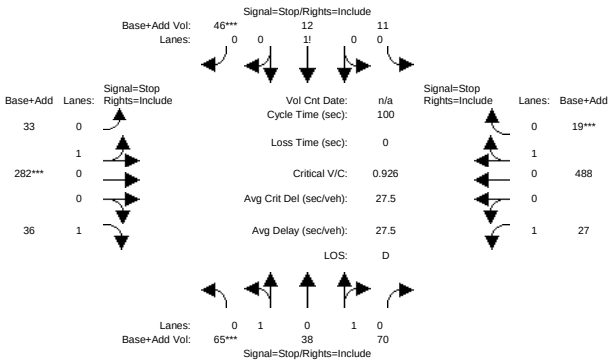
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #10: 2nd Avenue / Irving



Street Name:	2nd Avenue									Irving					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	65	38	70	11	12	46	33	282	36	27	488	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	38	70	11	12	46	33	282	36	27	488	19
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	38	70	11	12	46	33	282	36	27	488	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	72	42	78	12	13	51	37	313	40	30	542	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	42	78	12	13	51	37	313	40	30	542	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	42	78	12	13	51	37	313	40	30	542	21
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.75	0.44	0.81	0.16	0.17	0.67	0.10	0.90	1.00	1.00	0.96	0.04
Final Sat.:	341	211	417	74	81	310	59	508	639	550	585	23
Capacity Analysis Module:												
Vol/Sat:	0.21	0.20	0.19	0.16	0.16	0.16	0.62	0.62	0.06	0.05	0.93	0.93
Crit Moves:	****					****		****				****
Delay/Veh:	12.2	11.5	10.7	11.5	11.5	11.5	17.9	17.9	8.5	9.5	43.5	43.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.2	11.5	10.7	11.5	11.5	11.5	17.9	17.9	8.5	9.5	43.5	43.5
LOS by Move:	B	B	B	B	B	B	C	C	A	A	E	E
ApproachDel:	11.4			11.5			17.0			41.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	11.4			11.5			17.0			41.7		
LOS by Appr:	B			B			C			E		
AllWayAvgQ:	0.2	0.2	0.2	0.2	0.2	0.2	1.4	1.4	0.1	0.1	5.9	5.9

Note: Queue reported is the number of cars per lane.

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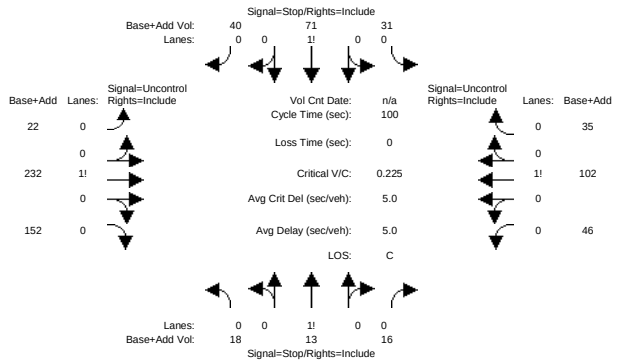
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #11: Arguello / Irving-Carl




```
Street Name:            Arguello                    Carl - Irving
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      18   13   16    31   71   40    22  232  152    46  102   35
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   18   13   16    31   71   40    22  232  152    46  102   35
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   18   13   16    31   71   40    22  232  152    46  102   35
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92
PHF Volume:    20   14   17    34   77   43    24  252  165    50  111   38
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
FinalVolume:   20   14   17    34   77   43    24  252  165    50  111   38
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  673  632   335   628  695   130   149 xxxx xxxxx   417 xxxx xxxxx
Potent Cap.:  369  398   707   395  366   920  1433 xxxx xxxxx  1142 xxxx xxxxx
Move Cap.:    278  373   707   357  343   920  1433 xxxx xxxxx  1142 xxxx xxxxx
Volume/Cap:  0.07 0.04  0.02  0.09 0.22  0.05  0.02 xxxx  xxxx  0.04 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.6 xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A     *     *     A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  384 xxxxx  xxxx  421 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.5 xxxxx xxxxx  1.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 15.8 xxxxx xxxxx 18.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    C     *     *    *     *     *    *     *
ApproachDel:      15.8            18.4           xxxxxx          xxxxxx
ApproachLOS:         C               C              *               *
Note: Queue reported is the number of cars per lane.
```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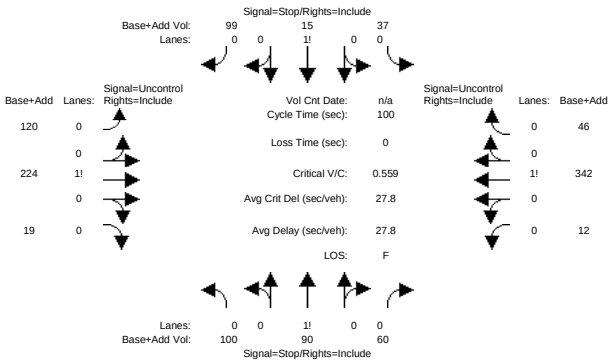
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #11: Arguello / Irving-Carl




```
Street Name:            Arguello                    Carl - Irving
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     100   90   60    37   15   99   120  224   19    12  342   46
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  100   90   60    37   15   99   120  224   19    12  342   46
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  100   90   60    37   15   99   120  224   19    12  342   46
User Adj:    0.60 0.70 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.84 0.84 0.84  0.84 0.84 0.84  0.84 0.84 0.84  0.84 0.84 0.84
PHF Volume:    71   75   71    44   18  118   143  267   23    14  407   55
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
FinalVolume:   71   75   71    44   18  118   143  267   23    14  407   55
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1  6.5   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1095 1054   278  1100 1038   435   462 xxxx xxxxx   289 xxxx xxxxx
Potent Cap.:  191  226   761   190  231   621  1099 xxxx xxxxx  1273 xxxx xxxxx
Move Cap.:    128  192   761   107  196   621  1099 xxxx xxxxx  1273 xxxx xxxxx
Volume/Cap:  0.56 0.39  0.09  0.41 0.09  0.19  0.13 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.4 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.8 xxxx xxxxx   7.9 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A     *     *     A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  209 xxxxx  xxxx  259 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  9.6 xxxxx xxxxx  4.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  123 xxxxx xxxxx 45.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    F     *     *    E     *     *    *     *     *    *     *
ApproachDel:      122.8            45.3           xxxxxx          xxxxxx
ApproachLOS:         F               E              *               *
Note: Queue reported is the number of cars per lane.
```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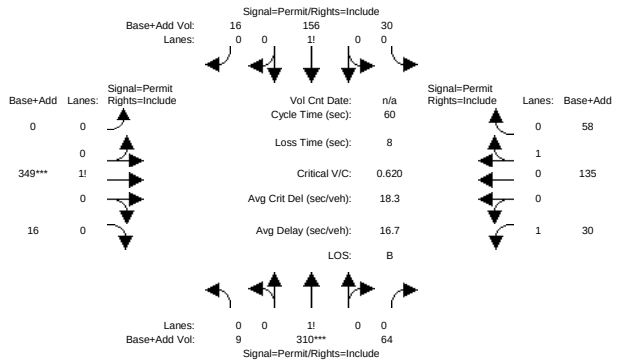
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #12: 9th Avenue / Judah Street



Street Name:	9th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	9	310	64	30	156	16	0	349	16	30	135	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	310	64	30	156	16	0	349	16	30	135	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	310	64	30	156	16	0	349	16	30	135	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	9	323	67	31	163	17	0	364	17	31	141	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	323	67	31	163	17	0	364	17	31	141	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	323	67	31	163	17	0	364	17	31	141	60
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.70	0.66	0.67	0.66	1.00	0.83	0.83	0.60	0.70	0.68
Lanes:	0.02	0.81	0.17	0.15	0.77	0.08	0.00	0.96	0.04	1.00	0.69	0.31
Final Sat.:	32	1091	225	188	977	100	0	1509	69	1142	922	396
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.30	0.17	0.17	0.17	0.00	0.24	0.24	0.03	0.15	0.15
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.00	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.57	0.57	0.57	0.32	0.32	0.32	0.00	0.69	0.69	0.08	0.44	0.44
Uniform Del:	10.0	10.0	10.0	8.4	8.4	8.4	0.0	16.7	16.7	13.0	15.0	15.0
IncremntDel:	3.4	3.4	3.4	1.3	1.3	1.3	0.0	6.9	6.9	0.4	3.0	3.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.4	13.4	13.4	9.7	9.7	9.7	0.0	23.6	23.6	13.4	17.9	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.4	13.4	13.4	9.7	9.7	9.7	0.0	23.6	23.6	13.4	17.9	17.9
LOS by Move:	B	B	B	A	A	A	A	C	C	B	B	B
HCM2kAvgQ:	6	6	6	2	2	2	0	7	7	0	3	3

Note: Queue reported is the number of cars per lane.

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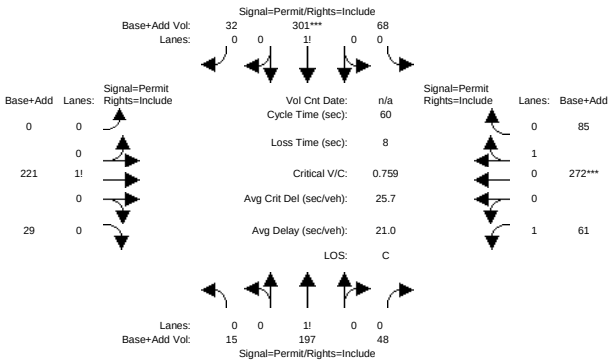
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #12: 9th Avenue / Judah Street



Street Name:	9th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	21	21	21	21	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	15	197	48	68	301	32	0	221	29	61	272	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	197	48	68	301	32	0	221	29	61	272	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	197	48	68	301	32	0	221	29	61	272	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	17	219	53	76	334	36	0	246	32	68	302	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	219	53	76	334	36	0	246	32	68	302	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	219	53	76	334	36	0	246	32	68	302	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.69	0.69	0.65	0.65	0.65	1.00	0.82	0.82	0.57	0.71	0.69
Lanes:	0.06	0.76	0.18	0.17	0.75	0.08	0.00	0.88	0.12	1.00	0.76	0.24
Final Sat.:	76	995	242	210	928	99	0	1380	181	1092	1016	318
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.36	0.36	0.36	0.00	0.18	0.18	0.06	0.30	0.30
Crit Moves:					****						****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.00	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.43	0.43	0.43	0.70	0.70	0.70	0.00	0.51	0.51	0.18	0.85	0.85
Uniform Del:	9.0	9.0	9.0	11.0	11.0	11.0	0.0	15.4	15.4	13.5	18.0	18.0
IncremntDel:	2.0	2.0	2.0	6.2	6.2	6.2	0.0	3.4	3.4	1.0	17.3	17.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.9	10.9	10.9	17.2	17.2	17.2	0.0	18.8	18.8	14.5	35.4	35.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	10.9	10.9	17.2	17.2	17.2	0.0	18.8	18.8	14.5	35.4	35.4
LOS by Move:	B	B	B	B	B	B	A	B	B	B	D	D
HCM2kAvgQ:	4	4	4	7	7	7	0	4	4	1	10	10

Note: Queue reported is the number of cars per lane.

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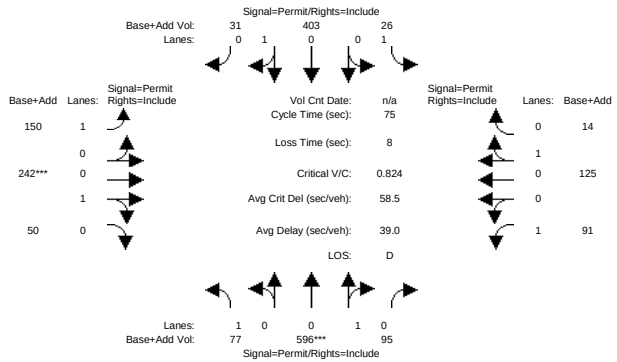
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #13: 7th Avenue / Judah Street



Street Name:	7th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	36	36	36	36	36	36	31	31	31	31	31	31
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	77	596	95	26	403	31	150	242	50	91	125	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	596	95	26	403	31	150	242	50	91	125	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	596	95	26	403	31	150	242	50	91	125	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	79	614	98	27	415	32	155	249	52	94	129	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	614	98	27	415	32	155	249	52	94	129	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	614	98	27	415	32	155	249	52	94	129	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.31	0.73	0.73	0.13	0.74	0.74	0.53	0.71	0.70	0.40	0.72	0.72
Lanes:	1.00	0.86	0.14	1.00	0.93	0.07	1.00	0.83	0.17	1.00	0.90	0.10
Final Sat.:	598	1196	191	249	1302	100	1016	1120	231	752	1230	138
Capacity Analysis Module:												
Vol/Sat:	0.13	0.51	0.51	0.11	0.32	0.32	0.15	0.22	0.22	0.12	0.10	0.10
Crit Moves:		****						****				
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Volume/Cap:	0.28	1.07	1.07	0.22	0.66	0.66	0.37	0.54	0.54	0.30	0.25	0.25
Uniform Del:	11.7	19.5	19.5	11.4	14.9	14.9	15.2	16.6	16.6	14.7	14.4	14.4
IncremntDel:	2.4	55.2	55.2	4.3	5.1	5.1	2.5	3.7	3.7	2.5	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.1	74.7	74.7	15.6	20.0	20.0	17.7	20.3	20.3	17.2	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.1	74.7	74.7	15.6	20.0	20.0	17.7	20.3	20.3	17.2	15.5	15.5
LOS by Move:	B	E	E	B	C	C	B	C	C	B	B	B
HCM2kAvgQ:	1	22	21	0	8	8	3	6	6	2	2	2

Note: Queue reported is the number of cars per lane.

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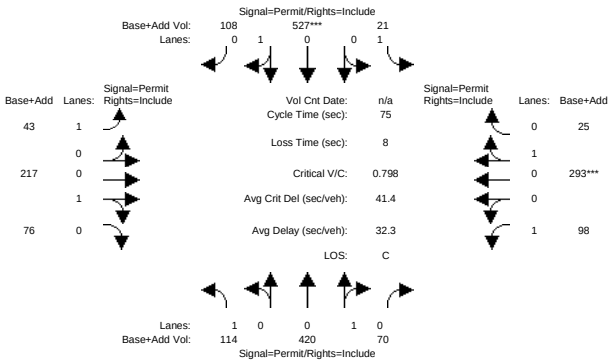
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #13: 7th Avenue / Judah Street



Street Name:	7th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	36	36	36	36	36	36	31	31	31	31	31	31
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	114	420	70	21	527	108	43	217	76	98	293	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	420	70	21	527	108	43	217	76	98	293	25
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	420	70	21	527	108	43	217	76	98	293	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	433	72	22	543	111	44	224	78	101	302	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	433	72	22	543	111	44	224	78	101	302	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	433	72	22	543	111	44	224	78	101	302	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.17	0.73	0.73	0.27	0.73	0.72	0.37	0.70	0.69	0.40	0.72	0.72
Lanes:	1.00	0.86	0.14	1.00	0.83	0.17	1.00	0.74	0.26	1.00	0.92	0.08
Final Sat.:	322	1189	198	517	1146	235	710	985	345	751	1264	108
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.36	0.04	0.47	0.47	0.06	0.23	0.23	0.13	0.24	0.24
Crit Moves:					****						****	
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Volume/Cap:	0.76	0.76	0.76	0.09	0.99	0.99	0.15	0.55	0.55	0.33	0.58	0.58
Uniform Del:	16.0	16.0	16.0	10.6	19.3	19.3	13.8	16.7	16.7	14.9	17.0	17.0
IncremntDel:	29.0	7.9	7.9	0.7	32.2	32.2	1.1	3.9	3.9	2.8	4.2	4.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.0	23.9	23.9	11.3	51.4	51.4	14.9	20.6	20.6	17.7	21.2	21.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.0	23.9	23.9	11.3	51.4	51.4	14.9	20.6	20.6	17.7	21.2	21.2
LOS by Move:	D	C	C	B	D	D	B	C	C	B	C	C
HCM2kAvgQ:	2	9	9	0	17	17	1	6	6	2	7	7

Note: Queue reported is the number of cars per lane.

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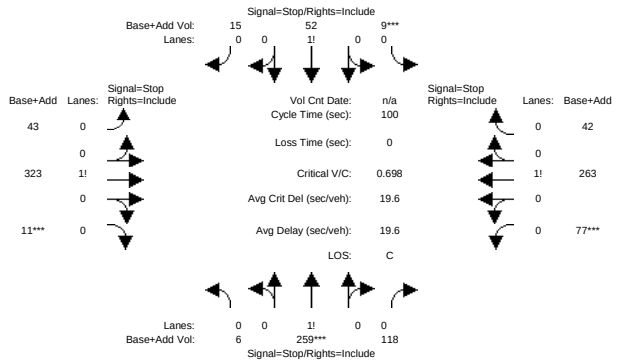
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #14: 6th Avenue / Judah Street



Street Name:	6th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	6	259	118	9	52	15	43	323	11	77	263	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	259	118	9	52	15	43	323	11	77	263	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	259	118	9	52	15	43	323	11	77	263	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	6	267	122	9	54	15	44	333	11	79	271	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	267	122	9	54	15	44	333	11	79	271	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	267	122	9	54	15	44	333	11	79	271	43
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.68	0.31	0.12	0.68	0.20	0.11	0.86	0.03	0.20	0.69	0.11
Final Sat.:	9	382	174	48	279	80	65	486	17	115	393	63
Capacity Analysis Module:												
Vol/Sat:	0.70	0.70	0.70	0.19	0.19	0.19	0.68	0.68	0.68	0.69	0.69	0.69
Crit Moves:		****		****					****	****		
Delay/Veh:	20.3	20.3	20.3	11.2	11.2	11.2	20.0	20.0	20.0	20.1	20.1	20.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.3	20.3	20.3	11.2	11.2	11.2	20.0	20.0	20.0	20.1	20.1	20.1
LOS by Move:	C	C	C	B	B	B	C	C	C	C	C	C
ApproachDel:		20.3			11.2			20.0			20.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		20.3			11.2			20.0			20.1	
LOS by Appr:		C			B			C			C	
AllWayAvgQ:	1.8	1.8	1.8	0.1	0.1	0.1	1.7	1.7	1.7	1.8	1.8	1.8

Note: Queue reported is the number of cars per lane.

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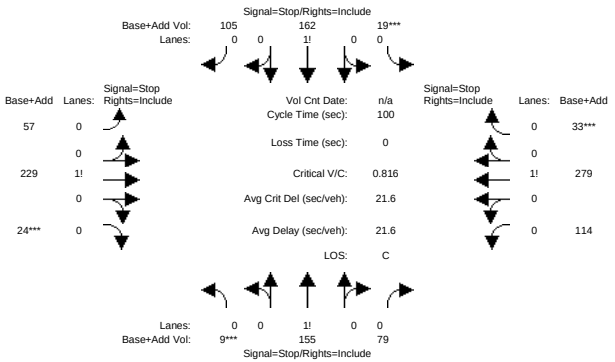
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #14: 6th Avenue / Judah Street



Street Name:	6th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	9	155	79	19	162	105	57	229	24	114	279	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	155	79	19	162	105	57	229	24	114	279	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	155	79	19	162	105	57	229	24	114	279	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	9	161	82	20	169	109	59	239	25	119	291	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	161	82	20	169	109	59	239	25	119	291	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	161	82	20	169	109	59	239	25	119	291	34
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.64	0.32	0.06	0.57	0.37	0.18	0.74	0.08	0.27	0.65	0.08
Final Sat.:	17	298	152	33	277	180	92	371	39	146	356	42
Capacity Analysis Module:												
Vol/Sat:	0.54	0.54	0.54	0.61	0.61	0.61	0.64	0.64	0.64	0.82	0.82	0.82
Crit Moves:	****			****					****			****
Delay/Veh:	15.9	15.9	15.9	17.6	17.6	17.6	19.0	19.0	19.0	29.4	29.4	29.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.9	15.9	17.6	17.6	17.6	19.0	19.0	19.0	29.4	29.4	29.4
LOS by Move:	C	C	C	C	C	C	C	C	C	D	D	D
ApproachDel:		15.9			17.6			19.0			29.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.9			17.6			19.0			29.4	
LOS by Appr:		C			C			C			D	
AllWayAvgQ:	0.8	0.8	0.8	1.1	1.1	1.1	1.3	1.3	1.3	3.0	3.0	3.0

Note: Queue reported is the number of cars per lane.

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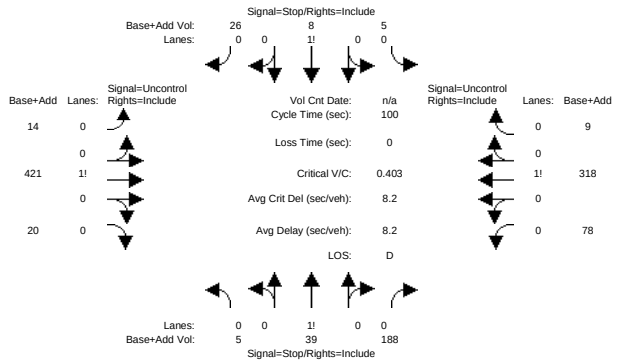
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #15: 5th Avenue / Judah Street



Street Name:	5th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	5	39	188	5	8	26	14	421	20	78	318	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	39	188	5	8	26	14	421	20	78	318	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	39	188	5	8	26	14	421	20	78	318	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	5	41	196	5	8	27	15	439	21	81	331	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	5	41	196	5	8	27	15	439	21	81	331	9
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1094	1081	549	1195	1087	436	391	xxxx	xxxxx	509	xxxx	xxxxx
Potent Cap.:	191	218	535	163	216	620	1168	xxxx	xxxxx	1056	xxxx	xxxxx
Move Cap.:	148	178	486	68	177	563	1112	xxxx	xxxxx	1005	xxxx	xxxxx
Volume/Cap:	0.04	0.23	0.40	0.08	0.05	0.05	0.01	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	8.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	363	xxxxx	xxxx	236	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	4.6	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	32.6	xxxxx	xxxxx	23.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	C	*	*	*	*	*	*	*
ApproachDel:		32.6			23.4		xxxxxx			xxxxxx		
ApproachLOS:		D			C		*			*		

Note: Queue reported is the number of cars per lane.

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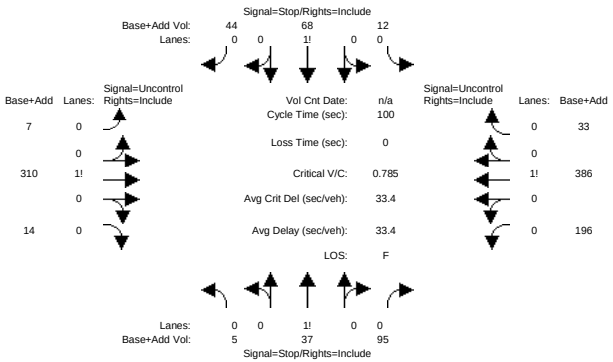
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #15: 5th Avenue / Judah Street



Street Name:	5th Avenue						Judah Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	5	37	95	12	68	44	7	310	14	196	386	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	37	95	12	68	44	7	310	14	196	386	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	37	95	12	68	44	7	310	14	196	386	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	6	42	108	14	77	50	8	352	16	223	439	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	42	108	14	77	50	8	352	16	223	439	38
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1443	1398	460	1454	1387	557	526	xxxx	xxxxx	418	xxxx	xxxxx
Potent Cap.:	110	141	601	108	143	530	1041	xxxx	xxxxx	1141	xxxx	xxxxx
Move Cap.:	27	97	545	43	98	480	991	xxxx	xxxxx	1087	xxxx	xxxxx
Volume/Cap:	0.21	0.43	0.20	0.32	0.78	0.10	0.01	xxxx	xxxx	0.20	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.8	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	9.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	184	xxxxx	xxxx	117	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	6.1	xxxxx	xxxxx	8.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	82.6	xxxxx	xxxxx	219	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	F	*	*	*	*	*	*	*
ApproachDel:		82.6			219.2		xxxxxx			xxxxxx		
ApproachLOS:		F			F		*			*		

Note: Queue reported is the number of cars per lane.

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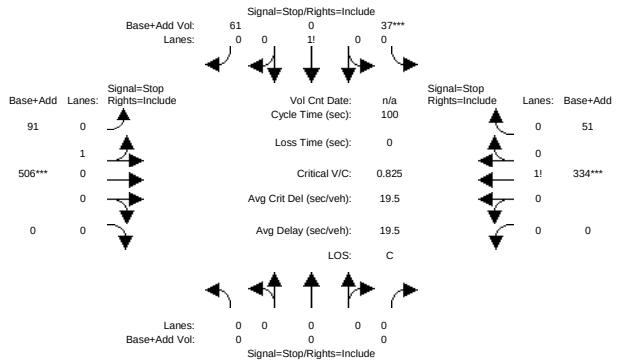
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #16: 4th Avenue / Parnassus



Street Name:	4th Avenue						Parnassus					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	37	0	61	91	506	0	0	334	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	37	0	61	91	506	0	0	334	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	37	0	61	91	506	0	0	334	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	39	0	64	96	533	0	0	352	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	39	0	64	96	533	0	0	352	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	39	0	64	96	533	0	0	352	54
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.37	0.01	0.62	0.15	0.85	0.00	0.00	0.87	0.13
Final Sat.:	0	0	0	219	0	361	116	646	0	0	636	97
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.18	0.00	0.18	0.82	0.82	xxxx	xxxx	0.55	0.55
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	9.8	9.8	9.8	25.1	25.1	0.0	0.0	13.4	13.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	9.8	9.8	9.8	25.1	25.1	0.0	0.0	13.4	13.4
LOS by Move:	*	*	*	A	A	A	D	D	*	*	B	B
ApproachDel:	xxxxxx			9.8			25.1			13.4		
Delay Adj:	xxxxx			1.00			1.00			1.00		
ApprAdjDel:	xxxxxx			9.8			25.1			13.4		
LOS by Appr:	*			A			D			B		
AllWayAvgQ:	0.0	0.0	0.0	0.2	0.2	0.2	3.7	3.7	3.7	1.1	1.1	1.1

Note: Queue reported is the number of cars per lane.

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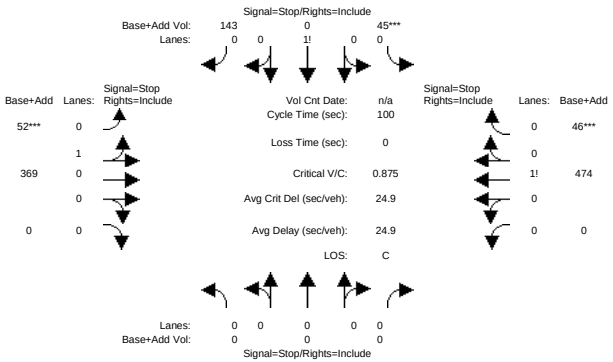
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #16: 4th Avenue / Parnassus



Street Name:	4th Avenue						Parnassus					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	45	0	143	52	369	0	0	474	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	45	0	143	52	369	0	0	474	46
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	45	0	143	52	369	0	0	474	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	0	0	0	52	0	166	60	429	0	0	551	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	52	0	166	60	429	0	0	551	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	52	0	166	60	429	0	0	551	53
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.24	0.00	0.76	0.12	0.88	0.00	0.00	0.91	0.09
Final Sat.:	0	0	0	137	0	436	81	578	0	0	630	61
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.38	xxxx	0.38	0.74	0.74	xxxx	xxxx	0.88	0.88
Crit Moves:				****			****					****
Delay/Veh:	0.0	0.0	0.0	12.2	0.0	12.2	21.5	21.5	0.0	0.0	32.3	32.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.2	0.0	12.2	21.5	21.5	0.0	0.0	32.3	32.3
LOS by Move:	*	*	*	B	*	B	C	C	*	*	D	D
ApproachDel:	xxxxxx			12.2			21.5			32.3		
Delay Adj:	xxxxx			1.00			1.00			1.00		
ApprAdjDel:	xxxxxx			12.2			21.5			32.3		
LOS by Appr:	*			B			C			D		
AllWayAvgQ:	0.0	0.0	0.0	0.5	0.5	0.5	2.4	2.4	2.4	4.6	4.6	4.6

Note: Queue reported is the number of cars per lane.

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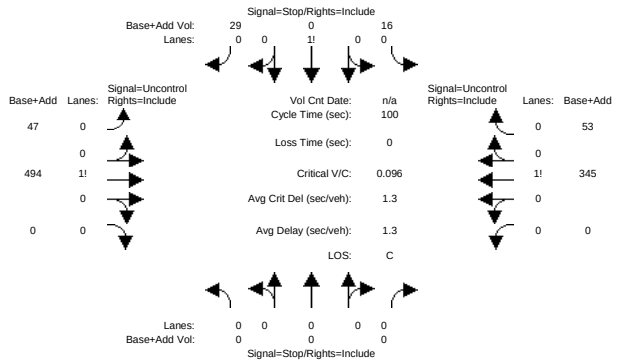
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #17: 3rd Avenue / Parnassus



Street Name:	3rd Avenue						Parnassus					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Volume Module:												
Base Vol:	0	0	0	16	0	29	47	494	0	0	345	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	16	0	29	47	494	0	0	345	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	16	0	29	47	494	0	0	345	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	0	0	0	18	0	32	52	543	0	0	379	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	18	0	32	52	543	0	0	379	58
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1154	1154	508	487	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	218	197	565	1076	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	183	169	495	1024	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.10	0.00	0.06	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	309	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	18.9	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			18.9			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

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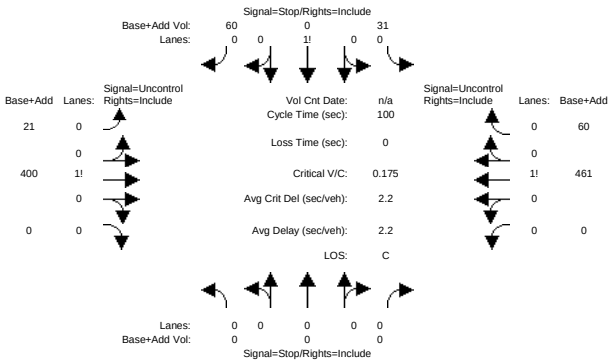
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #17: 3rd Avenue / Parnassus



Street Name:	3rd Avenue						Parnassus					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Volume Module:												
Base Vol:	0	0	0	31	0	60	21	400	0	0	461	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	31	0	60	21	400	0	0	461	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	31	0	60	21	400	0	0	461	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	0	0	0	34	0	66	23	440	0	0	507	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	34	0	66	23	440	0	0	507	66
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1125	1125	640	623	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	227	205	476	958	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	195	181	417	913	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.17	0.00	0.16	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	300	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.4	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	22.8	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			22.8			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

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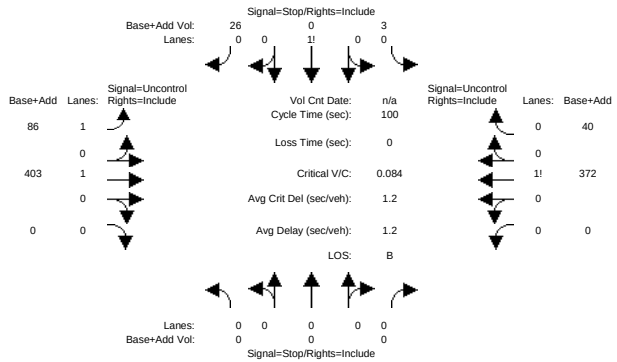
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #18: Hillway / Parnassus



Street Name:	Hillway						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	0	0	0	3	0	26	86	403	0	0	372	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	3	0	26	86	403	0	0	372	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	3	0	26	86	403	0	0	372	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	0	3	0	27	88	411	0	0	380	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	3	0	27	88	411	0	0	380	41
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1087	1087	500	470	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	239	216	571	1091	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	203	179	518	1039	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.02	0.00	0.05	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	446	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			13.6			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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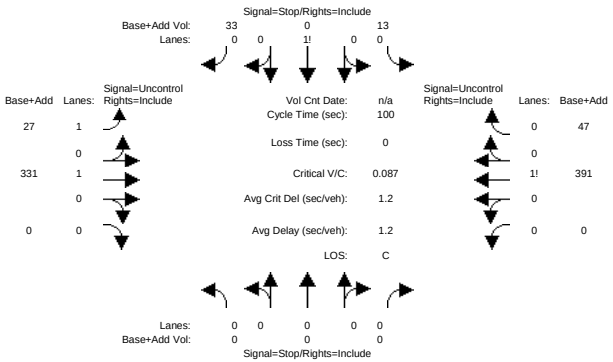
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #18: Hillway / Parnassus



Street Name:	Hillway						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Volume Module:												
Base Vol:	0	0	0	13	0	33	27	331	0	0	391	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	13	0	33	27	331	0	0	391	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	13	0	33	27	331	0	0	391	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
PHF Volume:	0	0	0	16	0	40	33	399	0	0	471	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	16	0	40	33	399	0	0	471	57
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1063	1063	599	578	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	247	223	501	996	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	218	195	455	948	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.07	0.00	0.09	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	348	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	17.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			17.3			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

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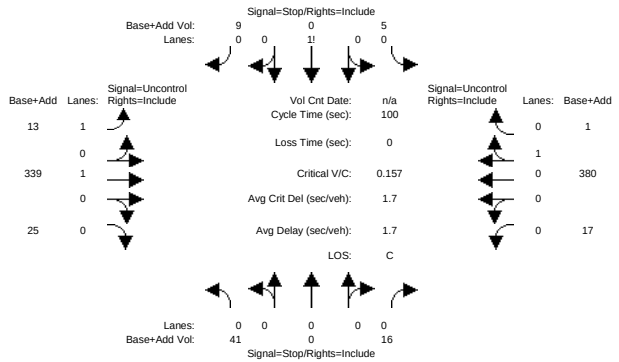
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #19: Hill Point / Parnassus



Street Name: Hill Point Parnassus Ave

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	41	0	16	5	0	9	13	339	25	17	380	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	0	16	5	0	9	13	339	25	17	380	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	0	16	5	0	9	13	339	25	17	380	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	43	0	17	5	0	9	14	357	26	18	400	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	43	0	17	5	0	9	14	357	26	18	400	1
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	838	834	370	842	847	401	401	xxxx	xxxxx	383	xxxx	xxxxx
Potent Cap.:	286	304	676	284	299	650	1158	xxxx	xxxxx	1175	xxxx	xxxxx
Move Cap.:	276	296	676	271	291	650	1158	xxxx	xxxxx	1175	xxxx	xxxxx
Volume/Cap:	0.16	0.00	0.02	0.02	0.00	0.01	0.01	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	331	xxxxx	xxxx	433	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.7	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	18.3	xxxxx	xxxxx	13.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	B	*	*	*	*	*	*	*
ApproachDel:		18.3			13.6			xxxxx			xxxxx	
ApproachLOS:		C			B			*			*	

Note: Queue reported is the number of cars per lane.

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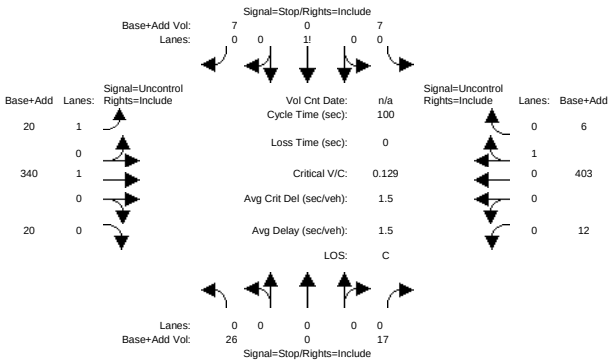
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #19: Hill Point / Parnassus



Street Name: Hill Point Parnassus Ave

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	26	0	17	7	0	7	20	340	20	12	403	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	0	17	7	0	7	20	340	20	12	403	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	0	17	7	0	7	20	340	20	12	403	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	30	0	20	8	0	8	23	391	23	14	463	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	30	0	20	8	0	8	23	391	23	14	463	7
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	947	946	402	952	954	467	470	xxxx	xxxxx	414	xxxx	xxxxx
Potent Cap.:	241	262	648	239	259	596	1092	xxxx	xxxxx	1145	xxxx	xxxxx
Move Cap.:	232	253	648	226	250	596	1092	xxxx	xxxxx	1145	xxxx	xxxxx
Volume/Cap:	0.13	0.00	0.03	0.04	0.00	0.01	0.02	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	8.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	311	xxxxx	xxxx	328	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.6	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	18.8	xxxxx	xxxxx	16.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	C	*	*	*	*	*	*	*
ApproachDel:		18.8			16.5			xxxxx			xxxxx	
ApproachLOS:		C			C			*			*	

Note: Queue reported is the number of cars per lane.

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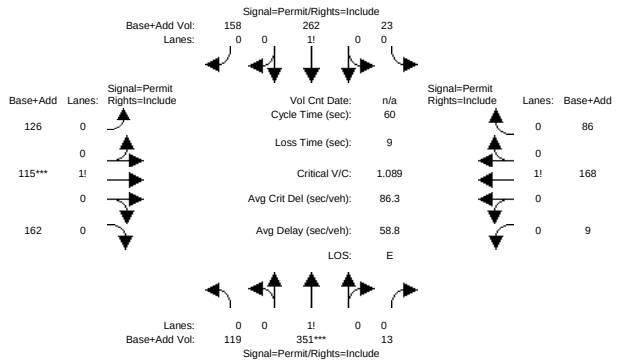
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #20: Stanyan / Parnassus



Street Name:	Stanyan						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	27	27	27	27	27	27	24	24	24	24	24	24
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	119	351	13	23	262	158	126	115	162	9	168	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	351	13	23	262	158	126	115	162	9	168	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	351	13	23	262	158	126	115	162	9	168	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	131	386	14	25	288	174	138	126	178	10	185	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	386	14	25	288	174	138	126	178	10	185	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	131	386	14	25	288	174	138	126	178	10	185	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.56	0.56	0.56	0.68	0.68	0.67	0.54	0.55	0.53	0.69	0.69	0.67
Lanes:	0.25	0.72	0.03	0.05	0.59	0.36	0.31	0.28	0.41	0.03	0.64	0.33
Final Sat.:	264	779	29	67	763	460	321	293	413	44	828	424
Capacity Analysis Module:												
Vol/Sat:	0.50	0.50	0.50	0.38	0.38	0.38	0.43	0.43	0.43	0.22	0.22	0.22
Crit Moves:		****						****				
Green/Cycle:	0.45	0.45	0.45	0.45	0.45	0.45	0.40	0.40	0.40	0.40	0.40	0.40
Volume/Cap:	1.10	1.10	1.10	0.84	0.84	0.84	1.08	1.08	1.08	0.56	0.56	0.56
Uniform Del:	16.5	16.5	16.5	14.6	14.6	14.6	18.0	18.0	18.0	13.9	13.9	13.9
IncremntDel:	71.2	71.2	71.2	13.5	13.5	13.5	66.5	66.5	66.5	4.3	4.3	4.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	87.7	87.7	87.7	28.1	28.1	28.1	84.5	84.5	84.5	18.2	18.2	18.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.7	87.7	87.7	28.1	28.1	28.1	84.5	84.5	84.5	18.2	18.2	18.2
LOS by Move:	F	F	F	C	C	C	F	F	F	B	B	B
HCM2kAvgQ:	20	21	21	10	10	10	15	15	15	5	5	5

Note: Queue reported is the number of cars per lane.

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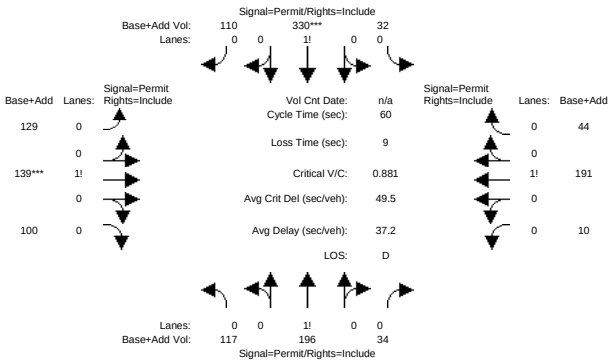
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #20: Stanyan / Parnassus



Street Name:	Stanyan						Parnassus Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	21	21	21	21	21	21
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	117	196	34	32	330	110	129	139	100	10	191	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	196	34	32	330	110	129	139	100	10	191	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	196	34	32	330	110	129	139	100	10	191	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	122	204	35	33	344	115	134	145	104	10	199	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	204	35	33	344	115	134	145	104	10	199	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	122	204	35	33	344	115	134	145	104	10	199	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.54	0.55	0.54	0.69	0.69	0.69	0.53	0.54	0.53	0.70	0.70	0.69
Lanes:	0.34	0.56	0.10	0.07	0.70	0.23	0.35	0.38	0.27	0.04	0.78	0.18
Final Sat.:	348	583	101	89	921	307	358	385	277	54	1035	238
Capacity Analysis Module:												
Vol/Sat:	0.35	0.35	0.35	0.37	0.37	0.37	0.38	0.38	0.38	0.19	0.19	0.19
Crit Moves:					****			****				
Green/Cycle:	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.70	0.70	0.70	0.75	0.75	0.75	1.07	1.07	1.07	0.55	0.55	0.55
Uniform Del:	11.5	11.5	11.5	12.0	12.0	12.0	19.5	19.5	19.5	15.7	15.7	15.7
IncremntDel:	7.7	7.7	7.7	7.6	7.6	7.6	68.5	68.5	68.5	4.6	4.6	4.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.2	19.2	19.2	19.5	19.5	19.5	88.0	88.0	88.0	20.3	20.3	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.2	19.2	19.2	19.5	19.5	19.5	88.0	88.0	88.0	20.3	20.3	20.3
LOS by Move:	B	B	B	B	B	B	F	F	F	C	C	C
HCM2kAvgQ:	7	7	7	8	8	8	13	13	13	5	5	5

Note: Queue reported is the number of cars per lane.

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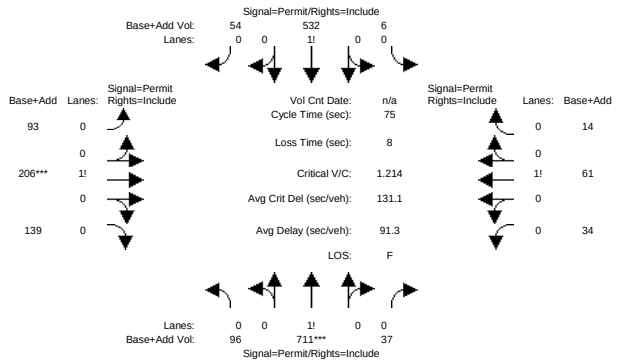
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #21: 7th Avenue / Kirkham Street



Street Name:	7th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	44	44	44	44	44	44	23	23	23	23	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	96	711	37	6	532	54	93	206	139	34	61	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	96	711	37	6	532	54	93	206	139	34	61	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	96	711	37	6	532	54	93	206	139	34	61	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	100	741	39	6	554	56	97	215	145	35	64	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	741	39	6	554	56	97	215	145	35	64	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	741	39	6	554	56	97	215	145	35	64	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.65	0.73	0.73	0.73	0.64	0.65	0.63	0.57	0.58	0.57
Lanes:	0.11	0.85	0.04	0.01	0.90	0.09	0.21	0.47	0.32	0.31	0.56	0.13
Final Sat.:	141	1046	54	14	1250	127	258	570	385	341	612	140
Capacity Analysis Module:												
Vol/Sat:	0.71	0.71	0.71	0.44	0.44	0.44	0.38	0.38	0.38	0.10	0.10	0.10
Crit Moves:		****						****				
Green/Cycle:	0.59	0.59	0.59	0.59	0.59	0.59	0.31	0.31	0.31	0.31	0.31	0.31
Volume/Cap:	1.21	1.21	1.21	0.76	0.76	0.76	1.23	1.23	1.23	0.34	0.34	0.34
Uniform Del:	15.5	15.5	15.5	11.5	11.5	11.5	26.0	26.0	26.0	20.1	20.1	20.1
IncremntDel:	105.9	106	105.9	6.5	6.5	6.5	123.6	124	123.6	2.7	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	121.4	121	121.4	18.0	18.0	18.0	149.6	150	149.6	22.8	22.8	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	121.4	121	121.4	18.0	18.0	18.0	149.6	150	149.6	22.8	22.8	22.8
LOS by Move:	F	F	F	B	B	B	F	F	F	C	C	C
HCM2kAvgQ:	42	42	42	11	11	11	24	24	24	2	2	2

Note: Queue reported is the number of cars per lane.

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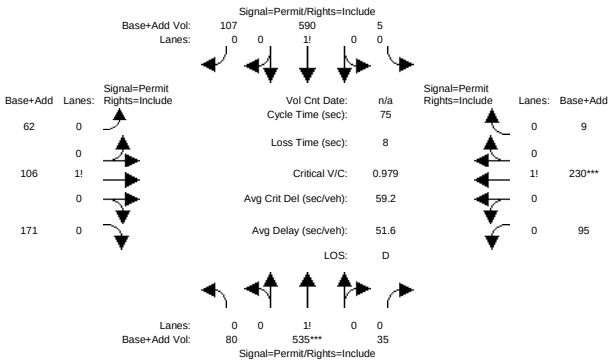
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #21: 7th Avenue / Kirkham Street



Street Name:	7th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	27	27	27	27	27	27
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	80	535	35	5	590	107	62	106	171	95	230	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	535	35	5	590	107	62	106	171	95	230	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	535	35	5	590	107	62	106	171	95	230	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	552	36	5	608	110	64	109	176	98	237	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	552	36	5	608	110	64	109	176	98	237	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	552	36	5	608	110	64	109	176	98	237	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	0.63	0.63	0.73	0.73	0.72	0.61	0.61	0.59	0.57	0.58	0.57
Lanes:	0.12	0.83	0.05	0.01	0.84	0.15	0.18	0.31	0.51	0.28	0.69	0.03
Final Sat.:	148	987	65	10	1162	211	210	358	578	310	752	29
Capacity Analysis Module:												
Vol/Sat:	0.56	0.56	0.56	0.52	0.52	0.52	0.30	0.30	0.30	0.32	0.32	0.32
Crit Moves:		****									****	
Green/Cycle:	0.53	0.53	0.53	0.53	0.53	0.53	0.36	0.36	0.36	0.36	0.36	0.36
Volume/Cap:	1.05	1.05	1.05	0.98	0.98	0.98	0.85	0.85	0.85	0.88	0.88	0.88
Uniform Del:	17.5	17.5	17.5	17.1	17.1	17.1	22.1	22.1	22.1	22.4	22.4	22.4
IncremntDel:	48.7	48.7	48.7	28.9	28.9	28.9	19.0	19.0	19.0	23.0	23.0	23.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.2	66.2	66.2	46.1	46.1	46.1	41.1	41.1	41.1	45.4	45.4	45.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	66.2	66.2	46.1	46.1	46.1	41.1	41.1	41.1	45.4	45.4	45.4
LOS by Move:	E	E	E	D	D	D	D	D	D	D	D	D
HCM2kAvgQ:	25	25	25	17	17	17	11	11	10	11	11	11

Note: Queue reported is the number of cars per lane.

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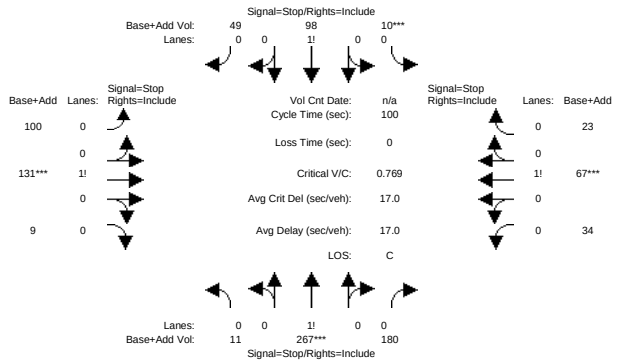
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #22: 6th Avenue / Kirkham Street



Street Name:	6th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	11	267	180	10	98	49	100	131	9	34	67	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	267	180	10	98	49	100	131	9	34	67	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	267	180	10	98	49	100	131	9	34	67	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	13	303	205	11	111	56	114	149	10	39	76	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	303	205	11	111	56	114	149	10	39	76	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	303	205	11	111	56	114	149	10	39	76	26
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.02	0.59	0.39	0.06	0.63	0.31	0.42	0.54	0.04	0.27	0.54	0.19
Final Sat.:	16	394	266	36	355	177	231	302	21	140	276	95
Capacity Analysis Module:												
Vol/Sat:	0.77	0.77	0.77	0.31	0.31	0.31	0.49	0.49	0.49	0.28	0.28	0.28
Crit Moves:		****		****				****			****	
Delay/Veh:	22.1	22.1	22.1	11.0	11.0	11.0	14.0	14.0	14.0	11.2	11.2	11.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.1	22.1	22.1	11.0	11.0	11.0	14.0	14.0	14.0	11.2	11.2	11.2
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:		22.1			11.0			14.0			11.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		22.1			11.0			14.0			11.2	
LOS by Appr:		C			B			B			B	
AllWayAvgQ:	2.6	2.6	2.6	0.4	0.4	0.4	0.8	0.8	0.8	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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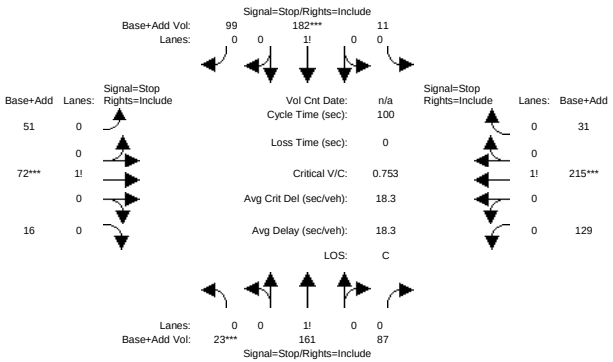
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #22: 6th Avenue / Kirkham Street



Street Name:	6th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	23	161	87	11	182	99	51	72	16	129	215	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	161	87	11	182	99	51	72	16	129	215	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	161	87	11	182	99	51	72	16	129	215	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	26	183	99	13	207	113	58	82	18	147	244	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	183	99	13	207	113	58	82	18	147	244	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	183	99	13	207	113	58	82	18	147	244	35
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.08	0.60	0.32	0.04	0.62	0.34	0.37	0.52	0.11	0.34	0.58	0.08
Final Sat.:	46	322	174	21	344	187	170	240	53	195	325	47
Capacity Analysis Module:												
Vol/Sat:	0.57	0.57	0.57	0.60	0.60	0.60	0.34	0.34	0.34	0.75	0.75	0.75
Crit Moves:	****				****			****			****	
Delay/Veh:	15.9	15.9	15.9	16.7	16.7	16.7	12.5	12.5	12.5	23.5	23.5	23.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.9	15.9	16.7	16.7	16.7	12.5	12.5	12.5	23.5	23.5	23.5
LOS by Move:	C	C	C	C	C	C	B	B	B	C	C	C
ApproachDel:		15.9			16.7			12.5			23.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.9			16.7			12.5			23.5	
LOS by Appr:		C			C			B			C	
AllWayAvgQ:	1.0	1.0	1.0	1.2	1.2	1.2	0.4	0.4	0.4	2.3	2.3	2.3

Note: Queue reported is the number of cars per lane.

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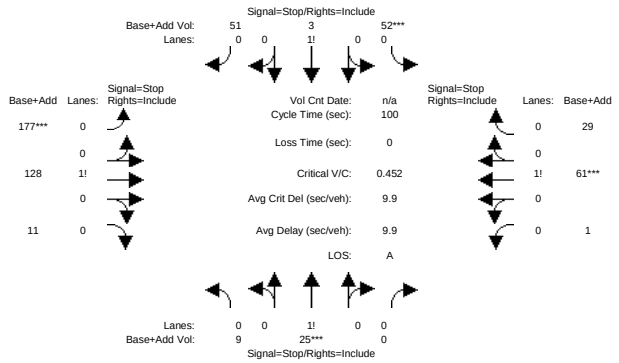
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #23: 5th Avenue / Kirkham Street



Street Name:	5th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	9	25	0	52	3	51	177	128	11	1	61	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	25	0	52	3	51	177	128	11	1	61	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	25	0	52	3	51	177	128	11	1	61	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	10	28	0	58	3	57	199	144	12	1	69	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	28	0	58	3	57	199	144	12	1	69	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	28	0	58	3	57	199	144	12	1	69	33
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.26	0.74	0.00	0.49	0.03	0.48	0.56	0.41	0.03	0.01	0.67	0.32
Final Sat.:	170	473	0	342	20	336	440	318	27	8	515	245
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	xxxx	0.17	0.17	0.17	0.45	0.45	0.45	0.13	0.13	0.13
Crit Moves:		****		****			****				****	
Delay/Veh:	8.4	8.4	0.0	8.7	8.7	8.7	11.0	11.0	11.0	8.1	8.1	8.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.4	8.4	0.0	8.7	8.7	8.7	11.0	11.0	11.0	8.1	8.1	8.1
LOS by Move:	A	A	*	A	A	A	B	B	B	A	A	A
ApproachDel:		8.4			8.7			11.0			8.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.4			8.7			11.0			8.1	
LOS by Appr:		A			A			B			A	
AllWayAvgQ:	0.1	0.1	0.1	0.2	0.2	0.2	0.8	0.8	0.8	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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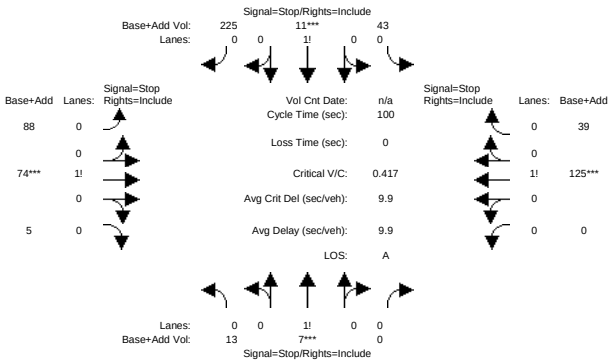
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #23: 5th Avenue / Kirkham Street



Street Name:	5th Avenue						Kirkham Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	13	7	0	43	11	225	88	74	5	0	125	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	13	7	0	43	11	225	88	74	5	0	125	39
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	7	0	43	11	225	88	74	5	0	125	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	15	8	0	50	13	262	102	86	6	0	145	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	8	0	50	13	262	102	86	6	0	145	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	8	0	50	13	262	102	86	6	0	145	45
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.65	0.35	0.00	0.15	0.04	0.81	0.53	0.44	0.03	0.00	0.76	0.24
Final Sat.:	397	214	0	120	31	628	358	301	20	0	539	168
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	xxxx	0.42	0.42	0.42	0.29	0.29	0.29	xxxx	0.27	0.27
Crit Moves:		****			****			****			****	
Delay/Veh:	8.5	8.5	0.0	10.3	10.3	10.3	9.9	9.9	9.9	0.0	9.4	9.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.5	8.5	0.0	10.3	10.3	10.3	9.9	9.9	9.9	0.0	9.4	9.4
LOS by Move:	A	A	*	B	B	B	A	A	A	*	A	A
ApproachDel:		8.5			10.3			9.9			9.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.5			10.3			9.9			9.4	
LOS by Appr:		A			B			A			A	
AllWayAvgQ:	0.0	0.0	0.0	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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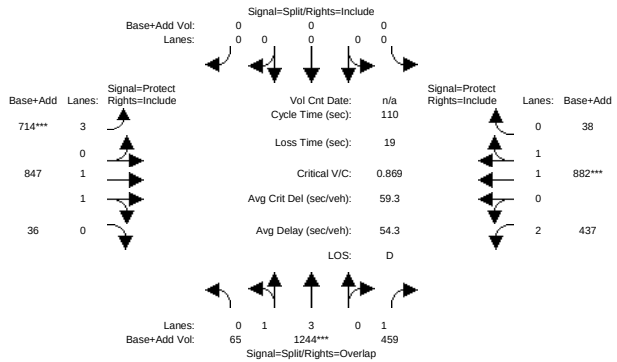
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	25	25	25	0	0	0	18	34	34	31	47	47
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	65	1244	459	0	0	0	714	847	36	437	882	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1244	459	0	0	0	714	847	36	437	882	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1244	459	0	0	0	714	847	36	437	882	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	1309	483	0	0	0	752	892	38	460	928	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1309	483	0	0	0	752	892	38	460	928	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1309	483	0	0	0	752	892	38	460	928	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.80	0.79	0.81	0.80
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	291	5572	1348	0	0	0	4480	2935	125	2987	2933	126
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.36	0.00	0.00	0.00	0.17	0.30	0.30	0.15	0.32	0.32
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.52	0.00	0.00	0.00	0.17	0.31	0.31	0.28	0.43	0.43
Volume/Cap:	1.01	1.01	0.69	0.00	0.00	0.00	1.01	0.98	0.98	0.54	0.74	0.74
Uniform Del:	42.2	42.2	20.0	0.0	0.0	0.0	45.8	37.5	37.5	33.4	26.4	26.4
IncremntDel:	26.0	26.0	5.6	0.0	0.0	0.0	34.7	24.3	24.3	2.5	3.8	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.2	68.2	25.7	0.0	0.0	0.0	80.5	61.9	61.9	35.9	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.2	68.2	25.7	0.0	0.0	0.0	80.5	61.9	61.9	35.9	30.2	30.2
LOS by Move:	E	E	C	A	A	A	F	E	E	D	C	C
HCM2kAvgQ:	13	13	11	0	0	0	9	16	16	7	16	16

Note: Queue reported is the number of cars per lane.

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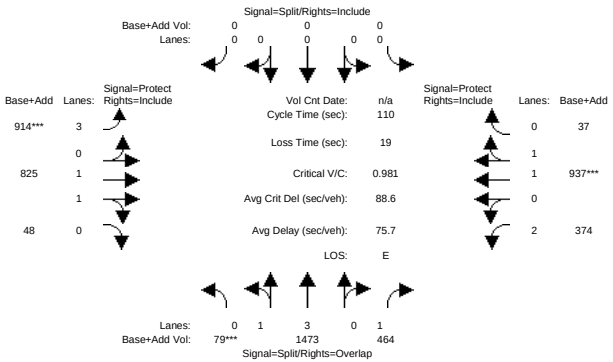
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	79	1473	464	0	0	0	914	825	48	374	937	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1473	464	0	0	0	914	825	48	374	937	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	1473	464	0	0	0	914	825	48	374	937	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	81	1519	478	0	0	0	942	851	49	386	966	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	1519	478	0	0	0	942	851	49	386	966	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	1519	478	0	0	0	942	851	49	386	966	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.80	0.80	0.79	0.81	0.80
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.89	0.11	2.00	1.92	0.08
Final Sat.:	298	5565	1350	0	0	0	4480	2885	168	2987	2944	116
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.35	0.00	0.00	0.00	0.21	0.29	0.29	0.13	0.33	0.33
Crit Moves:	****						****				****	
Green/Cycle:	0.35	0.35	0.49	0.00	0.00	0.00	0.16	0.34	0.34	0.13	0.31	0.31
Volume/Cap:	0.77	0.77	0.73	0.00	0.00	0.00	1.29	0.86	0.86	0.98	1.06	1.06
Uniform Del:	31.5	31.5	22.5	0.0	0.0	0.0	46.0	33.8	33.8	47.7	38.0	38.0
IncremntDel:	2.8	2.8	7.0	0.0	0.0	0.0	138.7	9.4	9.4	41.8	47.1	47.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.3	34.3	29.5	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.1	85.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.3	34.3	29.5	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.1	85.1
LOS by Move:	C	C	C	A	A	A	F	D	D	F	F	F
HCM2kAvgQ:	12	12	12	0	0	0	19	14	14	11	26	26

Note: Queue reported is the number of cars per lane.

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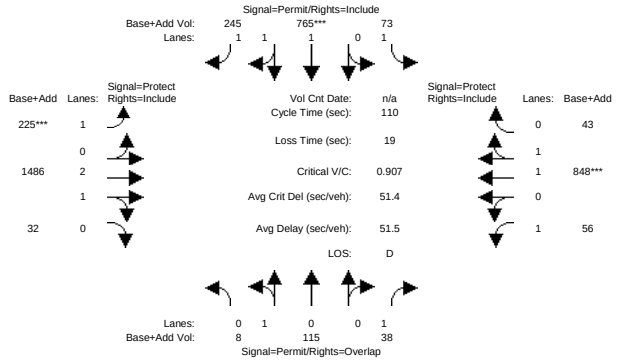
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	35	35	35	35	35	35	19	41	41	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	115	38	73	765	245	225	1486	32	56	848	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	115	38	73	765	245	225	1486	32	56	848	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	115	38	73	765	245	225	1486	32	56	848	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	9	124	41	78	823	263	242	1598	34	60	912	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	124	41	78	823	263	242	1598	34	60	912	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	124	41	78	823	263	242	1598	34	60	912	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.69	0.54	0.78	0.77	0.81	0.77	0.77	0.81	0.80	0.80
Lanes:	0.07	0.93	1.00	1.00	2.00	1.00	1.00	2.94	0.06	1.00	1.90	0.10
Final Sat.:	99	1423	1312	1032	2968	1456	1539	4275	92	1539	2882	146
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.03	0.08	0.28	0.18	0.16	0.37	0.37	0.04	0.32	0.32
Crit Moves:					****		****				****	
Green/Cycle:	0.32	0.32	0.45	0.32	0.32	0.32	0.17	0.37	0.37	0.14	0.34	0.34
Volume/Cap:	0.27	0.27	0.07	0.24	0.87	0.57	0.91	1.00	1.00	0.29	0.94	0.94
Uniform Del:	28.0	28.0	16.9	27.7	35.4	31.2	44.7	34.5	34.5	42.7	35.4	35.4
IncremntDel:	1.4	1.4	0.2	1.7	8.5	1.2	36.1	23.0	23.0	3.4	17.1	17.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	29.4	29.4	17.1	29.4	43.9	32.5	80.8	57.5	57.5	46.1	52.5	52.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	29.4	17.1	29.4	43.9	32.5	80.8	57.5	57.5	46.1	52.5	52.5
LOS by Move:	C	C	B	C	D	C	F	E	E	D	D	D
HCM2kAvgQ:	3	3	1	2	17	8	11	27	27	2	19	19

Note: Queue reported is the number of cars per lane.

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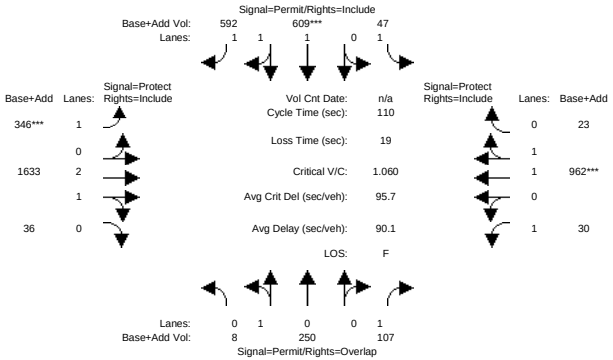
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	250	107	47	609	592	346	1633	36	30	962	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	250	107	47	609	592	346	1633	36	30	962	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	250	107	47	609	592	346	1633	36	30	962	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	8	258	110	48	628	610	357	1684	37	31	992	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	258	110	48	628	610	357	1684	37	31	992	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	258	110	48	628	610	357	1684	37	31	992	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.84	0.80	0.59	0.37	0.75	0.64	0.81	0.80	0.77	0.81	0.80
Lanes:	0.03	0.97	1.00	1.00	1.40	1.60	1.00	2.93	0.07	1.00	1.95	0.05
Final Sat.:	49	1539	1126	696	1995	1940	1539	4484	99	1539	2998	72
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.10	0.07	0.31	0.31	0.23	0.38	0.38	0.02	0.33	0.33
Crit Moves:					****		****				****	
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.47	0.47	0.20	0.20	0.89	0.89	1.70	1.12	1.12	0.15	0.98	0.98
Uniform Del:	27.5	27.5	15.8	24.6	33.4	33.4	47.5	36.5	36.5	41.9	36.2	36.2
IncremntDel:	2.8	2.8	0.8	1.8	8.7	8.7	334.2	61.8	61.8	1.5	24.3	24.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.4	30.4	16.6	26.4	42.1	42.1	381.7	98.3	98.3	43.3	60.5	60.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	30.4	16.6	26.4	42.1	42.1	381.7	98.3	98.3	43.3	60.5	60.5
LOS by Move:	C	C	B	C	D	D	F	F	F	D	E	E
HCM2kAvgQ:	7	7	2	1	18	16	31	33	32	1	18	18

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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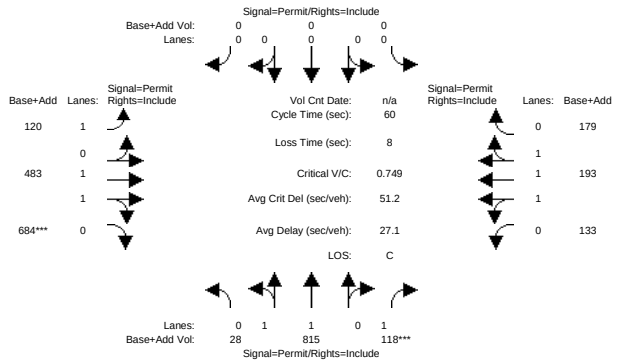
Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	21	0	21	0	0	31	31	31	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	815	118	0	0	0	120	483	684	133	193	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	815	118	0	0	0	120	483	684	133	193	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	815	118	0	0	0	120	483	684	133	193	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	882	128	0	0	0	130	523	740	144	209	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	882	128	0	0	0	130	523	740	144	209	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	882	128	0	0	0	130	523	740	144	209	194
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.37	0.74	0.72	0.47	0.47	0.47
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.82	1.18	1.00
Final Sat.:	102	2965	1199	0	0	0	710	1404	1364	733	1064	890
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.11	0.00	0.00	0.00	0.18	0.37	0.54	0.20	0.20	0.22
Crit Moves:			****						****			
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.85	0.85	0.30	0.00	0.00	0.00	0.35	0.72	1.05	0.38	0.38	0.42
Uniform Del:	18.0	18.0	14.2	0.0	0.0	0.0	8.6	11.2	14.5	8.7	8.7	9.0
IncremntDel:	8.4	8.4	1.9	0.0	0.0	0.0	2.7	2.6	40.2	0.8	0.8	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.5	26.5	16.1	0.0	0.0	0.0	11.2	13.8	54.7	9.5	9.5	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.5	26.5	16.1	0.0	0.0	0.0	11.2	13.8	54.7	9.5	9.5	10.0
LOS by Move:	C	C	B	A	A	A	B	B	D	A	A	A
HCM2kAvgQ:	11	11	2	0	0	0	2	9	25	3	3	3

Note: Queue reported is the number of cars per lane.

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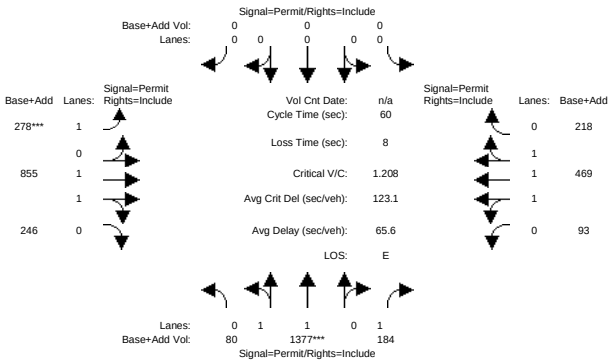
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	80	1377	184	0	0	0	278	855	246	93	469	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	1377	184	0	0	0	278	855	246	93	469	218
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	1377	184	0	0	0	278	855	246	93	469	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	1414	189	0	0	0	285	878	253	95	482	224
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	1414	189	0	0	0	285	878	253	95	482	224
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	1414	189	0	0	0	285	878	253	95	482	224
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.63	1.00	1.00	1.00	0.27	0.78	0.77	0.50	0.50	0.50
Lanes:	0.11	1.89	1.00	0.00	0.00	0.00	1.00	1.55	0.45	0.36	1.80	0.84
Final Sat.:	168	2889	1200	0	0	0	512	2306	663	341	1720	799
Capacity Analysis Module:												
Vol/Sat:	0.49	0.49	0.16	0.00	0.00	0.00	0.56	0.38	0.38	0.28	0.28	0.28
Crit Moves:		****					****					
Green/Cycle:	0.40	0.40	0.40	0.00	0.00	0.00	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	1.21	1.21	0.39	0.00	0.00	0.00	1.21	0.82	0.82	0.61	0.61	0.61
Uniform Del:	17.9	17.9	12.6	0.0	0.0	0.0	16.1	14.0	14.0	12.1	12.1	12.1
IncremntDel:	101.5	102	2.3	0.0	0.0	0.0	126.5	5.8	5.8	2.1	2.1	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	119.4	119	14.9	0.0	0.0	0.0	142.6	19.8	19.8	14.2	14.2	14.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	119.4	119	14.9	0.0	0.0	0.0	142.6	19.8	19.8	14.2	14.2	14.2
LOS by Move:	F	F	B	A	A	A	F	B	B	B	B	B
HCM2kAvgQ:	35	35	3	0	0	0	15	12	12	5	5	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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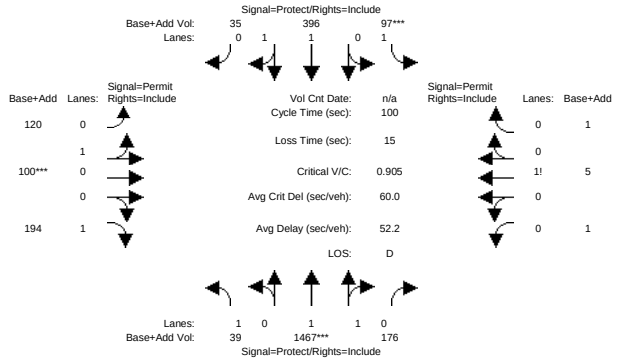
Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	50	50	10	38	38	25	25	25	25	25	25
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	39	1467	176	97	396	35	120	100	194	1	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	1467	176	97	396	35	120	100	194	1	5	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	1467	176	97	396	35	120	100	194	1	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	41	1544	185	102	417	37	126	105	204	1	5	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	1544	185	102	417	37	126	105	204	1	5	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	1544	185	102	417	37	126	105	204	1	5	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.88	0.79	0.81	0.80	0.80	0.67	0.70	0.68	0.81	0.81	0.81
Lanes:	1.00	1.77	0.23	1.00	1.84	0.16	0.55	0.45	1.00	0.14	0.72	0.14
Final Sat.:	1539	2942	353	1539	2794	247	708	590	1295	220	1101	220
Capacity Analysis Module:												
Vol/Sat:	0.03	0.52	0.52	0.07	0.15	0.15	0.18	0.18	0.16	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.22	0.50	0.50	0.10	0.38	0.38	0.25	0.25	0.25	0.25	0.25	0.25
Volume/Cap:	0.12	1.05	1.05	0.66	0.39	0.39	0.71	0.71	0.63	0.02	0.02	0.02
Uniform Del:	31.3	25.0	25.0	43.4	22.6	22.6	34.2	34.2	33.4	28.3	28.3	28.3
IncremntDel:	0.7	36.5	36.5	20.3	1.0	1.0	12.6	12.6	9.0	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.0	61.5	61.5	63.7	23.6	23.6	46.8	46.8	42.4	28.4	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.0	61.5	61.5	63.7	23.6	23.6	46.8	46.8	42.4	28.4	28.4	28.4
LOS by Move:	C	E	E	E	C	C	D	D	D	C	C	C
HCM2kAvgQ:	1	33	30	3	5	5	7	7	6	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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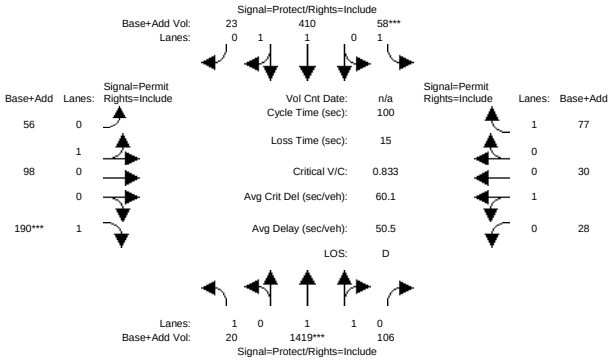
Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	48	48	8	35	35	29	29	29	29	29	29
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	1419	106	58	410	23	56	98	190	28	30	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	1419	106	58	410	23	56	98	190	28	30	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1419	106	58	410	23	56	98	190	28	30	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	1494	112	61	432	24	59	103	200	29	32	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1494	112	61	432	24	59	103	200	29	32	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1494	112	61	432	24	59	103	200	29	32	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.84	0.79	0.81	0.80	0.80	0.71	0.74	0.64	0.68	0.71	0.64
Lanes:	1.00	1.85	0.15	1.00	1.89	0.11	0.37	0.63	1.00	0.49	0.51	1.00
Final Sat.:	1539	2966	222	1539	2891	162	504	883	1213	639	685	1213
Capacity Analysis Module:												
Vol/Sat:	0.01	0.50	0.50	0.04	0.15	0.15	0.12	0.12	0.16	0.05	0.05	0.07
Crit Moves:		****		****					****			
Green/Cycle:	0.20	0.48	0.48	0.08	0.36	0.36	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.07	1.05	1.05	0.50	0.42	0.42	0.40	0.40	0.57	0.16	0.16	0.23
Uniform Del:	32.1	26.0	26.0	44.1	24.3	24.3	28.5	28.5	30.2	26.4	26.4	27.0
IncremntDel:	0.4	37.1	37.1	13.6	1.2	1.2	3.0	3.0	6.5	0.9	0.9	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.6	63.1	63.1	57.6	25.5	25.5	31.5	31.5	36.7	27.3	27.3	28.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	63.1	63.1	57.6	25.5	25.5	31.5	31.5	36.7	27.3	27.3	28.5
LOS by Move:	C	E	E	E	C	C	C	C	D	C	C	C
HCM2kAvgQ:	0	30	29	2	6	6	4	4	5	1	1	2

Note: Queue reported is the number of cars per lane.

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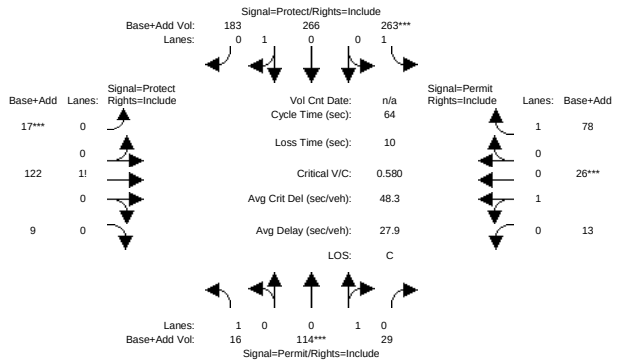
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	21	21	14	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	16	114	29	263	266	183	17	122	9	13	26	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	114	29	263	266	183	17	122	9	13	26	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	114	29	263	266	183	17	122	9	13	26	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	19	134	34	310	313	216	20	144	11	15	31	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	134	34	310	313	216	20	144	11	15	31	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	134	34	310	313	216	20	144	11	15	31	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.21	0.66	0.65	0.81	0.80	0.79	0.74	0.74	0.73	0.82	0.84	0.67
Lanes:	1.00	0.79	0.21	1.00	0.59	0.41	0.11	0.83	0.06	0.34	0.66	1.00
Final Sat.:	397	999	254	1539	895	615	161	1152	85	528	1055	1274
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.13	0.20	0.35	0.35	0.12	0.12	0.12	0.03	0.03	0.07
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.14	0.41	0.41	0.92	0.64	0.64	0.89	0.42	0.42	0.19	0.19	0.46
Uniform Del:	15.2	16.7	16.7	24.4	10.1	10.1	27.0	18.1	18.1	23.5	23.5	24.5
IncremntDel:	2.3	3.0	3.0	32.3	3.8	3.8	40.2	3.1	3.1	1.7	1.7	7.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.5	19.7	19.7	56.8	13.9	13.9	67.2	21.2	21.2	25.1	25.1	32.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.5	19.7	19.7	56.8	13.9	13.9	67.2	21.2	21.2	25.1	25.1	32.1
LOS by Move:	B	B	B	E	B	B	E	C	C	C	C	C
HCM2kAvgQ:	0	3	3	7	7	7	2	3	1	1	1	2

Note: Queue reported is the number of cars per lane.

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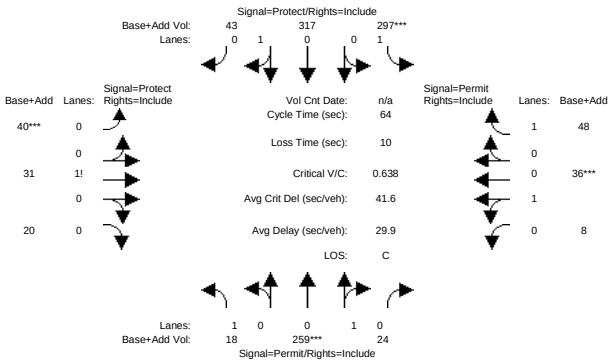
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	21	21	21	14	35	35	9	19	19	10	10	10
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	18	259	24	297	317	43	40	31	20	8	36	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	259	24	297	317	43	40	31	20	8	36	48
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	259	24	297	317	43	40	31	20	8	36	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	19	273	25	313	334	45	42	33	21	8	38	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	273	25	313	334	45	42	33	21	8	38	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	273	25	313	334	45	42	33	21	8	38	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.29	0.67	0.65	0.81	0.84	0.82	0.71	0.71	0.65	0.80	0.84	0.66
Lanes:	1.00	0.91	0.09	1.00	0.88	0.12	0.44	0.33	0.23	0.19	0.81	1.00
Final Sat.:	549	1168	108	1539	1397	190	580	450	290	288	1296	1259
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.23	0.20	0.24	0.24	0.07	0.07	0.07	0.03	0.03	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.11	0.71	0.71	0.93	0.44	0.44	0.52	0.24	0.24	0.19	0.19	0.26
Uniform Del:	15.0	18.8	18.8	24.5	8.6	8.6	25.5	17.1	17.1	23.5	23.5	23.7
IncremntDel:	1.2	9.8	9.8	33.8	1.6	1.6	9.9	1.5	1.5	1.7	1.7	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	16.1	28.7	28.7	58.3	10.2	10.2	35.4	18.5	18.5	25.1	25.1	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.1	28.7	28.7	58.3	10.2	10.2	35.4	18.5	18.5	25.1	25.1	26.9
LOS by Move:	B	C	C	E	B	B	D	B	B	C	C	C
HCM2kAvgQ:	0	7	7	7	4	4	2	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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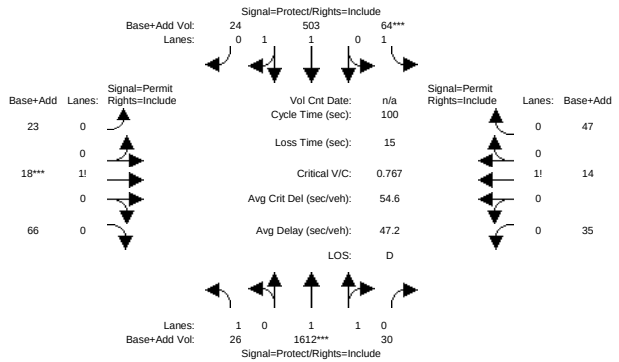
Intersection #29: Mission Rock/3rd



Street Name:	3rd Street									Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	18	50	50	5	37	37	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	26	1612	30	64	503	24	23	18	66	35	14	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	1612	30	64	503	24	23	18	66	35	14	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	1612	30	64	503	24	23	18	66	35	14	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	27	1697	32	67	529	25	24	19	69	37	15	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1697	32	67	529	25	24	19	69	37	15	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1697	32	67	529	25	24	19	69	37	15	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.63	0.64	0.62	0.68	0.69	0.68
Lanes:	1.00	1.96	0.04	1.00	1.91	0.09	0.21	0.16	0.63	0.36	0.14	0.50
Final Sat.:	1539	3309	62	1539	2918	139	255	199	731	472	189	634
Capacity Analysis Module:												
Vol/Sat:	0.02	0.51	0.51	0.04	0.18	0.18	0.10	0.10	0.10	0.08	0.08	0.08
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.50	0.50	0.05	0.37	0.37	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.10	1.03	1.03	0.88	0.49	0.49	0.32	0.32	0.32	0.26	0.26	0.26
Uniform Del:	34.2	25.0	25.0	47.2	24.2	24.2	27.1	27.1	27.1	26.6	26.6	26.6
IncremntDel:	0.7	28.7	28.7	71.9	1.5	1.5	2.3	2.3	2.3	1.6	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.9	53.7	53.7	119.1	25.8	25.8	29.4	29.4	29.4	28.2	28.2	28.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	53.7	53.7	119.1	25.8	25.8	29.4	29.4	29.4	28.2	28.2	28.2
LOS by Move:	C	D	D	F	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	38	35	3	7	7	3	3	3	2	3	2

Note: Queue reported is the number of cars per lane.

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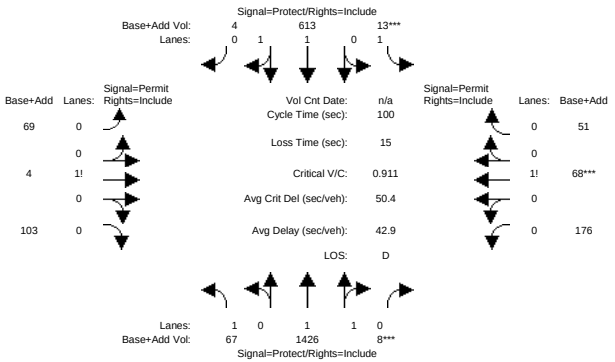
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street									Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	9	47	47	5	43	43	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	67	1426	8	13	613	4	69	4	103	176	68	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	1426	8	13	613	4	69	4	103	176	68	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	1426	8	13	613	4	69	4	103	176	68	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	71	1501	8	14	645	4	73	4	108	185	72	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	1501	8	14	645	4	73	4	108	185	72	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	1501	8	14	645	4	73	4	108	185	72	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.81	0.52	0.54	0.47	0.54	0.58	0.56
Lanes:	1.00	1.99	0.01	1.00	1.99	0.01	0.37	0.02	0.61	0.61	0.22	0.17
Final Sat.:	1539	3211	18	1539	3056	20	366	21	546	622	240	180
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.01	0.21	0.21	0.20	0.20	0.20	0.30	0.30	0.30
Crit Moves:			****	****							****	
Green/Cycle:	0.09	0.47	0.47	0.05	0.43	0.43	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.51	0.99	0.99	0.18	0.49	0.49	0.60	0.60	0.60	0.90	0.90	0.90
Uniform Del:	43.4	26.4	26.4	45.5	20.6	20.6	28.0	28.0	28.0	32.0	32.0	32.0
IncremntDel:	12.7	21.9	21.9	5.0	1.3	1.3	8.4	8.4	8.4	29.1	29.1	29.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.1	48.3	48.3	50.5	21.9	21.9	36.4	36.4	36.4	61.0	61.0	61.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.1	48.3	48.3	50.5	21.9	21.9	36.4	36.4	36.4	61.0	61.0	61.0
LOS by Move:	E	D	D	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	3	32	30	0	8	8	6	6	6	12	13	13

Note: Queue reported is the number of cars per lane.

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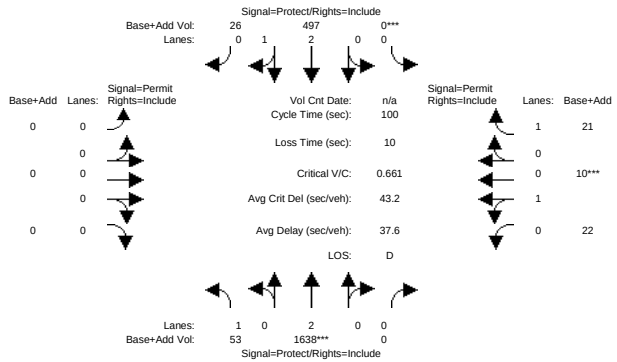
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	53	1638	0	0	497	26	0	0	0	22	10	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	1638	0	0	497	26	0	0	0	22	10	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	1638	0	0	497	26	0	0	0	22	10	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	57	1759	0	0	534	28	0	0	0	24	11	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	1759	0	0	534	28	0	0	0	24	11	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	1759	0	0	534	28	0	0	0	24	11	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.78	0.80	0.62
Lanes:	1.00	2.00	0.00	0.00	2.85	0.15	0.00	0.00	0.00	0.69	0.31	1.00
Final Sat.:	1539	3079	0	0	4174	218	0	0	0	1022	465	1184
Capacity Analysis Module:												
Vol/Sat:	0.04	0.57	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.02	0.02	0.02
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.24	1.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.07	0.07	0.06
Uniform Del:	37.2	21.5	0.0	0.0	19.5	19.5	0.0	0.0	0.0	23.0	23.0	22.9
IncremntDel:	2.4	22.1	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	39.6	43.6	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.3	23.3	23.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.6	43.6	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.3	23.3	23.2
LOS by Move:	D	D	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	29	0	0	4	4	0	0	0	1	1	0

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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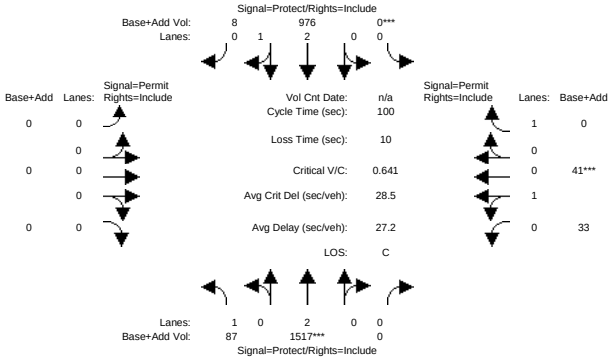
Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	87	1517	0	0	976	8	0	0	0	33	41	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	1517	0	0	976	8	0	0	0	33	41	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	1517	0	0	976	8	0	0	0	33	41	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	93	1614	0	0	1038	9	0	0	0	35	44	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	1614	0	0	1038	9	0	0	0	35	44	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	1614	0	0	1038	9	0	0	0	35	44	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.78	0.77	1.00	1.00	1.00	0.76	0.80	1.00
Lanes:	1.00	2.00	0.00	0.00	2.98	0.02	0.00	0.00	0.00	0.46	0.54	1.00
Final Sat.:	1539	3079	0	0	4384	36	0	0	0	662	822	1900
Capacity Analysis Module:												
Vol/Sat:	0.06	0.52	0.00	0.00	0.24	0.24	0.00	0.00	0.00	0.05	0.05	0.00
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.00
Volume/Cap:	0.39	0.92	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.16	0.16	0.00
Uniform Del:	38.1	19.4	0.0	0.0	22.3	22.3	0.0	0.0	0.0	23.7	23.7	0.0
IncremntDel:	4.8	9.3	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
Delay/Veh:	42.9	28.8	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.9	28.8	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
LOS by Move:	D	C	A	A	C	C	A	A	A	C	C	A
HCM2kAvgQ:	2	24	0	0	9	9	0	0	0	2	2	0

Note: Queue reported is the number of cars per lane.

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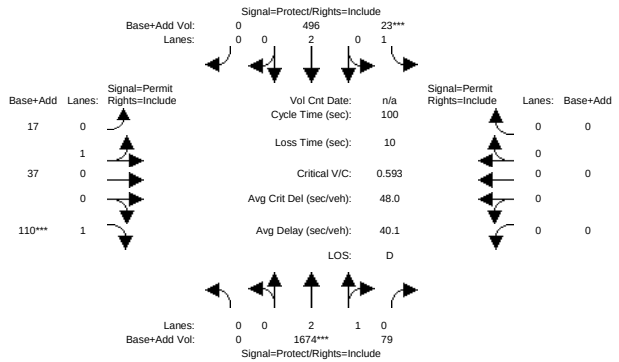
Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1674	79	23	496	0	17	37	110	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1674	79	23	496	0	17	37	110	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1674	79	23	496	0	17	37	110	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1758	83	24	521	0	18	39	116	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1758	83	24	521	0	18	39	116	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1758	83	24	521	0	18	39	116	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.83	0.84	0.61	1.00	1.00	1.00
Lanes:	0.00	2.86	0.14	1.00	2.00	0.00	0.32	0.68	1.00	0.00	0.00	0.00
Final Sat.:	0	4195	198	1539	3079	0	500	1088	1168	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.42	0.02	0.17	0.00	0.04	0.04	0.10	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.42	0.42	0.15	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	1.00	1.00	0.10	0.30	0.00	0.11	0.11	0.30	0.00	0.00	0.00
Uniform Del:	0.0	29.0	29.0	36.7	11.1	0.0	23.3	23.3	24.9	0.0	0.0	0.0
IncremntDel:	0.0	20.5	20.5	0.9	0.4	0.0	0.4	0.4	2.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	49.5	49.5	37.6	11.6	0.0	23.7	23.7	26.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	49.5	49.5	37.6	11.6	0.0	23.7	23.7	26.9	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	28	28	1	4	0	1	1	3	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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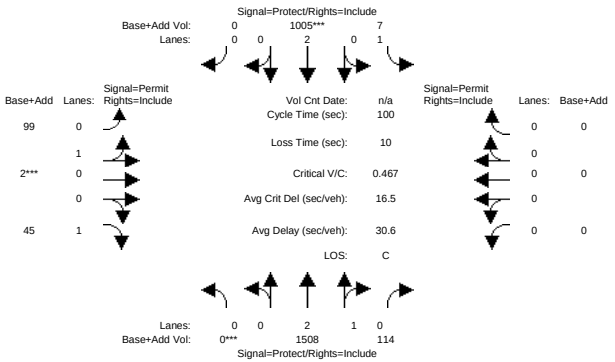
Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1508	114	7	1005	0	99	2	45	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1508	114	7	1005	0	99	2	45	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1508	114	7	1005	0	99	2	45	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1587	120	7	1058	0	104	2	47	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1587	120	7	1058	0	104	2	47	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1587	120	7	1058	0	104	2	47	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.73	0.77	0.63	1.00	1.00	1.00
Lanes:	0.00	2.79	0.21	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	4071	308	1539	3079	0	1364	28	1188	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.00	0.34	0.00	0.08	0.08	0.04	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.41	0.41	0.16	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.95	0.95	0.03	0.60	0.00	0.23	0.23	0.12	0.00	0.00	0.00
Uniform Del:	0.0	28.4	28.4	35.6	14.1	0.0	24.3	24.3	23.4	0.0	0.0	0.0
IncremntDel:	0.0	11.9	11.9	0.2	1.5	0.0	1.2	1.2	0.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	40.3	40.3	35.8	15.6	0.0	25.5	25.5	24.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.3	40.3	35.8	15.6	0.0	25.5	25.5	24.0	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	24	24	0	12	0	2	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
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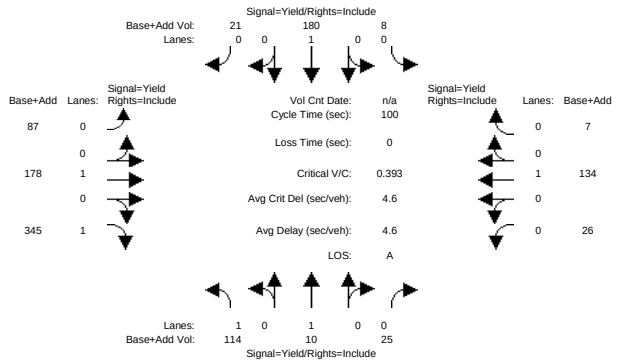
Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	114	10	25	8	180	21	87	178	345	26	134	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	10	25	8	180	21	87	178	345	26	134	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	10	25	8	180	21	87	178	345	26	134	7
User Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	7	18	6	130	15	63	128	248	19	96	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	7	18	6	130	15	63	128	248	19	96	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	7	18	6	130	15	63	128	248	19	96	5
PCE Module:												
AutoPCE:	82	7	18	6	130	15	63	128	248	19	96	5
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	82	7	18	6	130	15	63	128	248	19	96	5

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	197	197	154	152
MaxVolume:	1094	1093	1117	1118
PedVolume:	50	50	50	50
AdjMaxVol:	1094	1093	1117	1118
ApproachVol:	107	150	439	120
ApproachV/C:	0.10	0.14	0.39	0.11
ApproachDel:	3.6	3.8	5.3	3.6
ApproachLOS:	A	A	A	A
Queue:	0.3	0.5	1.9	0.4

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FHWA Roundabout (Future Volume Alternative)
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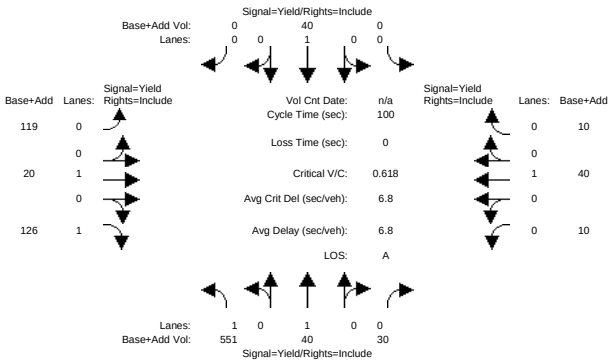
Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	551	40	30	0	40	0	119	20	126	10	40	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	40	30	0	40	0	119	20	126	10	40	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	551	40	30	0	40	0	119	20	126	10	40	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	612	44	33	0	44	0	132	22	140	11	44	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Module:												
AutoPCE:	612	44	33	0	44	0	132	22	140	11	44	11
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	612	44	33	0	44	0	132	22	140	11	44	11

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	154	668	56	789
MaxVolume:	1117	839	1170	774
PedVolume:	0	0	0	0
AdjMaxVol:	1117	839	1170	774
ApproachVol:	690	44	294	67
ApproachV/C:	0.62	0.05	0.25	0.09
ApproachDel:	8.3	4.5	4.1	5.1
ApproachLOS:	A	A	A	A
Queue:	4.5	0.2	1.0	0.3

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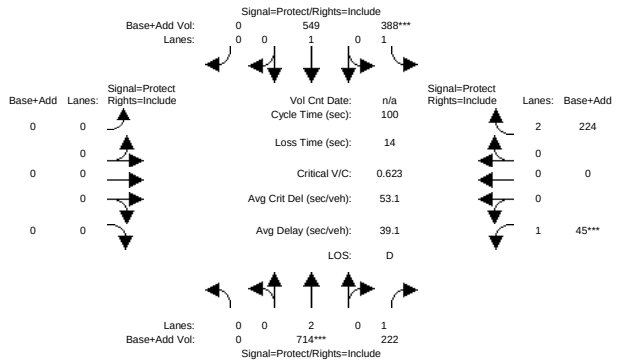
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #33: Mission Bay/7th




```
Street Name:            7th Street                    Mission Bay
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   36   36    14   61    0     0    0    0     25    0   25
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  714  222   388  549    0     0    0    0     45    0  224
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  714  222   388  549    0     0    0    0     45    0  224
Added Vol:      0    0    0     0    0    0     0    0    0      0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0      0    0    0
Initial Fut:    0  714  222   388  549    0     0    0    0     45    0  224
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96  0.96 0.96 0.96
PHF Volume:     0  745  232   405  573    0     0    0    0     47    0  234
Reduct Vol:     0    0    0     0    0    0     0    0    0      0    0    0
Reduced Vol:    0  745  232   405  573    0     0    0    0     47    0  234
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  745  232   405  573    0     0    0    0     47    0  234
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.81 0.57  0.81 0.85 1.00  1.00 1.00 1.00  0.81 1.00 0.53
Lanes:       0.00 2.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 2.00
Final Sat.:     0 3079 1079  1539 1620    0     0    0    0  1539    0 2000
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.24 0.21  0.26 0.35 0.00  0.00 0.00 0.00  0.03 0.00 0.12
Crit Moves:       ****       ****                          ****
Green/Cycle: 0.00 0.36 0.36  0.25 0.61 0.00  0.00 0.00 0.00  0.25 0.00 0.25
Volume/Cap:  0.00 0.67 0.60  1.05 0.58 0.00  0.00 0.00 0.00  0.12 0.00 0.47
Uniform Del:  0.0 27.0 26.1  37.5 11.8  0.0   0.0  0.0  0.0  29.0  0.0 31.8
IncremntDel:  0.0  3.3  6.6  60.3  2.5  0.0   0.0  0.0  0.0   0.6  0.0  3.1
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 1.00
Delay/Veh:    0.0 30.3 32.7  97.8 14.2  0.0   0.0  0.0  0.0  29.7  0.0 35.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 30.3 32.7  97.8 14.2  0.0   0.0  0.0  0.0  29.7  0.0 35.0
LOS by Move:    A    C    C     F    B    A     A    A    A     C    A    C
HCM2kAvgQ:      0   11    7    20   11    0     0    0    0     1    0    4
Note: Queue reported is the number of cars per lane.
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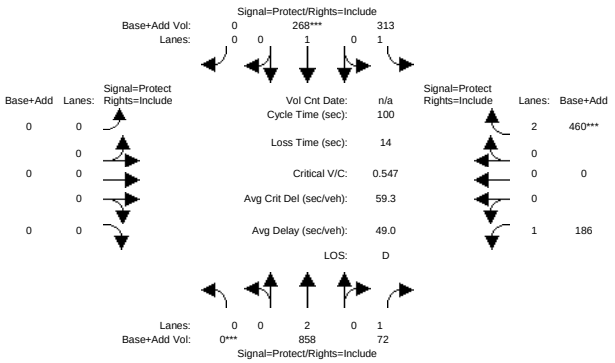
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #33: Mission Bay/7th




```
Street Name:            7th Street                    Mission Bay
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     0   32   32    14   57    0     0    0    0     29    0   29
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  858   72   313  268    0     0    0    0    186    0  460
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0  858   72   313  268    0     0    0    0    186    0  460
Added Vol:      0    0    0     0    0    0     0    0    0      0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0      0    0    0
Initial Fut:    0  858   72   313  268    0     0    0    0    186    0  460
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97  0.97 0.97 0.97
PHF Volume:     0  885   74   323  276    0     0    0    0    192    0  474
Reduct Vol:     0    0    0     0    0    0     0    0    0      0    0    0
Reduced Vol:    0  885   74   323  276    0     0    0    0    192    0  474
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0  885   74   323  276    0     0    0    0    192    0  474
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 0.81 0.41  0.81 0.85 1.00  1.00 1.00 1.00  0.81 1.00 0.42
Lanes:       0.00 2.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 2.00
Final Sat.:     0 3079  784  1539 1620    0     0    0    0  1539    0 1580
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.29 0.09  0.21 0.17 0.00  0.00 0.00 0.00  0.12 0.00 0.30
Crit Moves:  ****            ****                          ****
Green/Cycle: 0.00 0.34 0.34  0.23 0.57 0.00  0.00 0.00 0.00  0.29 0.00 0.29
Volume/Cap:  0.00 0.83 0.28  0.93 0.30 0.00  0.00 0.00 0.00  0.43 0.00 1.04
Uniform Del:  0.0 30.2 23.7  37.9 11.1  0.0   0.0  0.0  0.0  28.8  0.0 35.5
IncremntDel:  0.0  7.7  2.5  33.3  0.8  0.0   0.0  0.0  0.0   3.0  0.0 51.4
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   0.00 1.00 1.00  1.00 1.00 0.00  0.00 0.00 0.00  1.00 0.00 1.00
Delay/Veh:    0.0 37.9 26.2  71.2 12.0  0.0   0.0  0.0  0.0  31.8  0.0 86.9
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0 37.9 26.2  71.2 12.0  0.0   0.0  0.0  0.0  31.8  0.0 86.9
LOS by Move:    A    D    C     E    B    A     A    A    A     C    A    F
HCM2kAvgQ:      0   16    2    14    4    0     0    0    0     5    0   14
Note: Queue reported is the number of cars per lane.
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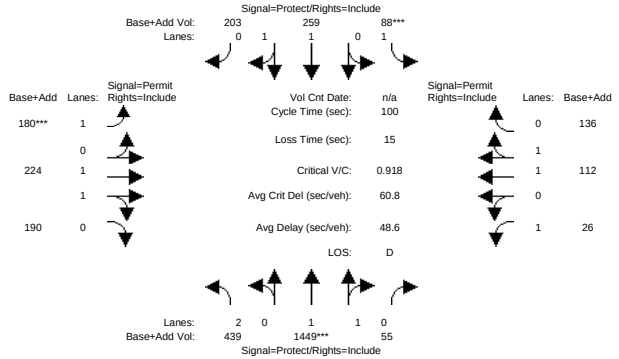
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	19	50	50	9	36	36	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	439	1449	55	88	259	203	180	224	190	26	112	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	439	1449	55	88	259	203	180	224	190	26	112	136
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	439	1449	55	88	259	203	180	224	190	26	112	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	456	1506	57	91	269	211	187	233	198	27	116	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	1506	57	91	269	211	187	233	198	27	116	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	456	1506	57	91	269	211	187	233	198	27	116	141
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.80	0.81	0.76	0.74	0.46	0.71	0.69	0.33	0.70	0.68
Lanes:	2.00	1.93	0.07	1.00	1.11	0.89	1.00	1.07	0.93	1.00	1.00	1.00
Final Sat.:	2987	2948	112	1539	1600	1254	880	1437	1219	628	1325	1285
Capacity Analysis Module:												
Vol/Sat:	0.15	0.51	0.51	0.06	0.17	0.17	0.21	0.16	0.16	0.04	0.09	0.11
Crit Moves:		****		****			****					
Green/Cycle:	0.20	0.49	0.49	0.09	0.38	0.38	0.27	0.27	0.27	0.27	0.27	0.27
Volume/Cap:	0.76	1.04	1.04	0.67	0.44	0.44	0.77	0.59	0.59	0.16	0.32	0.40
Uniform Del:	38.5	26.0	26.0	45.1	23.7	23.7	34.1	32.0	32.0	28.1	29.4	30.2
IncremntDel:	9.0	35.0	35.0	23.6	1.3	1.3	21.2	3.5	3.5	1.9	1.0	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.6	61.0	61.0	68.6	25.0	25.0	55.3	35.5	35.5	30.0	30.5	32.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	61.0	61.0	68.6	25.0	25.0	55.3	35.5	35.5	30.0	30.5	32.0
LOS by Move:	D	E	E	E	C	C	E	D	D	C	C	C
HCM2kAvgQ:	6	29	29	4	6	6	6	6	6	1	3	4

Note: Queue reported is the number of cars per lane.

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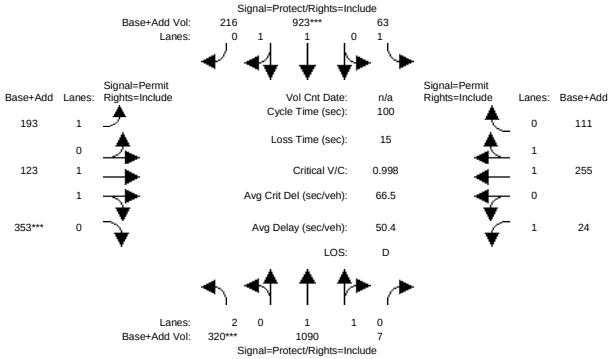
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	50	50	5	41	41	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	320	1090	7	63	923	216	193	123	353	24	255	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	320	1090	7	63	923	216	193	123	353	24	255	111
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	320	1090	7	63	923	216	193	123	353	24	255	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	344	1172	8	68	992	232	208	132	380	26	274	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	344	1172	8	68	992	232	208	132	380	26	274	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	344	1172	8	68	992	232	208	132	380	26	274	119
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.79	0.77	0.36	0.68	0.62	0.28	0.73	0.70
Lanes:	2.00	1.99	0.01	1.00	1.62	0.38	1.00	1.00	1.00	1.00	1.38	0.62
Final Sat.:	2987	3056	20	1539	2418	566	685	1283	1175	538	1900	827
Capacity Analysis Module:												
Vol/Sat:	0.12	0.38	0.38	0.04	0.41	0.41	0.30	0.10	0.32	0.05	0.14	0.14
Crit Moves:	****				****				****			
Green/Cycle:	0.14	0.50	0.50	0.05	0.41	0.41	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.82	0.77	0.77	0.88	1.00	1.00	1.01	0.34	1.08	0.16	0.48	0.48
Uniform Del:	41.8	20.3	20.3	47.2	29.5	29.5	35.0	27.3	35.0	25.7	28.6	28.6
IncremntDel:	16.6	3.7	3.7	73.0	26.0	26.0	65.2	0.6	63.3	2.1	2.0	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.4	24.0	24.0	120.2	55.5	55.5	100.2	27.9	98.3	27.8	30.7	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.4	24.0	24.0	120.2	55.5	55.5	100.2	27.9	98.3	27.8	30.7	30.7
LOS by Move:	E	C	C	F	E	E	F	C	F	C	C	C
HCM2kAvgQ:	6	15	15	4	27	27	9	3	18	1	6	5

Note: Queue reported is the number of cars per lane.

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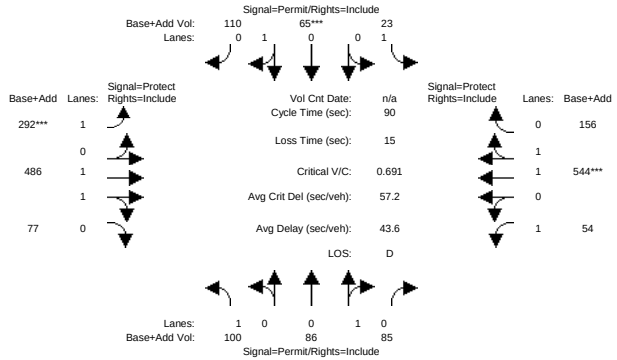
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	20	20	20	20	20	15	40	40	15	40	40
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	100	86	85	23	65	110	292	486	77	54	544	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	86	85	23	65	110	292	486	77	54	544	156
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	86	85	23	65	110	292	486	77	54	544	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	105	90	89	24	68	116	307	511	81	57	571	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	90	89	24	68	116	307	511	81	57	571	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	90	89	24	68	116	307	511	81	57	571	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.44	0.79	0.76	0.44	0.77	0.74	0.81	0.74	0.74	0.81	0.78	0.77
Lanes:	1.00	0.49	0.51	1.00	0.36	0.64	1.00	1.72	0.28	1.00	1.55	0.45
Final Sat.:	833	741	732	845	531	898	1539	2437	386	1539	2307	662
Capacity Analysis Module:												
Vol/Sat:	0.13	0.12	0.12	0.03	0.13	0.13	0.20	0.21	0.21	0.04	0.25	0.25
Crit Moves:					****		****				****	
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.17	0.44	0.44	0.17	0.44	0.44
Volume/Cap:	0.57	0.55	0.55	0.13	0.58	0.58	1.20	0.47	0.47	0.22	0.56	0.56
Uniform Del:	31.2	31.0	31.0	28.0	31.2	31.2	37.5	17.6	17.6	32.4	18.5	18.5
IncremntDel:	12.0	6.5	6.5	1.4	7.5	7.5	119.5	1.3	1.3	2.0	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.2	37.5	37.5	29.4	38.7	38.7	157.0	18.8	18.8	34.4	20.2	20.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.2	37.5	37.5	29.4	38.7	38.7	157.0	18.8	18.8	34.4	20.2	20.2
LOS by Move:	D	D	D	C	D	D	F	B	B	C	C	C
HCM2kAvgQ:	4	5	5	1	5	5	15	6	6	1	8	8

Note: Queue reported is the number of cars per lane.

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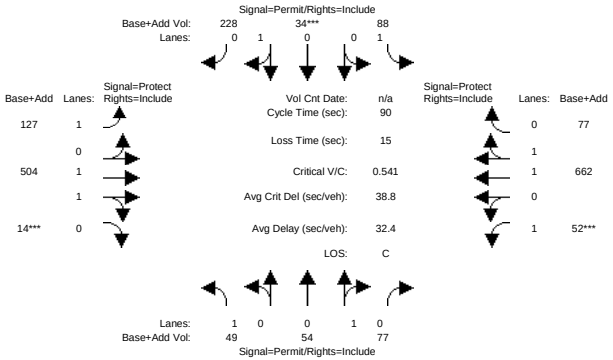
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	20	20	20	20	20	10	40	40	15	45	45
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	49	54	77	88	34	228	127	504	14	52	662	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	54	77	88	34	228	127	504	14	52	662	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	54	77	88	34	228	127	504	14	52	662	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	54	59	85	97	37	251	140	554	15	57	727	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	59	85	97	37	251	140	554	15	57	727	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	59	85	97	37	251	140	554	15	57	727	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.28	0.78	0.76	0.50	0.74	0.70	0.81	0.76	0.76	0.81	0.80	0.79
Lanes:	1.00	0.40	0.60	1.00	0.12	0.88	1.00	1.95	0.05	1.00	1.79	0.21
Final Sat.:	527	595	848	957	173	1162	1539	2797	78	1539	2713	316
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.10	0.22	0.22	0.09	0.20	0.20	0.04	0.27	0.27
Crit Moves:					****				****	****		
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.11	0.44	0.44	0.17	0.50	0.50
Volume/Cap:	0.46	0.45	0.45	0.45	0.97	0.97	0.82	0.45	0.45	0.22	0.54	0.54
Uniform Del:	30.3	30.2	30.2	30.3	34.7	34.7	39.1	17.3	17.3	32.5	15.4	15.4
IncremntDel:	12.5	4.5	4.5	6.9	45.1	45.1	33.3	1.1	1.1	2.0	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.8	34.7	34.7	37.2	79.8	79.8	72.4	18.4	18.4	34.5	16.7	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	34.7	34.7	37.2	79.8	79.8	72.4	18.4	18.4	34.5	16.7	16.7
LOS by Move:	D	C	C	D	E	E	E	B	B	C	B	B
HCM2kAvgQ:	2	4	4	3	13	13	4	6	6	1	8	8

Note: Queue reported is the number of cars per lane.

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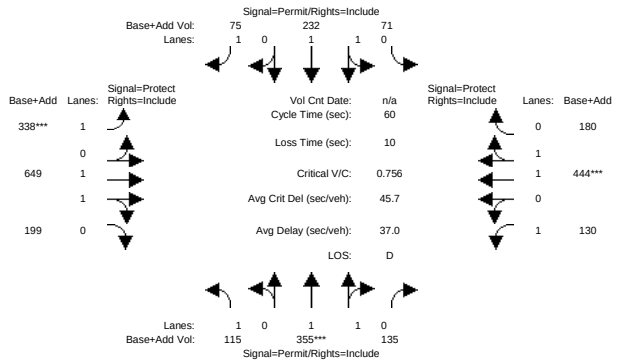
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #36: 16th/Owens




```
Street Name:            Owens St                    16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20     20   20   20     10   25   25      5   18   18
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0     5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     115  355  135     71  232   75    338  649  199    130  444  180
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse:  115  355  135     71  232   75    338  649  199    130  444  180
Added Vol:      0    0    0      0    0    0      0    0    0      0    0    0
PasserByVol:    0    0    0      0    0    0      0    0    0      0    0    0
Initial Fut:  115  355  135     71  232   75    338  649  199    130  444  180
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95
PHF Volume:   121  374  142     75  244   79    356  683  209    137  467  189
Reduct Vol:     0    0    0      0    0    0      0    0    0      0    0    0
Reduced Vol:  121  374  142     75  244   79    356  683  209    137  467  189
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:  121  374  142     75  244   79    356  683  209    137  467  189
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900   1900 1900 1900   1900 1900 1900   1900 1900 1900
Adjustment:  0.44 0.78 0.77   0.62 0.62 0.69   0.81 0.73 0.73   0.81 0.78 0.76
Lanes:       1.00 1.44 0.56   0.47 1.53 1.00   1.00 1.53 0.47   1.00 1.42 0.58
Final Sat.:   839 2132  811    550 1797 1315   1539 2128  652   1539 2088  846
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.18 0.18   0.14 0.14 0.06   0.23 0.32 0.32   0.09 0.22 0.22
Crit Moves:       ****             ****             ****             ****
Green/Cycle: 0.33 0.33 0.33   0.33 0.33 0.33   0.20 0.42 0.42   0.08 0.30 0.30
Volume/Cap:  0.43 0.53 0.53   0.41 0.41 0.18   1.16 0.77 0.77   1.07 0.75 0.75
Uniform Del: 15.6 16.2 16.2   15.4 15.4 14.2   24.0 15.0 15.0   27.5 18.9 18.9
IncremntDel:  4.8  2.0  2.0    1.6  1.6  0.9  100.3  5.0  5.0   98.4  5.7  5.7
InitQueuDel:  0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Delay/Veh:   20.4 18.2 18.2   17.0 17.0 15.1  124.3 20.0 20.0  125.9 24.7 24.7
User DelAdj: 1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
AdjDel/Veh:  20.4 18.2 18.2   17.0 17.0 15.1  124.3 20.0 20.0  125.9 24.7 24.7
LOS by Move:    C    B    B      B    B    B      F    C    C      F    C    C
HCM2kAvgQ:      2    5    5      3    3    1     12    7    7      5    6    6
Note: Queue reported is the number of cars per lane.
```

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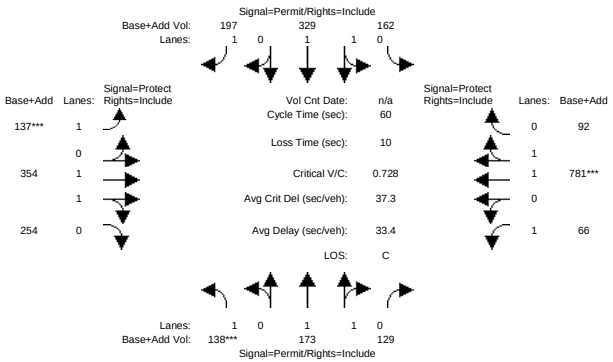
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #36: 16th/Owens




```
Street Name:            Owens St                    16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20     20   20   20     10   20   20     10   20   20
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0     5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     138  173  129    162  329  197    137  354  254     66  781   92
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse:  138  173  129    162  329  197    137  354  254     66  781   92
Added Vol:      0    0    0      0    0    0      0    0    0      0    0    0
PasserByVol:    0    0    0      0    0    0      0    0    0      0    0    0
Initial Fut:  138  173  129    162  329  197    137  354  254     66  781   92
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95
PHF Volume:   145  182  136    171  346  207    144  373  267     69  822   97
Reduct Vol:     0    0    0      0    0    0      0    0    0      0    0    0
Reduced Vol:  145  182  136    171  346  207    144  373  267     69  822   97
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:  145  182  136    171  346  207    144  373  267     69  822   97
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900   1900 1900 1900   1900 1900 1900   1900 1900 1900
Adjustment:  0.29 0.76 0.73   0.55 0.56 0.66   0.81 0.71 0.69   0.81 0.80 0.79
Lanes:       1.00 1.13 0.87   0.67 1.33 1.00   1.00 1.15 0.85   1.00 1.79 0.21
Final Sat.:   550 1621 1209    702 1426 1246   1539 1550 1112   1539 2708  319
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.26 0.11 0.11   0.24 0.24 0.17   0.09 0.24 0.24   0.05 0.30 0.30
Crit Moves:  ****             ****             ****             ****
Green/Cycle: 0.36 0.36 0.36   0.36 0.36 0.36   0.13 0.40 0.40   0.15 0.42 0.42
Volume/Cap:  0.73 0.31 0.31   0.67 0.67 0.46   0.73 0.61 0.61   0.30 0.73 0.73
Uniform Del: 30.3 25.1 25.1   29.5 29.5 26.8   46.1 26.4 26.4   41.6 26.8 26.8
IncremntDel: 20.6  0.8  0.8    4.6  4.6  3.3   20.7  2.6  2.6    3.3  3.7  3.7
InitQueuDel:  0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Delay/Veh:   50.9 25.9 25.9   34.0 34.0 30.1   66.8 29.0 29.0   45.0 30.5 30.5
User DelAdj: 1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
AdjDel/Veh:  50.9 25.9 25.9   34.0 34.0 30.1   66.8 29.0 29.0   45.0 30.5 30.5
LOS by Move:    D    C    C      C    C    C      E    C    C      D    C    C
HCM2kAvgQ:      6    4    4      9    9    6      5    9    9      2   14   14
Note: Queue reported is the number of cars per lane.
```

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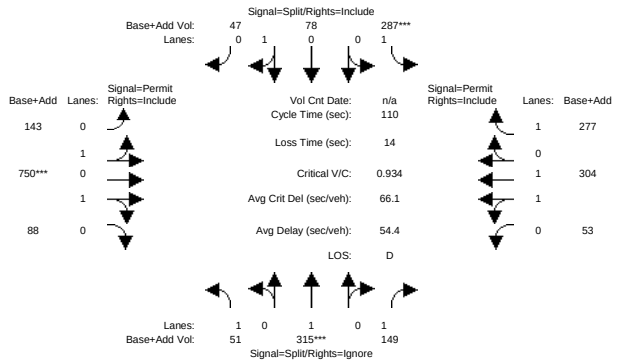
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #37: 16th/7th



Street Name:	7th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	36	36	36	36	36	67
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	51	315	149	287	78	47	143	750	88	53	304	277
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	315	149	287	78	47	143	750	88	53	304	277
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	315	149	287	78	47	143	750	88	53	304	277
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	52	321	0	293	80	48	146	765	90	54	310	283
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	321	0	293	80	48	146	765	90	54	310	283
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	321	0	293	80	48	146	765	90	54	310	283
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.70	0.69	0.58	0.58	0.58	0.52	0.52	0.69
Lanes:	1.00	1.00	1.00	1.00	0.62	0.38	0.29	1.53	0.18	0.30	1.70	1.00
Final Sat.:	1539	1620	1900	1539	827	498	322	1691	198	292	1678	1305
Capacity Analysis Module:												
Vol/Sat:	0.03	0.20	0.00	0.19	0.10	0.10	0.45	0.45	0.45	0.18	0.18	0.22
Crit Moves:		****		****				****				
Green/Cycle:	0.21	0.21	0.00	0.21	0.21	0.21	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.16	0.93	0.00	0.89	0.45	0.45	0.95	0.95	0.95	0.39	0.39	0.46
Uniform Del:	45.2	54.5	0.0	54.0	48.3	48.3	35.5	35.5	35.5	23.8	23.8	24.8
IncremntDel:	1.0	34.0	0.0	28.9	5.2	5.2	18.5	18.5	18.5	1.2	1.2	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.3	88.5	0.0	82.8	53.5	53.5	53.9	53.9	53.9	25.0	25.0	27.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.3	88.5	0.0	82.8	53.5	53.5	53.9	53.9	53.9	25.0	25.0	27.2
LOS by Move:	D	F	A	F	D	D	D	D	D	C	C	C
HCM2kAvgQ:	2	17	0	15	5	5	26	26	26	5	5	8

Note: Queue reported is the number of cars per lane.

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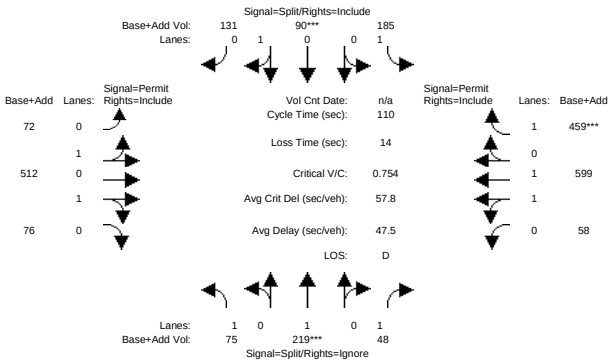
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #37: 16th/7th



Street Name:	7th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	37	37	37	30	30	30	29	29	29	29	29	59
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	75	219	48	185	90	131	72	512	76	58	599	459
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	219	48	185	90	131	72	512	76	58	599	459
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	219	48	185	90	131	72	512	76	58	599	459
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	77	223	0	189	92	134	73	522	78	59	611	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	223	0	189	92	134	73	522	78	59	611	468
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	223	0	189	92	134	73	522	78	59	611	468
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.68	0.65	0.53	0.53	0.53	0.61	0.61	0.68
Lanes:	1.00	1.00	1.00	1.00	0.40	0.60	0.22	1.55	0.23	0.18	1.82	1.00
Final Sat.:	1539	1620	1900	1539	513	747	221	1572	233	204	2111	1296
Capacity Analysis Module:												
Vol/Sat:	0.05	0.14	0.00	0.12	0.18	0.18	0.33	0.33	0.33	0.29	0.29	0.36
Crit Moves:		****			****							****
Green/Cycle:	0.26	0.26	0.00	0.21	0.21	0.21	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.19	0.52	0.00	0.57	0.84	0.84	0.79	0.79	0.79	0.69	0.69	0.86
Uniform Del:	39.9	44.0	0.0	49.3	52.6	52.6	35.1	35.1	35.1	33.0	33.0	36.7
IncremntDel:	1.0	4.5	0.0	7.0	25.3	25.3	7.3	7.3	7.3	3.9	3.9	15.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.9	48.4	0.0	56.3	77.9	77.9	42.4	42.4	42.4	36.9	36.9	52.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.9	48.4	0.0	56.3	77.9	77.9	42.4	42.4	42.4	36.9	36.9	52.6
LOS by Move:	D	D	A	E	E	E	D	D	D	D	D	D
HCM2kAvgQ:	3	8	0	8	12	11	15	15	15	12	12	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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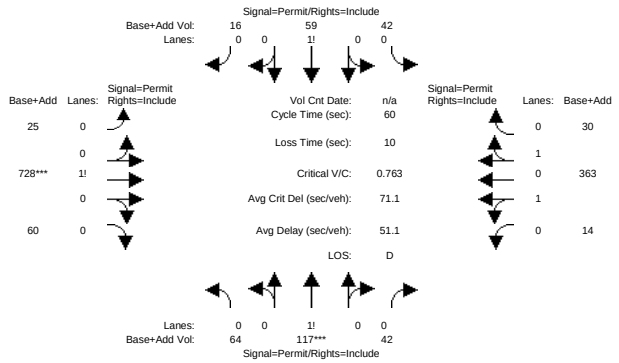
Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	24	24	24	24	24	24	26	26	26	26	26	26
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	64	117	42	42	59	16	25	728	60	14	363	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	117	42	42	59	16	25	728	60	14	363	30
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	117	42	42	59	16	25	728	60	14	363	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	70	129	46	46	65	18	27	800	66	15	399	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	129	46	46	65	18	27	800	66	15	399	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	129	46	46	65	18	27	800	66	15	399	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.82	0.82	0.82	0.97	0.97	0.97	0.87	0.87	0.87
Lanes:	0.29	0.52	0.19	0.36	0.50	0.14	0.03	0.90	0.07	0.07	1.78	0.15
Final Sat.:	467	854	307	562	789	214	57	1649	136	113	2939	243
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.08	0.08	0.08	0.49	0.49	0.49	0.14	0.14	0.14
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.38	0.38	0.38	0.21	0.21	0.21	1.12	1.12	1.12	0.31	0.31	0.31
Uniform Del:	12.7	12.7	12.7	11.8	11.8	11.8	17.0	17.0	17.0	11.1	11.1	11.1
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	70.1	70.1	70.1	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	87.1	87.1	87.1	11.3	11.3	11.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	87.1	87.1	87.1	11.3	11.3	11.3
LOS by Move:	B	B	B	B	B	B	F	F	F	B	B	B
HCM2kAvgQ:	3	3	3	2	2	2	27	27	27	3	3	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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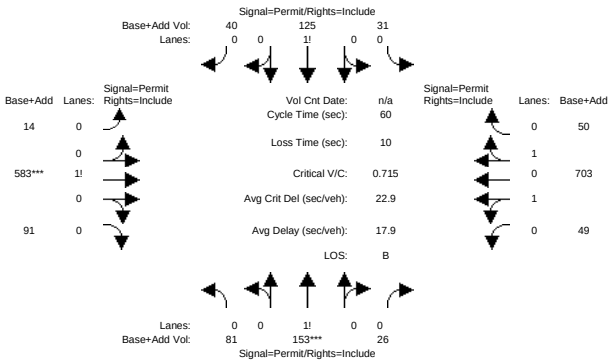
Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	81	153	26	31	125	40	14	583	91	49	703	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	153	26	31	125	40	14	583	91	49	703	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	81	153	26	31	125	40	14	583	91	49	703	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	89	168	29	34	137	44	15	641	100	54	773	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	168	29	34	137	44	15	641	100	54	773	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	168	29	34	137	44	15	641	100	54	773	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	0.83	0.89	0.89	0.89	0.96	0.96	0.96	0.81	0.81	0.81
Lanes:	0.31	0.59	0.10	0.16	0.64	0.20	0.02	0.85	0.13	0.12	1.76	0.12
Final Sat.:	491	927	158	268	1081	346	37	1546	241	188	2700	192
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.13	0.13	0.13	0.41	0.41	0.41	0.29	0.29	0.29
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.49	0.49	0.49	0.35	0.35	0.35	0.89	0.89	0.89	0.61	0.61	0.61
Uniform Del:	14.7	14.7	14.7	13.8	13.8	13.8	14.6	14.6	14.6	12.0	12.0	12.0
IncremntDel:	0.7	0.7	0.7	0.3	0.3	0.3	11.2	11.2	11.2	0.8	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	25.8	25.8	25.8	12.7	12.7	12.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	25.8	25.8	25.8	12.7	12.7	12.7
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	5	5	5	3	3	3	13	13	13	7	7	7

Note: Queue reported is the number of cars per lane.

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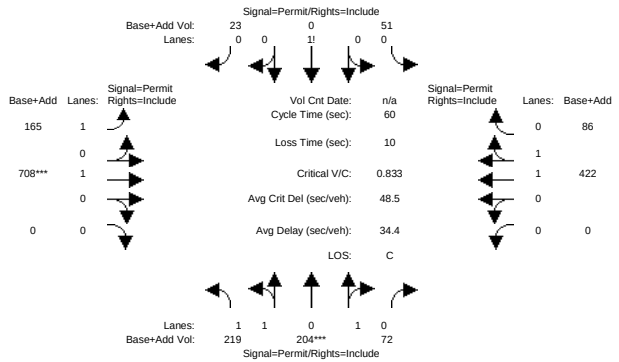
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	30	30	30	30	30	30
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	219	204	72	51	0	23	165	708	0	0	422	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	219	204	72	51	0	23	165	708	0	0	422	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	219	204	72	51	0	23	165	708	0	0	422	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	235	219	77	55	0	25	177	761	0	0	454	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	219	77	55	0	25	177	761	0	0	454	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	219	77	55	0	25	177	761	0	0	454	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.60	0.60	0.48	1.00	0.49	0.38	0.75	1.00	1.00	0.74	0.74
Lanes:	1.35	1.22	0.43	0.69	0.00	0.31	1.00	1.00	0.00	0.00	1.66	0.34
Final Sat.:	1500	1397	493	630	0	284	721	1418	0	0	2336	476
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.09	0.00	0.09	0.25	0.54	0.00	0.00	0.19	0.19
Crit Moves:		****						****				
Green/Cycle:	0.33	0.33	0.33	0.33	0.00	0.33	0.50	0.50	0.00	0.00	0.50	0.50
Volume/Cap:	0.47	0.47	0.47	0.26	0.00	0.26	0.49	1.07	0.00	0.00	0.39	0.39
Uniform Del:	15.8	15.8	15.8	14.6	0.0	14.6	9.9	15.0	0.0	0.0	9.3	9.3
IncremntDel:	1.4	1.4	1.4	2.1	0.0	2.1	4.7	55.4	0.0	0.0	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	17.2	17.2	17.2	16.7	0.0	16.7	14.7	70.4	0.0	0.0	10.1	10.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.2	17.2	17.2	16.7	0.0	16.7	14.7	70.4	0.0	0.0	10.1	10.1
LOS by Move:	B	B	B	B	A	B	B	E	A	A	B	B
HCM2kAvgQ:	3	3	3	1	0	1	2	23	0	0	3	3

Note: Queue reported is the number of cars per lane.

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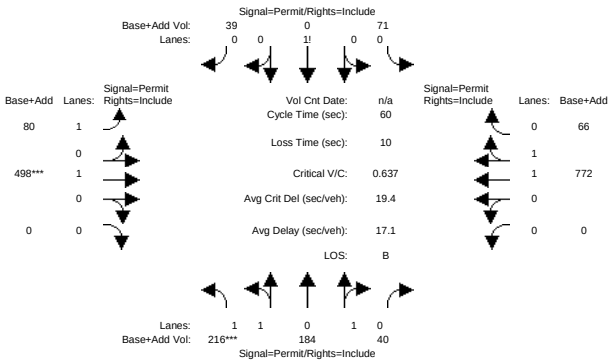
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	216	184	40	71	0	39	80	498	0	0	772	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	184	40	71	0	39	80	498	0	0	772	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	184	40	71	0	39	80	498	0	0	772	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	237	202	44	78	0	43	88	547	0	0	848	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	202	44	78	0	43	88	547	0	0	848	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	202	44	78	0	43	88	547	0	0	848	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.59	0.59	0.48	1.00	0.49	0.22	0.75	1.00	1.00	0.75	0.75
Lanes:	1.49	1.24	0.27	0.65	0.00	0.35	1.00	1.00	0.00	0.00	1.84	0.16
Final Sat.:	1639	1396	304	595	0	327	416	1418	0	0	2627	225
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.13	0.00	0.13	0.21	0.39	0.00	0.00	0.32	0.32
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.41	0.41	0.41	0.37	0.00	0.37	0.44	0.80	0.00	0.00	0.67	0.67
Uniform Del:	14.8	14.8	14.8	14.6	0.0	14.6	10.2	13.0	0.0	0.0	11.8	11.8
IncremntDel:	1.1	1.1	1.1	3.3	0.0	3.3	6.8	9.4	0.0	0.0	2.6	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.9	15.9	15.9	17.9	0.0	17.9	16.9	22.5	0.0	0.0	14.4	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.9	15.9	17.9	0.0	17.9	16.9	22.5	0.0	0.0	14.4	14.4
LOS by Move:	B	B	B	B	A	B	B	C	A	A	B	B
HCM2kAvgQ:	3	3	3	2	0	2	1	9	0	0	7	7

Note: Queue reported is the number of cars per lane.

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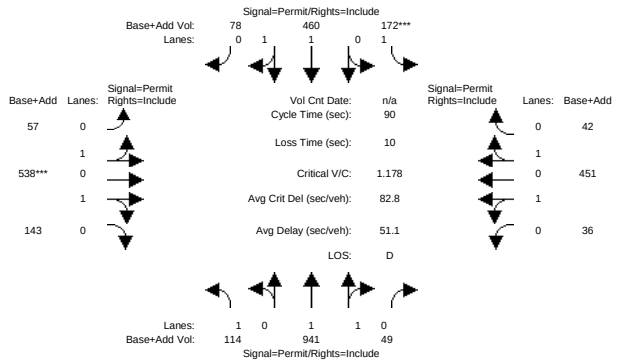
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	114	941	49	172	460	78	57	538	143	36	451	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	941	49	172	460	78	57	538	143	36	451	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	941	49	172	460	78	57	538	143	36	451	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	970	51	177	474	80	59	555	147	37	465	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	970	51	177	474	80	59	555	147	37	465	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	970	51	177	474	80	59	555	147	37	465	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.29	0.59	0.73	0.13	0.58	0.70	0.62	0.56	0.59	0.63	0.57	0.62
Lanes:	1.00	1.92	0.08	1.00	1.75	0.25	0.14	1.49	0.37	0.12	1.73	0.15
Final Sat.:	556	2145	112	255	1929	327	167	1576	419	149	1867	174
Capacity Analysis Module:												
Vol/Sat:	0.21	0.45	0.45	0.70	0.25	0.25	0.35	0.35	0.35	0.25	0.25	0.25
Crit Moves:				****				****				
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Volume/Cap:	0.48	1.02	1.02	1.56	0.55	0.55	0.79	0.79	0.79	0.56	0.56	0.56
Uniform Del:	17.6	25.0	25.0	25.0	18.4	18.4	21.4	21.4	21.4	18.5	18.5	18.5
IncremntDel:	6.4	32.9	32.9	292.3	2.2	2.2	6.7	6.7	6.7	2.3	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	24.0	57.9	57.9	317.3	20.6	20.6	28.1	28.1	28.1	20.8	20.8	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.0	57.9	57.9	317.3	20.6	20.6	28.1	28.1	28.1	20.8	20.8	20.8
LOS by Move:	C	E	E	F	C	C	C	C	C	C	C	C
HCM2kAvgQ:	3	22	26	15	6	7	12	12	12	7	6	7

Note: Queue reported is the number of cars per lane.

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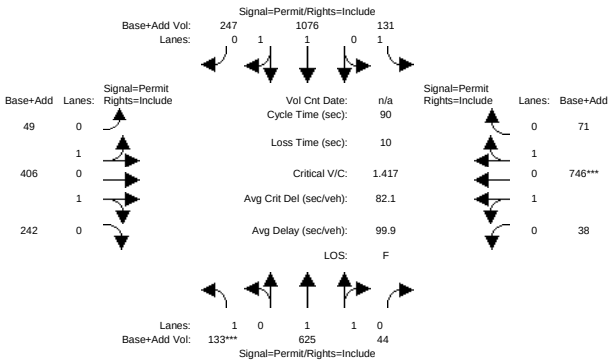
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	133	625	44	131	1076	247	49	406	242	38	746	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	625	44	131	1076	247	49	406	242	38	746	71
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	625	44	131	1076	247	49	406	242	38	746	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	137	644	45	135	1109	255	51	419	249	39	769	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	644	45	135	1109	255	51	419	249	39	769	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	137	644	45	135	1109	255	51	419	249	39	769	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.08	0.59	0.72	0.24	0.58	0.68	0.56	0.51	0.51	0.65	0.59	0.64
Lanes:	1.00	1.89	0.11	1.00	1.68	0.32	0.13	1.18	0.69	0.08	1.77	0.15
Final Sat.:	158	2108	148	454	1833	421	137	1131	674	100	1969	187
Capacity Analysis Module:												
Vol/Sat:	0.87	0.31	0.31	0.30	0.61	0.61	0.37	0.37	0.37	0.39	0.39	0.39
Crit Moves:	****										****	
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Volume/Cap:	1.71	0.69	0.69	0.67	1.36	1.36	0.83	0.83	0.83	0.88	0.88	0.88
Uniform Del:	25.0	20.0	20.0	19.8	25.0	25.0	22.0	22.0	22.0	22.8	22.8	22.8
IncremntDel:	368.4	3.8	3.8	16.3	169	169.1	9.2	9.2	9.2	10.9	10.9	10.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	393.4	23.9	23.9	36.1	194	194.1	31.3	31.3	31.3	33.6	33.6	33.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	393.4	23.9	23.9	36.1	194	194.1	31.3	31.3	31.3	33.6	33.6	33.6
LOS by Move:	F	C	C	D	F	F	C	C	C	C	C	C
HCM2kAvgQ:	12	9	11	4	44	51	13	12	12	15	13	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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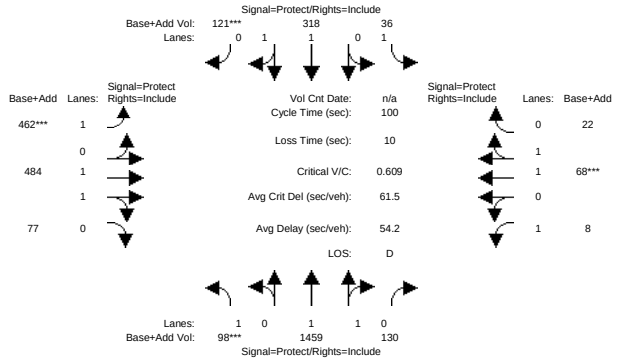
Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	23	51	51	4	32	44	31	27	27	12	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	98	1459	130	36	318	121	462	484	77	8	68	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	1459	130	36	318	121	462	484	77	8	68	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	1459	130	36	318	121	462	484	77	8	68	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	100	1489	133	37	324	123	471	494	79	8	69	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	1489	133	37	324	123	471	494	79	8	69	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	1489	133	37	324	123	471	494	79	8	69	22
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.79	0.79	0.81	0.77	0.75	0.81	0.74	0.73	0.81	0.78	0.76
Lanes:	1.00	1.84	0.16	1.00	1.44	0.56	1.00	1.72	0.28	1.00	1.50	0.50
Final Sat.:	1539	2764	246	1539	2105	801	1539	2434	387	1539	2228	721
Capacity Analysis Module:												
Vol/Sat:	0.06	0.54	0.54	0.02	0.15	0.15	0.31	0.20	0.20	0.01	0.03	0.03
Crit Moves:	****					****	****				****	
Green/Cycle:	0.20	0.54	0.54	0.03	0.38	0.38	0.30	0.23	0.23	0.10	0.03	0.03
Volume/Cap:	0.33	0.99	0.99	0.69	0.41	0.41	1.01	0.87	0.87	0.05	0.90	0.90
Uniform Del:	39.9	26.3	26.3	55.4	26.4	26.4	40.5	42.8	42.8	46.9	55.8	55.8
IncremntDel:	2.8	20.5	20.5	53.5	1.1	1.1	45.6	14.8	14.8	0.6	65.8	65.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.7	46.8	46.8	108.8	27.5	27.5	86.1	57.7	57.7	47.5	122	121.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.7	46.8	46.8	108.8	27.5	27.5	86.1	57.7	57.7	47.5	122	121.6
LOS by Move:	D	D	D	F	C	C	F	E	E	D	F	F
HCM2kAvgQ:	3	37	37	1	6	6	21	11	11	0	4	4

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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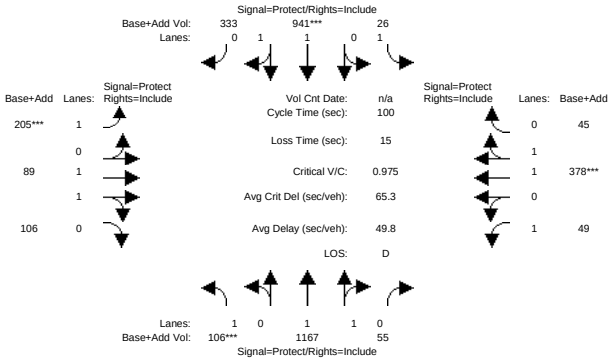
Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	5	50	50	5	50	50	15	15	15	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	106	1167	55	26	941	333	205	89	106	49	378	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	1167	55	26	941	333	205	89	106	49	378	45
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	1167	55	26	941	333	205	89	106	49	378	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	112	1228	58	27	991	351	216	94	112	52	398	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	1228	58	27	991	351	216	94	112	52	398	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	1228	58	27	991	351	216	94	112	52	398	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.79	0.81	0.77	0.71	0.81	0.70	0.66	0.81	0.80	0.78
Lanes:	1.00	1.91	0.09	1.00	1.44	0.56	1.00	1.00	1.00	1.00	1.78	0.22
Final Sat.:	1539	2889	136	1539	2115	748	1539	1325	1259	1539	2701	322
Capacity Analysis Module:												
Vol/Sat:	0.07	0.43	0.43	0.02	0.47	0.47	0.14	0.07	0.09	0.03	0.15	0.15
Crit Moves:	****				****		****				****	
Green/Cycle:	0.07	0.51	0.51	0.05	0.50	0.50	0.15	0.17	0.17	0.11	0.13	0.13
Volume/Cap:	1.10	0.83	0.83	0.35	0.94	0.94	0.93	0.41	0.52	0.29	1.10	1.10
Uniform Del:	46.7	20.5	20.5	45.8	23.5	23.5	42.0	37.0	37.8	40.6	43.3	43.3
IncremntDel:	118.5	5.2	5.2	11.5	12.8	12.8	44.4	2.6	4.8	4.2	74.1	74.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	165.2	25.7	25.7	57.3	36.4	36.4	86.4	39.6	42.6	44.9	117	117.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	165.2	25.7	25.7	57.3	36.4	36.4	86.4	39.6	42.6	44.9	117	117.4
LOS by Move:	F	C	C	E	D	D	F	D	D	D	F	F
HCM2kAvgQ:	8	20	20	1	20	18	8	3	3	2	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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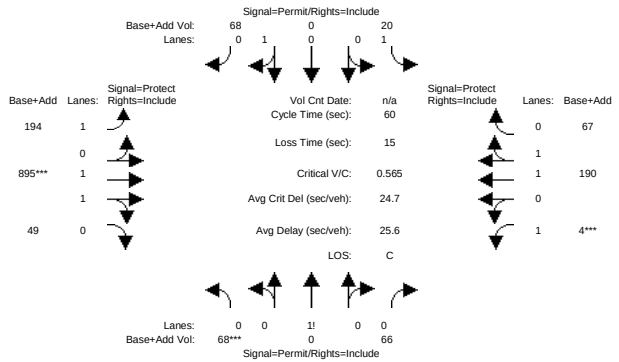
Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	68	0	66	20	0	68	194	895	49	4	190	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	0	66	20	0	68	194	895	49	4	190	67
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	0	66	20	0	68	194	895	49	4	190	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	72	0	69	21	0	72	204	942	52	4	200	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	0	69	21	0	72	204	942	52	4	200	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	0	69	21	0	72	204	942	52	4	200	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.61	1.00	0.61	0.64	1.00	0.68	0.81	0.75	0.75	0.81	0.73	0.72
Lanes:	0.51	0.00	0.49	1.00	0.00	1.00	1.00	1.90	0.10	1.00	1.47	0.53
Final Sat.:	592	0	574	1214	0	1295	1539	2714	149	1539	2043	720
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.02	0.00	0.06	0.13	0.35	0.35	0.00	0.10	0.10
Crit Moves:	****							****		****		
Green/Cycle:	0.17	0.00	0.17	0.17	0.00	0.17	0.22	0.49	0.49	0.17	0.44	0.44
Volume/Cap:	0.70	0.00	0.70	0.10	0.00	0.32	0.60	0.70	0.70	0.02	0.22	0.22
Uniform Del:	35.1	0.0	35.1	31.4	0.0	32.6	31.5	17.6	17.6	31.3	15.6	15.6
IncremntDel:	18.5	0.0	18.5	1.0	0.0	3.8	7.7	2.9	2.9	0.1	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.6	0.0	53.6	32.3	0.0	36.4	39.2	20.6	20.6	31.5	16.0	16.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.6	0.0	53.6	32.3	0.0	36.4	39.2	20.6	20.6	31.5	16.0	16.0
LOS by Move:	D	A	D	C	A	D	D	C	C	C	B	B
HCM2kAvgQ:	5	0	5	1	0	2	6	12	12	0	2	2

Note: Queue reported is the number of cars per lane.

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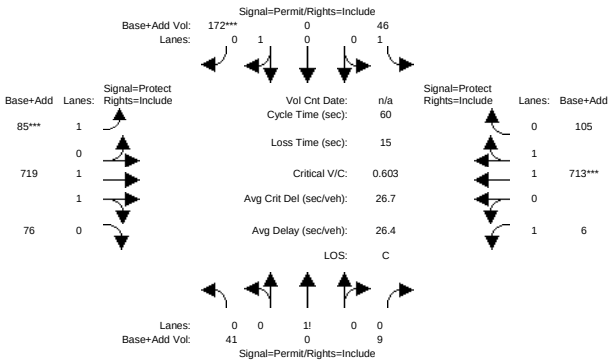
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	41	0	9	46	0	172	85	719	76	6	713	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	0	9	46	0	172	85	719	76	6	713	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	0	9	46	0	172	85	719	76	6	713	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	43	0	9	48	0	181	89	757	80	6	751	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	0	9	48	0	181	89	757	80	6	751	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	0	9	48	0	181	89	757	80	6	751	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.55	1.00	0.56	0.61	1.00	0.68	0.81	0.75	0.74	0.81	0.75	0.74
Lanes:	0.82	0.00	0.18	1.00	0.00	1.00	1.00	1.81	0.19	1.00	1.74	0.26
Final Sat.:	861	0	189	1151	0	1295	1539	2573	272	1539	2466	363
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.04	0.00	0.14	0.06	0.29	0.29	0.00	0.30	0.30
Crit Moves:						****	****				****	
Green/Cycle:	0.21	0.00	0.21	0.21	0.00	0.21	0.17	0.42	0.42	0.21	0.46	0.46
Volume/Cap:	0.24	0.00	0.24	0.20	0.00	0.67	0.35	0.71	0.71	0.02	0.67	0.67
Uniform Del:	29.6	0.0	29.6	29.3	0.0	32.7	33.2	21.8	21.8	28.4	19.1	19.1
IncremntDel:	2.5	0.0	2.5	1.9	0.0	12.2	3.7	3.6	3.6	0.1	2.7	2.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.1	0.0	32.1	31.2	0.0	44.9	36.9	25.4	25.4	28.5	21.8	21.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.1	0.0	32.1	31.2	0.0	44.9	36.9	25.4	25.4	28.5	21.8	21.8
LOS by Move:	C	A	C	C	A	D	D	C	C	C	C	C
HCM2kAvgQ:	1	0	1	1	0	6	3	11	11	0	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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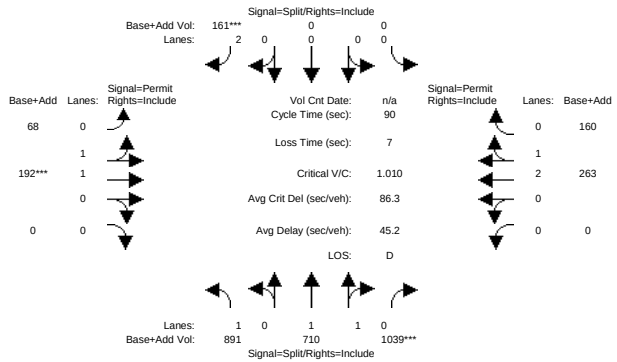
Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	58	58	58	10	10	10	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	891	710	1039	0	0	161	68	192	0	0	263	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	891	710	1039	0	0	161	68	192	0	0	263	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	891	710	1039	0	0	161	68	192	0	0	263	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	924	737	1078	0	0	167	71	199	0	0	273	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	924	737	1078	0	0	167	71	199	0	0	273	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	924	737	1078	0	0	167	71	199	0	0	273	166
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.76	1.00	1.00	0.61	0.61	0.64	1.00	1.00	0.85	0.79
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.54	1.46	0.00	0.00	2.00	1.00
Final Sat.:	2018	1461	1441	0	0	2325	631	1782	0	0	3214	1505
Capacity Analysis Module:												
Vol/Sat:	0.46	0.50	0.75	0.00	0.00	0.07	0.11	0.11	0.00	0.00	0.08	0.11
Crit Moves:			****			****		****				
Green/Cycle:	0.64	0.64	0.64	0.00	0.00	0.11	0.17	0.17	0.00	0.00	0.17	0.17
Volume/Cap:	0.71	0.78	1.16	0.00	0.00	0.65	0.67	0.67	0.00	0.00	0.51	0.66
Uniform Del:	10.5	11.5	16.0	0.0	0.0	38.3	35.2	35.2	0.0	0.0	34.1	35.1
IncremntDel:	3.3	2.7	79.9	0.0	0.0	11.9	8.6	8.6	0.0	0.0	2.1	5.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	13.8	14.2	95.9	0.0	0.0	50.2	43.8	43.8	0.0	0.0	36.3	40.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.8	14.2	95.9	0.0	0.0	50.2	43.8	43.8	0.0	0.0	36.3	40.3
LOS by Move:	B	B	F	A	A	D	D	D	A	A	D	D
HCM2kAvgQ:	17	17	54	0	0	4	4	4	0	0	4	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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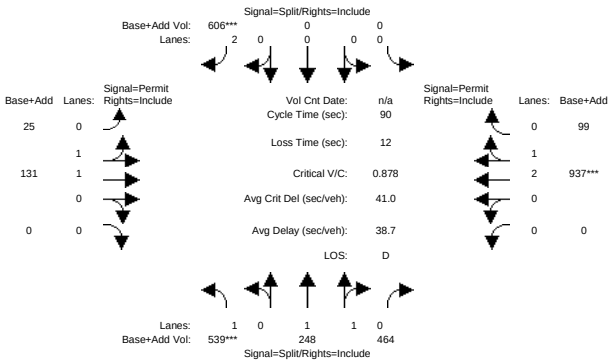
Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	29	29	29	26	26	26	23	23	23	23	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	539	248	464	0	0	606	25	131	0	0	937	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	539	248	464	0	0	606	25	131	0	0	937	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	539	248	464	0	0	606	25	131	0	0	937	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	561	258	483	0	0	631	26	136	0	0	976	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	561	258	483	0	0	631	26	136	0	0	976	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	561	258	483	0	0	631	26	136	0	0	976	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.76	0.81	1.00	1.00	0.62	0.64	0.67	1.00	1.00	0.88	0.84
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.33	1.67	0.00	0.00	2.70	0.30
Final Sat.:	2018	1446	1533	0	0	2358	404	2119	0	0	4538	480
Capacity Analysis Module:												
Vol/Sat:	0.28	0.18	0.32	0.00	0.00	0.27	0.06	0.06	0.00	0.00	0.22	0.22
Crit Moves:	****					****					****	
Green/Cycle:	0.36	0.36	0.36	0.00	0.00	0.29	0.26	0.26	0.00	0.00	0.26	0.26
Volume/Cap:	0.77	0.50	0.88	0.00	0.00	0.93	0.25	0.25	0.00	0.00	0.84	0.84
Uniform Del:	25.6	22.5	27.0	0.0	0.0	31.1	26.7	26.7	0.0	0.0	31.8	31.8
IncremntDel:	7.9	1.2	12.5	0.0	0.0	20.6	0.9	0.9	0.0	0.0	6.8	6.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	33.5	23.7	39.5	0.0	0.0	51.7	27.6	27.6	0.0	0.0	38.6	38.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.5	23.7	39.5	0.0	0.0	51.7	27.6	27.6	0.0	0.0	38.6	38.6
LOS by Move:	C	C	D	A	A	D	C	C	A	A	D	D
HCM2kAvgQ:	15	6	17	0	0	14	2	2	0	0	13	13

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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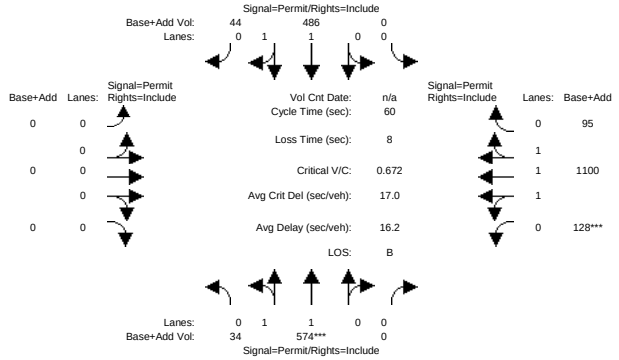
Intersection #45: Divisadero/Pine



Street Name:	Divisadero Street						Pine Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	26	0	0	26	0	26	0	26	26	0	26
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	34	574	0	0	486	44	0	0	0	128	1100	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	574	0	0	486	44	0	0	0	128	1100	95
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	574	0	0	486	44	0	0	0	128	1100	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	36	604	0	0	512	46	0	0	0	135	1158	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	604	0	0	512	46	0	0	0	135	1158	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	604	0	0	512	46	0	0	0	135	1158	100
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.69	1.00	1.00	0.74	0.74	1.00	1.00	1.00	0.72	0.72	0.72
Lanes:	0.11	1.89	0.00	0.00	1.83	0.17	0.00	0.00	0.00	0.29	2.49	0.22
Final Sat.:	146	2469	0	0	2588	234	0	0	0	399	3431	296
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.34	0.34	0.34
Crit Moves:		****								****		
Green/Cycle:	0.43	0.43	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.43	0.43	0.43
Volume/Cap:	0.56	0.56	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.78	0.78	0.78
Uniform Del:	12.8	12.8	0.0	0.0	12.0	12.0	0.0	0.0	0.0	14.5	14.5	14.5
IncremntDel:	2.0	2.0	0.0	0.0	1.2	1.2	0.0	0.0	0.0	3.4	3.4	3.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	14.8	14.8	0.0	0.0	13.2	13.2	0.0	0.0	0.0	18.0	18.0	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	14.8	0.0	0.0	13.2	13.2	0.0	0.0	0.0	18.0	18.0	18.0
LOS by Move:	B	B	A	A	B	B	A	A	A	B	B	B
HCM2kAvgQ:	4	4	0	0	4	4	0	0	0	10	10	10

Note: Queue reported is the number of cars per lane.

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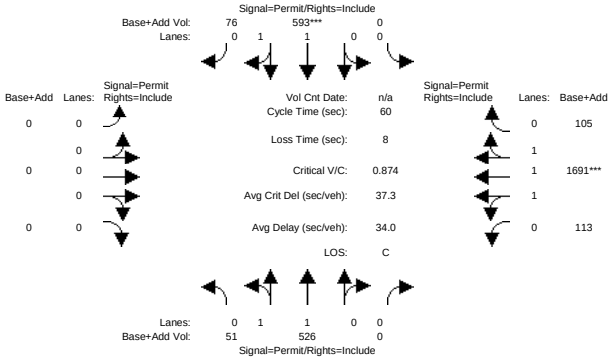
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #45: Divisadero/Pine



Street Name:	Divisadero Street						Pine Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	23	0	0	23	0	32	32	32	29	29	29
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	51	526	0	0	593	76	0	0	0	113	1691	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	526	0	0	593	76	0	0	0	113	1691	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	526	0	0	593	76	0	0	0	113	1691	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	55	572	0	0	645	83	0	0	0	123	1838	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	572	0	0	645	83	0	0	0	123	1838	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	572	0	0	645	83	0	0	0	123	1838	114
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	0.64	1.00	1.00	0.74	0.73	1.00	1.00	1.00	0.73	0.73	0.73
Lanes:	0.18	1.82	0.00	0.00	1.77	0.23	0.00	0.00	0.00	0.18	2.66	0.16
Final Sat.:	215	2215	0	0	2488	319	0	0	0	247	3691	229
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.00	0.00	0.26	0.26	0.00	0.00	0.00	0.50	0.50	0.50
Crit Moves:					****						****	
Green/Cycle:	0.38	0.38	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.48	0.48	0.48
Volume/Cap:	0.67	0.67	0.00	0.00	0.68	0.68	0.00	0.00	0.00	1.03	1.03	1.03
Uniform Del:	15.4	15.4	0.0	0.0	15.4	15.4	0.0	0.0	0.0	15.5	15.5	15.5
IncremntDel:	3.9	3.9	0.0	0.0	3.4	3.4	0.0	0.0	0.0	28.3	28.3	28.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	19.3	19.3	0.0	0.0	18.8	18.8	0.0	0.0	0.0	43.8	43.8	43.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.3	19.3	0.0	0.0	18.8	18.8	0.0	0.0	0.0	43.8	43.8	43.8
LOS by Move:	B	B	A	A	B	B	A	A	A	D	D	D
HCM2kAvgQ:	5	5	0	0	7	7	0	0	0	24	24	24

Note: Queue reported is the number of cars per lane.

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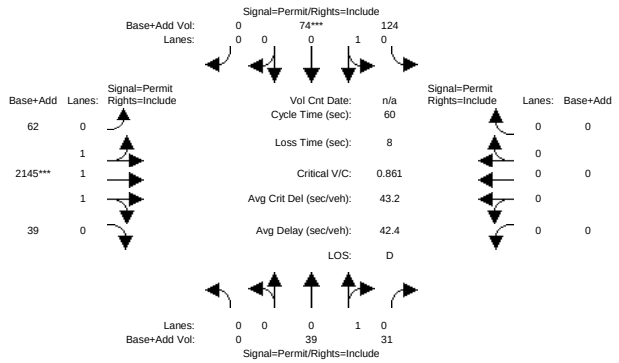
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #46: Broderick/Bush



Street Name:	Broderick Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	20	20	20	0	0	32	32	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	39	31	124	74	0	62	2145	39	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	31	124	74	0	62	2145	39	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	39	31	124	74	0	62	2145	39	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	41	32	129	77	0	65	2234	41	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	41	32	129	77	0	65	2234	41	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	41	32	129	77	0	65	2234	41	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.70	0.69	0.57	0.57	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.55	0.45	0.63	0.37	0.00	0.08	2.87	0.05	0.00	0.00	0.00
Final Sat.:	0	738	587	679	405	0	116	4021	73	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.19	0.19	0.00	0.56	0.56	0.56	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.33	0.33	0.33	0.33	0.00	0.53	0.53	0.53	0.00	0.00	0.00
Volume/Cap:	0.00	0.17	0.17	0.57	0.57	0.00	1.04	1.04	1.04	0.00	0.00	0.00
Uniform Del:	0.0	14.1	14.1	16.5	16.5	0.0	14.0	14.0	14.0	0.0	0.0	0.0
IncremntDel:	0.0	0.8	0.8	6.4	6.4	0.0	31.0	31.0	31.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.9	14.9	22.9	22.9	0.0	45.0	45.0	45.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.9	14.9	22.9	22.9	0.0	45.0	45.0	45.0	0.0	0.0	0.0
LOS by Move:	A	B	B	C	C	A	D	D	D	A	A	A
HCM2kAvgQ:	0	1	1	4	4	0	27	27	27	0	0	0

Note: Queue reported is the number of cars per lane.

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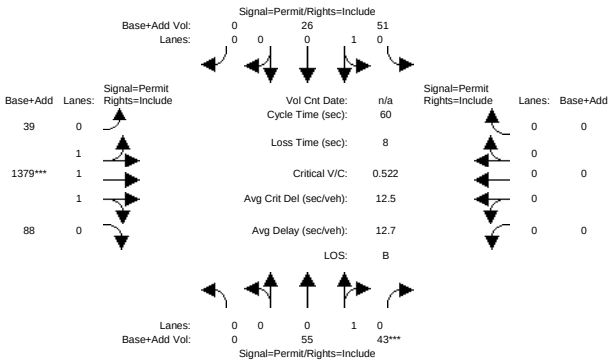
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #46: Broderick/Bush



Street Name:	Broderick Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	20	20	20	0	0	32	32	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	55	43	51	26	0	39	1379	88	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	55	43	51	26	0	39	1379	88	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	55	43	51	26	0	39	1379	88	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	57	45	53	27	0	41	1436	92	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	57	45	53	27	0	41	1436	92	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	57	45	53	27	0	41	1436	92	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.70	0.69	0.59	0.60	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.00	0.56	0.44	0.67	0.33	0.00	0.08	2.75	0.17	0.00	0.00	0.00
Final Sat.:	0	743	581	743	379	0	108	3831	244	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.08	0.08	0.07	0.07	0.00	0.37	0.37	0.37	0.00	0.00	0.00
Crit Moves:			****					****				
Green/Cycle:	0.00	0.33	0.33	0.33	0.33	0.00	0.53	0.53	0.53	0.00	0.00	0.00
Volume/Cap:	0.00	0.23	0.23	0.21	0.21	0.00	0.70	0.70	0.70	0.00	0.00	0.00
Uniform Del:	0.0	14.4	14.4	14.4	14.4	0.0	10.5	10.5	10.5	0.0	0.0	0.0
IncremntDel:	0.0	1.2	1.2	1.3	1.3	0.0	1.9	1.9	1.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	15.7	15.7	15.7	15.7	0.0	12.3	12.3	12.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.7	15.7	15.7	15.7	0.0	12.3	12.3	12.3	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	2	2	1	1	0	9	9	9	0	0	0

Note: Queue reported is the number of cars per lane.

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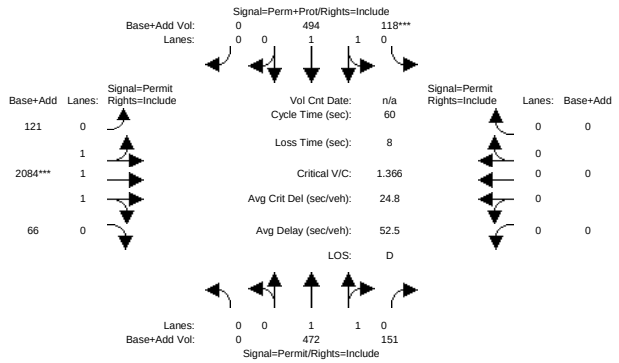
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #47: Divisadero/Bush



Street Name:	Divisadero Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	11	11	6	17	0	35	35	35	0	0	0
Y+R:	4.0	9.0	9.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	472	151	118	494	0	121	2084	66	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	472	151	118	494	0	121	2084	66	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	472	151	118	494	0	121	2084	66	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	497	159	124	520	0	127	2194	69	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	497	159	124	520	0	127	2194	69	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	497	159	124	520	0	127	2194	69	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.72	0.71	0.53	0.75	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.00	1.51	0.49	0.39	1.61	0.00	0.16	2.75	0.09	0.00	0.00	0.00
Final Sat.:	0	2080	665	391	2306	0	223	3843	122	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.24	0.32	0.23	0.00	0.57	0.57	0.57	0.00	0.00	0.00
Crit Moves:				****				****				
Green/Cycle:	0.00	0.18	0.18	0.28	0.28	0.00	0.58	0.58	0.58	0.00	0.00	0.00
Volume/Cap:	0.00	1.30	1.30	0.93	0.80	0.00	0.98	0.98	0.98	0.00	0.00	0.00
Uniform Del:	0.0	24.5	24.5	0.0	19.9	0.0	12.1	12.1	12.1	0.0	0.0	0.0
IncremntDel:	0.0	150	150.3	20.4	8.0	0.0	13.8	13.8	13.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	175	174.8	20.4	27.9	0.0	26.0	26.0	26.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	175	174.8	20.4	27.9	0.0	26.0	26.0	26.0	0.0	0.0	0.0
LOS by Move:	A	F	F	C	C	A	C	C	C	A	A	A
HCM2kAvgQ:	0	19	19	7	7	0	16	16	16	0	0	0

Note: Queue reported is the number of cars per lane.

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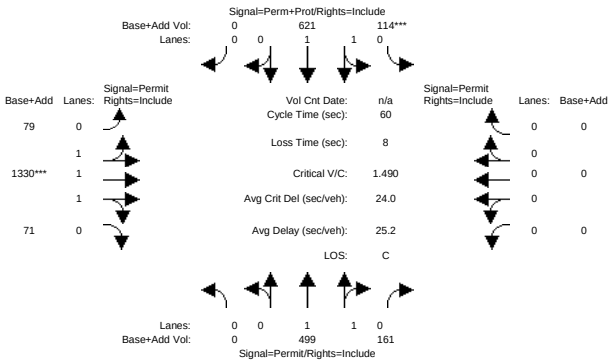
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #47: Divisadero/Bush



Street Name:	Divisadero Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	17	17	6	26	0	26	26	26	0	0	0
Y+R:	4.0	9.0	9.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	499	161	114	621	0	79	1330	71	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	499	161	114	621	0	79	1330	71	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	499	161	114	621	0	79	1330	71	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	542	175	124	675	0	86	1446	77	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	542	175	124	675	0	86	1446	77	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	542	175	124	675	0	86	1446	77	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.72	0.71	0.50	0.75	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.00	1.50	0.50	0.31	1.69	0.00	0.16	2.70	0.14	0.00	0.00	0.00
Final Sat.:	0	2071	668	292	2419	0	223	3752	200	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.26	0.42	0.28	0.00	0.39	0.39	0.39	0.00	0.00	0.00
Crit Moves:				****				****				
Green/Cycle:	0.00	0.28	0.28	0.43	0.43	0.00	0.43	0.43	0.43	0.00	0.00	0.00
Volume/Cap:	0.00	0.92	0.92	0.79	0.64	0.00	0.89	0.89	0.89	0.00	0.00	0.00
Uniform Del:	0.0	20.9	20.9	20.2	13.4	0.0	15.7	15.7	15.7	0.0	0.0	0.0
IncremntDel:	0.0	18.4	18.4	6.4	2.6	0.0	7.0	7.0	7.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	39.3	39.3	26.6	15.9	0.0	22.7	22.7	22.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	39.3	39.3	26.6	15.9	0.0	22.7	22.7	22.7	0.0	0.0	0.0
LOS by Move:	A	D	D	C	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	11	11	7	6	0	12	12	12	0	0	0

Note: Queue reported is the number of cars per lane.

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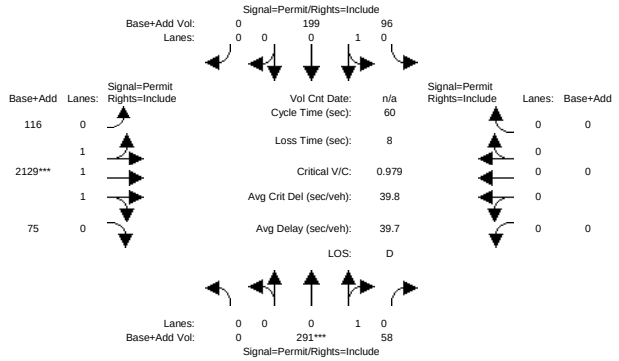
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #48: Scott/Bush



Street Name:	Scott Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	18	18	18	18	18	18	34	34	34	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	291	58	96	199	0	116	2129	75	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	291	58	96	199	0	116	2129	75	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	291	58	96	199	0	116	2129	75	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	306	61	101	209	0	122	2241	79	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	306	61	101	209	0	122	2241	79	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	306	61	101	209	0	122	2241	79	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.73	0.72	0.65	0.66	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Lanes:	0.00	0.83	0.17	0.33	0.67	0.00	0.15	2.75	0.10	0.00	0.00	0.00
Final Sat.:	0	1155	230	406	841	0	209	3844	135	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.25	0.25	0.00	0.58	0.58	0.58	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.30	0.30	0.30	0.30	0.00	0.57	0.57	0.57	0.00	0.00	0.00
Volume/Cap:	0.00	0.88	0.88	0.83	0.83	0.00	1.03	1.03	1.03	0.00	0.00	0.00
Uniform Del:	0.0	20.0	20.0	19.6	19.6	0.0	13.0	13.0	13.0	0.0	0.0	0.0
IncremntDel:	0.0	23.0	23.0	18.8	18.8	0.0	26.3	26.3	26.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	43.0	43.0	38.4	38.4	0.0	39.3	39.3	39.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	43.0	43.0	38.4	38.4	0.0	39.3	39.3	39.3	0.0	0.0	0.0
LOS by Move:	A	D	D	D	D	A	D	D	D	A	A	A
HCM2kAvgQ:	0	10	10	8	8	0	27	27	27	0	0	0

Note: Queue reported is the number of cars per lane.

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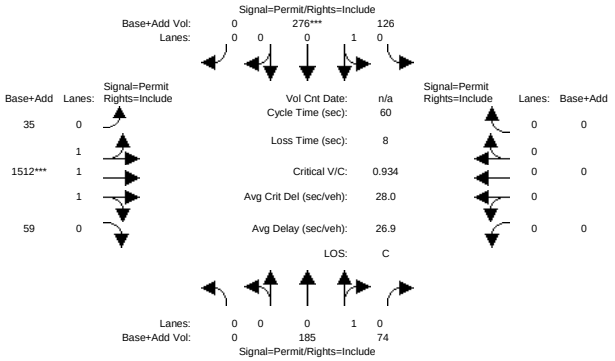
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #48: Scott/Bush



Street Name:	Scott Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	185	74	126	276	0	35	1512	59	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	185	74	126	276	0	35	1512	59	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	185	74	126	276	0	35	1512	59	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	208	83	142	310	0	39	1699	66	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	208	83	142	310	0	39	1699	66	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	208	83	142	310	0	39	1699	66	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.72	0.71	0.62	0.63	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.71	0.29	0.31	0.69	0.00	0.07	2.82	0.11	0.00	0.00	0.00
Final Sat.:	0	970	388	372	816	0	92	3955	154	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.38	0.38	0.00	0.43	0.43	0.43	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.56	0.56	0.99	0.99	0.00	0.89	0.89	0.89	0.00	0.00	0.00
Uniform Del:	0.0	14.5	14.5	18.4	18.4	0.0	14.0	14.0	14.0	0.0	0.0	0.0
IncremntDel:	0.0	4.3	4.3	40.2	40.2	0.0	6.3	6.3	6.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	18.8	18.8	58.6	58.6	0.0	20.3	20.3	20.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	18.8	18.8	58.6	58.6	0.0	20.3	20.3	20.3	0.0	0.0	0.0
LOS by Move:	A	B	B	E	E	A	C	C	C	A	A	A
HCM2kAvgQ:	0	5	5	15	15	0	15	15	15	0	0	0

Note: Queue reported is the number of cars per lane.

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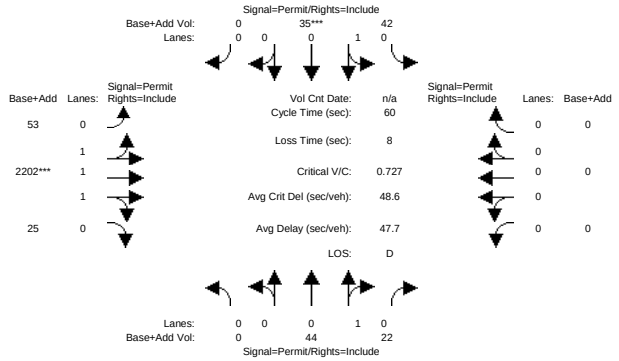
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #49: Bush/Pierce



Street Name:	Pierce Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	32	32	32	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	44	22	42	35	0	53	2202	25	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	44	22	42	35	0	53	2202	25	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	44	22	42	35	0	53	2202	25	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	46	23	44	36	0	55	2294	26	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	46	23	44	36	0	55	2294	26	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	46	23	44	36	0	55	2294	26	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.71	0.70	0.63	0.63	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.66	0.34	0.55	0.45	0.00	0.07	2.90	0.03	0.00	0.00	0.00
Final Sat.:	0	899	450	652	543	0	98	4074	46	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.05	0.07	0.07	0.00	0.56	0.56	0.56	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.33	0.33	0.33	0.33	0.00	0.53	0.53	0.53	0.00	0.00	0.00
Volume/Cap:	0.00	0.15	0.15	0.20	0.20	0.00	1.06	1.06	1.06	0.00	0.00	0.00
Uniform Del:	0.0	14.0	14.0	14.3	14.3	0.0	14.0	14.0	14.0	0.0	0.0	0.0
IncremntDel:	0.0	0.7	0.7	1.1	1.1	0.0	35.7	35.7	35.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	14.8	14.8	15.4	15.4	0.0	49.7	49.7	49.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.8	14.8	15.4	15.4	0.0	49.7	49.7	49.7	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	D	D	D	A	A	A
HCM2kAvgQ:	0	1	1	1	1	0	21	21	21	0	0	0

Note: Queue reported is the number of cars per lane.

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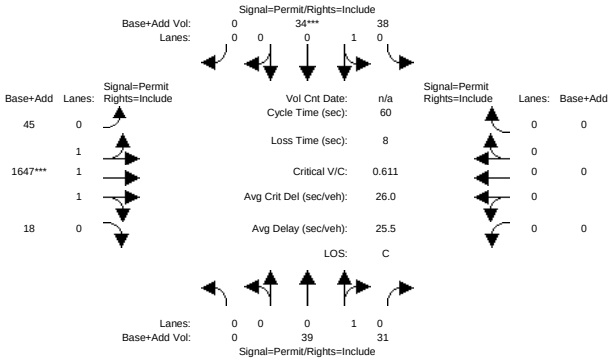
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #49: Bush/Pierce



Street Name:	Pierce Street						Bush Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	23	23	23	0	0	29	29	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	39	31	38	34	0	45	1647	18	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	31	38	34	0	45	1647	18	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	39	31	38	34	0	45	1647	18	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	0	44	35	43	39	0	51	1872	20	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	44	35	43	39	0	51	1872	20	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	44	35	43	39	0	51	1872	20	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.70	0.69	0.63	0.64	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Lanes:	0.00	0.55	0.45	0.53	0.47	0.00	0.08	2.89	0.03	0.00	0.00	0.00
Final Sat.:	0	736	585	634	568	0	111	4059	44	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.07	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.00	0.48	0.48	0.48	0.00	0.00	0.00
Volume/Cap:	0.00	0.16	0.16	0.18	0.18	0.00	0.95	0.95	0.95	0.00	0.00	0.00
Uniform Del:	0.0	12.1	12.1	12.2	12.2	0.0	14.9	14.9	14.9	0.0	0.0	0.0
IncremntDel:	0.0	0.7	0.7	0.8	0.8	0.0	11.7	11.7	11.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	12.8	12.8	13.1	13.1	0.0	26.6	26.6	26.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.8	12.8	13.1	13.1	0.0	26.6	26.6	26.6	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	1	1	1	1	0	14	14	14	0	0	0

Note: Queue reported is the number of cars per lane.

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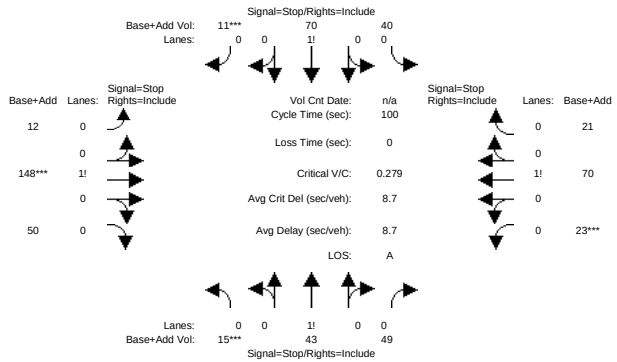
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #50: Broderick/Sutter



Street Name:	Broderick Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	15	43	49	40	70	11	12	148	50	23	70	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	43	49	40	70	11	12	148	50	23	70	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	43	49	40	70	11	12	148	50	23	70	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	15	44	51	41	72	11	12	153	52	24	72	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	44	51	41	72	11	12	153	52	24	72	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	44	51	41	72	11	12	153	52	24	72	22
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.14	0.40	0.46	0.33	0.58	0.09	0.06	0.70	0.24	0.20	0.62	0.18
Final Sat.:	104	297	338	234	409	64	44	546	185	149	454	136
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.18	0.18	0.18	0.28	0.28	0.28	0.16	0.16	0.16
Crit Moves:	****					****		****		****		
Delay/Veh:	8.3	8.3	8.3	8.7	8.7	8.7	9.1	9.1	9.1	8.4	8.4	8.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.3	8.3	8.3	8.7	8.7	8.7	9.1	9.1	9.1	8.4	8.4	8.4
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	8.3			8.7			9.1			8.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.3			8.7			9.1			8.4		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

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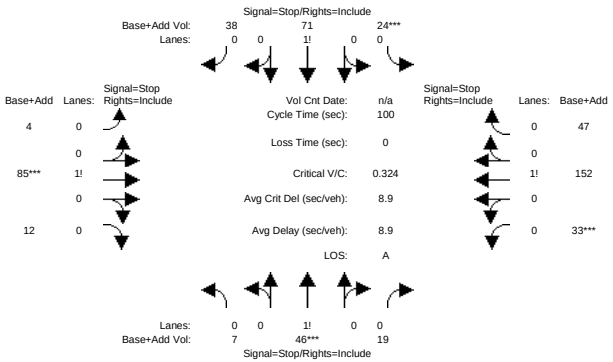
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #50: Broderick/Sutter



Street Name:	Broderick Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	7	46	19	24	71	38	4	85	12	33	152	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	46	19	24	71	38	4	85	12	33	152	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	46	19	24	71	38	4	85	12	33	152	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	8	50	21	26	77	41	4	92	13	36	165	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	50	21	26	77	41	4	92	13	36	165	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	50	21	26	77	41	4	92	13	36	165	51
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.10	0.64	0.26	0.18	0.53	0.29	0.04	0.84	0.12	0.14	0.66	0.20
Final Sat.:	68	449	185	130	386	207	29	619	87	111	509	157
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.20	0.20	0.20	0.15	0.15	0.15	0.32	0.32	0.32
Crit Moves:		****		****				****		****		
Delay/Veh:	8.3	8.3	8.3	8.7	8.7	8.7	8.4	8.4	8.4	9.5	9.5	9.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.3	8.3	8.3	8.7	8.7	8.7	8.4	8.4	8.4	9.5	9.5	9.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	8.3			8.7			8.4			9.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.3			8.7			8.4			9.5		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

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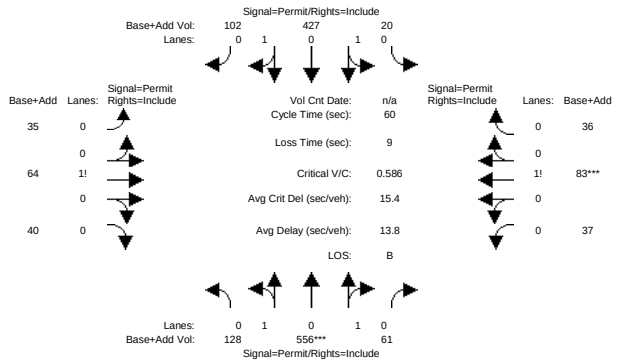
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #51: Divisadero/Sutter



Street Name:	Divisadero Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	128	556	61	20	427	102	35	64	40	37	83	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	128	556	61	20	427	102	35	64	40	37	83	36
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	128	556	61	20	427	102	35	64	40	37	83	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	133	579	64	21	445	106	36	67	42	39	86	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	579	64	21	445	106	36	67	42	39	86	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	133	579	64	21	445	106	36	67	42	39	86	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.56	0.57	0.55	0.67	0.67	0.65	0.60	0.63	0.59	0.62	0.64	0.61
Lanes:	0.34	1.49	0.17	0.07	1.55	0.38	0.26	0.44	0.30	0.24	0.52	0.24
Final Sat.:	368	1597	175	93	1977	472	294	538	336	284	636	276
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.36	0.23	0.23	0.23	0.12	0.12	0.12	0.14	0.14	0.14
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.70	0.70	0.70	0.44	0.44	0.44	0.37	0.37	0.37	0.41	0.41	0.41
Uniform Del:	11.0	11.0	11.0	9.0	9.0	9.0	15.2	15.2	15.2	15.4	15.4	15.4
IncremntDel:	3.7	3.7	3.7	1.1	1.1	1.1	2.7	2.7	2.7	3.1	3.1	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.7	14.7	14.7	10.1	10.1	10.1	17.9	17.9	17.9	18.5	18.5	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.7	14.7	14.7	10.1	10.1	10.1	17.9	17.9	17.9	18.5	18.5	18.5
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	6	6	6	4	4	4	2	2	2	3	3	3

Note: Queue reported is the number of cars per lane.

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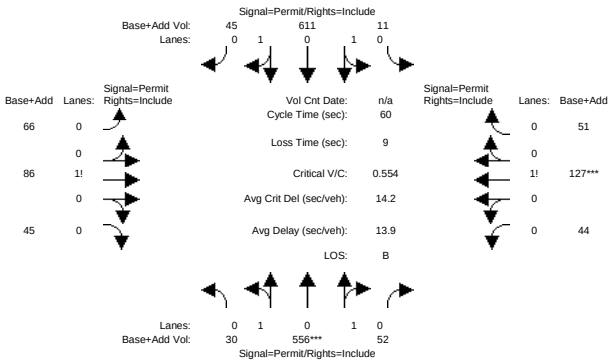
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #51: Divisadero/Sutter



Street Name:	Divisadero Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	30	556	52	11	611	45	66	86	45	44	127	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	556	52	11	611	45	66	86	45	44	127	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	556	52	11	611	45	66	86	45	44	127	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	33	604	57	12	664	49	72	93	49	48	138	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	604	57	12	664	49	72	93	49	48	138	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	604	57	12	664	49	72	93	49	48	138	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.67	0.70	0.70	0.70	0.59	0.60	0.59	0.64	0.64	0.63
Lanes:	0.09	1.75	0.16	0.03	1.83	0.14	0.34	0.43	0.23	0.20	0.57	0.23
Final Sat.:	120	2221	208	44	2448	180	377	492	257	240	694	279
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.27	0.27	0.27	0.19	0.19	0.19	0.20	0.20	0.20
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.53	0.53	0.53	0.53	0.53	0.53	0.57	0.57	0.57	0.60	0.60	0.60
Uniform Del:	9.6	9.6	9.6	9.6	9.6	9.6	16.5	16.5	16.5	16.6	16.6	16.6
IncremntDel:	1.5	1.5	1.5	1.4	1.4	1.4	6.2	6.2	6.2	6.4	6.4	6.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.1	11.1	11.1	11.0	11.0	11.0	22.6	22.6	22.6	23.0	23.0	23.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.1	11.1	11.1	11.0	11.0	11.0	22.6	22.6	22.6	23.0	23.0	23.0
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	4	4	4	5	5	5	4	4	4	5	5	5

Note: Queue reported is the number of cars per lane.

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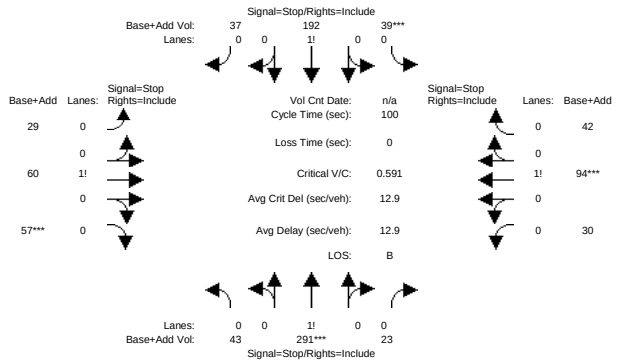
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #52: Sutter/Scott



Street Name:	Scott Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	43	291	23	39	192	37	29	60	57	30	94	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	291	23	39	192	37	29	60	57	30	94	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	291	23	39	192	37	29	60	57	30	94	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	47	316	25	42	209	40	32	65	62	33	102	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	316	25	42	209	40	32	65	62	33	102	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	316	25	42	209	40	32	65	62	33	102	46
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.12	0.82	0.06	0.14	0.72	0.14	0.20	0.41	0.39	0.18	0.57	0.25
Final Sat.:	79	535	42	92	454	87	111	229	217	101	317	142
Capacity Analysis Module:												
Vol/Sat:	0.59	0.59	0.59	0.46	0.46	0.46	0.28	0.28	0.28	0.32	0.32	0.32
Crit Moves:		****		****					****		****	
Delay/Veh:	15.0	15.0	15.0	12.5	12.5	12.5	10.7	10.7	10.7	11.1	11.1	11.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.0	15.0	15.0	12.5	12.5	12.5	10.7	10.7	10.7	11.1	11.1	11.1
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:	15.0			12.5			10.7			11.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	15.0			12.5			10.7			11.1		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	1.2	1.2	1.2	0.7	0.7	0.7	0.3	0.3	0.3	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

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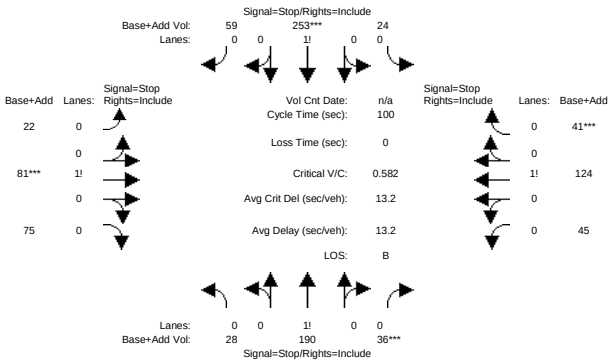
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #52: Sutter/Scott



Street Name:	Scott Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	28	190	36	24	253	59	22	81	75	45	124	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	190	36	24	253	59	22	81	75	45	124	41
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	190	36	24	253	59	22	81	75	45	124	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	207	39	26	275	64	24	88	82	49	135	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	207	39	26	275	64	24	88	82	49	135	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	207	39	26	275	64	24	88	82	49	135	45
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.11	0.75	0.14	0.07	0.75	0.18	0.12	0.46	0.42	0.21	0.59	0.20
Final Sat.:	66	447	85	45	472	110	69	253	234	120	330	109
Capacity Analysis Module:												
Vol/Sat:	0.46	0.46	0.46	0.58	0.58	0.58	0.35	0.35	0.35	0.41	0.41	0.41
Crit Moves:			****		****			****				****
Delay/Veh:	12.8	12.8	12.8	15.0	15.0	15.0	11.4	11.4	11.4	12.3	12.3	12.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.8	12.8	12.8	15.0	15.0	15.0	11.4	11.4	11.4	12.3	12.3	12.3
LOS by Move:	B	B	B	C	C	C	B	B	B	B	B	B
ApproachDel:	12.8			15.0			11.4			12.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.8			15.0			11.4			12.3		
LOS by Appr:	B			C			B			B		
AllWayAvgQ:	0.7	0.7	0.7	1.1	1.1	1.1	0.4	0.4	0.4	0.5	0.5	0.5

Note: Queue reported is the number of cars per lane.

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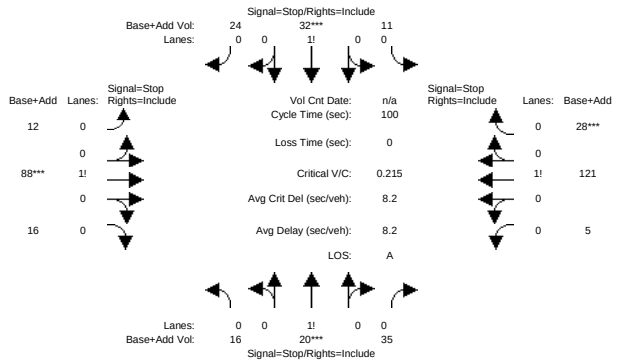
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #53: Pierce/Sutter



Street Name:	Pierce Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	16	20	35	11	32	24	12	88	16	5	121	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	20	35	11	32	24	12	88	16	5	121	28
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	20	35	11	32	24	12	88	16	5	121	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	18	23	40	13	36	27	14	100	18	6	138	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	23	40	13	36	27	14	100	18	6	138	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	23	40	13	36	27	14	100	18	6	138	32
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.23	0.28	0.49	0.16	0.48	0.36	0.10	0.76	0.14	0.03	0.79	0.18
Final Sat.:	173	217	379	124	361	271	82	603	110	26	639	148
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.10	0.10	0.10	0.17	0.17	0.17	0.22	0.22	0.22
Crit Moves:		****			****			****				****
Delay/Veh:	7.9	7.9	7.9	7.9	7.9	7.9	8.2	8.2	8.2	8.4	8.4	8.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.9	7.9	7.9	7.9	7.9	7.9	8.2	8.2	8.2	8.4	8.4	8.4
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		7.9			7.9			8.2			8.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.9			7.9			8.2			8.4	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3

Note: Queue reported is the number of cars per lane.

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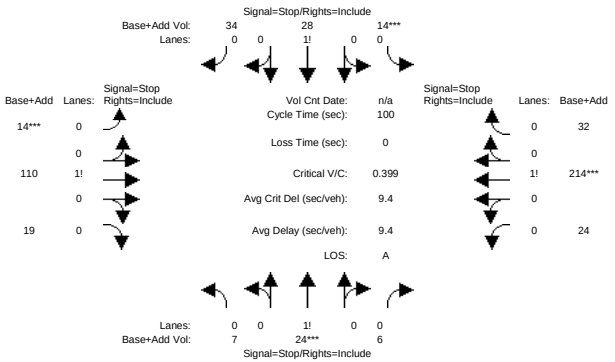
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #53: Pierce/Sutter



Street Name:	Pierce Street						Sutter Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	7	24	6	14	28	34	14	110	19	24	214	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	24	6	14	28	34	14	110	19	24	214	32
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	24	6	14	28	34	14	110	19	24	214	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	8	29	7	17	33	40	17	131	23	29	255	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	29	7	17	33	40	17	131	23	29	255	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	29	7	17	33	40	17	131	23	29	255	38
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.65	0.16	0.18	0.37	0.45	0.10	0.77	0.13	0.09	0.79	0.12
Final Sat.:	124	424	106	127	254	309	76	594	103	72	639	96
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.13	0.13	0.13	0.22	0.22	0.22	0.40	0.40	0.40
Crit Moves:		****			****			****				****
Delay/Veh:	8.3	8.3	8.3	8.4	8.4	8.4	8.7	8.7	8.7	10.1	10.1	10.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.3	8.3	8.3	8.4	8.4	8.4	8.7	8.7	8.7	10.1	10.1	10.1
LOS by Move:	A	A	A	A	A	A	A	A	A	B	B	B
ApproachDel:		8.3			8.4			8.7			10.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.3			8.4			8.7			10.1	
LOS by Appr:		A			A			A			B	
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.6	0.6	0.6

Note: Queue reported is the number of cars per lane.

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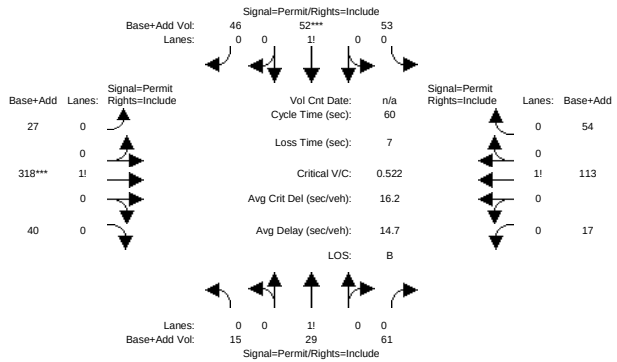
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #54: Broderick/Post



Street Name:	Broderick Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	24	24	24	24	0	29	29	29	0	0	0
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	15	29	61	53	52	46	27	318	40	17	113	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	29	61	53	52	46	27	318	40	17	113	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	29	61	53	52	46	27	318	40	17	113	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	17	33	69	60	58	52	30	357	45	19	127	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	33	69	60	58	52	30	357	45	19	127	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	33	69	60	58	52	30	357	45	19	127	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.64	0.62	0.63	0.62	0.72	0.72	0.71	0.68	0.68	0.67
Lanes:	0.14	0.27	0.59	0.35	0.34	0.31	0.07	0.83	0.10	0.09	0.61	0.30
Final Sat.:	176	340	715	415	407	360	95	1124	141	120	795	380
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.14	0.14	0.14	0.32	0.32	0.32	0.16	0.16	0.16
Crit Moves:					****			****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.24	0.24	0.24	0.36	0.36	0.36	0.66	0.66	0.66	0.33	0.33	0.33
Uniform Del:	11.9	11.9	11.9	12.6	12.6	12.6	11.7	11.7	11.7	9.5	9.5	9.5
IncremntDel:	1.1	1.1	1.1	2.1	2.1	2.1	5.1	5.1	5.1	1.4	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.1	13.1	13.1	14.7	14.7	14.7	16.8	16.8	16.8	10.9	10.9	10.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	13.1	13.1	14.7	14.7	14.7	16.8	16.8	16.8	10.9	10.9	10.9
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	2	2	2	3	3	3	7	7	7	3	3	3

Note: Queue reported is the number of cars per lane.

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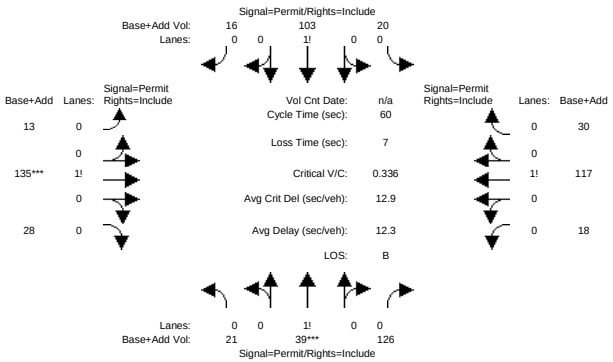
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #54: Broderick/Post



Street Name:	Broderick Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	24	24	24	24	0	29	29	29	0	0	0
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	21	39	126	20	103	16	13	135	28	18	117	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	39	126	20	103	16	13	135	28	18	117	30
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	39	126	20	103	16	13	135	28	18	117	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	22	41	133	21	108	17	14	142	29	19	123	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	41	133	21	108	17	14	142	29	19	123	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	41	133	21	108	17	14	142	29	19	123	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.66	0.63	0.70	0.70	0.70	0.72	0.72	0.71	0.70	0.70	0.70
Lanes:	0.11	0.20	0.69	0.14	0.74	0.12	0.07	0.77	0.16	0.11	0.71	0.18
Final Sat.:	137	255	825	191	985	153	100	1043	216	146	947	243
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.11	0.11	0.11	0.14	0.14	0.14	0.13	0.13	0.13
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.40	0.40	0.40	0.28	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27
Uniform Del:	12.9	12.9	12.9	12.1	12.1	12.1	9.3	9.3	9.3	9.2	9.2	9.2
IncremntDel:	2.5	2.5	2.5	1.3	1.3	1.3	1.1	1.1	1.1	1.0	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.3	15.3	15.3	13.4	13.4	13.4	10.3	10.3	10.3	10.2	10.2	10.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.3	15.3	15.3	13.4	13.4	13.4	10.3	10.3	10.3	10.2	10.2	10.2
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	3	3	3	2	2	2	2	2	2	2	2	2

Note: Queue reported is the number of cars per lane.

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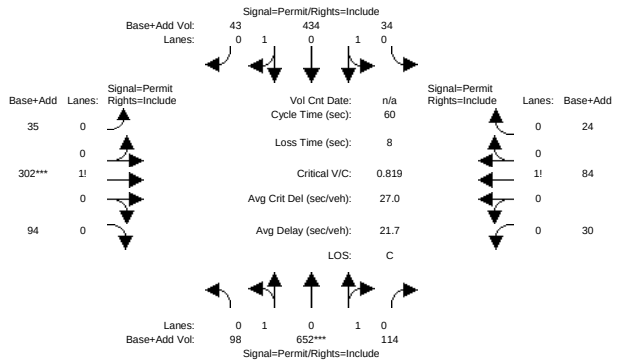
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #55: Divisadero/Post



Street Name:	Divisadero Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	98	652	114	34	434	43	35	302	94	30	84	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	652	114	34	434	43	35	302	94	30	84	24
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	652	114	34	434	43	35	302	94	30	84	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	100	665	116	35	443	44	36	308	96	31	86	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	665	116	35	443	44	36	308	96	31	86	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	665	116	35	443	44	36	308	96	31	86	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.62	0.61	0.65	0.65	0.65	0.69	0.70	0.67	0.64	0.65	0.62
Lanes:	0.23	1.50	0.27	0.13	1.70	0.17	0.08	0.69	0.23	0.22	0.60	0.18
Final Sat.:	266	1771	310	165	2108	209	107	923	287	265	741	212
Capacity Analysis Module:												
Vol/Sat:	0.38	0.38	0.38	0.21	0.21	0.21	0.33	0.33	0.33	0.12	0.12	0.12
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.73	0.73	0.73	0.41	0.41	0.41	0.95	0.95	0.95	0.33	0.33	0.33
Uniform Del:	11.2	11.2	11.2	8.9	8.9	8.9	19.0	19.0	19.0	14.3	14.3	14.3
IncremntDel:	3.8	3.8	3.8	1.0	1.0	1.0	32.0	32.0	32.0	2.1	2.1	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.1	15.1	15.1	9.8	9.8	9.8	51.0	51.0	51.0	16.4	16.4	16.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.1	15.1	15.1	9.8	9.8	9.8	51.0	51.0	51.0	16.4	16.4	16.4
LOS by Move:	B	B	B	A	A	A	D	D	D	B	B	B
HCM2kAvgQ:	6	6	6	3	3	3	13	13	13	2	2	2

Note: Queue reported is the number of cars per lane.

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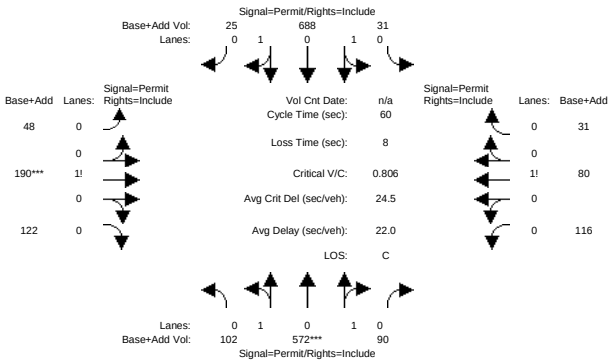
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #55: Divisadero/Post



Street Name:	Divisadero Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	31	31	31	31	31	31	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	102	572	90	31	688	25	48	190	122	116	80	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	572	90	31	688	25	48	190	122	116	80	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	572	90	31	688	25	48	190	122	116	80	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	109	609	96	33	732	27	51	202	130	123	85	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	609	96	33	732	27	51	202	130	123	85	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	609	96	33	732	27	51	202	130	123	85	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.55	0.56	0.55	0.68	0.68	0.68	0.65	0.66	0.61	0.42	0.45	0.44
Lanes:	0.27	1.49	0.24	0.08	1.85	0.07	0.13	0.51	0.36	0.52	0.34	0.14
Final Sat.:	282	1580	249	108	2395	87	163	645	414	420	290	112
Capacity Analysis Module:												
Vol/Sat:	0.39	0.39	0.39	0.31	0.31	0.31	0.31	0.31	0.31	0.29	0.29	0.29
Crit Moves:		****						****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.75	0.75	0.75	0.59	0.59	0.59	0.90	0.90	0.90	0.84	0.84	0.84
Uniform Del:	11.4	11.4	11.4	10.1	10.1	10.1	18.5	18.5	18.5	17.9	17.9	17.9
IncremntDel:	4.6	4.6	4.6	1.9	1.9	1.9	23.9	23.9	23.9	24.3	24.3	24.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	16.0	16.0	16.0	12.0	12.0	12.0	42.4	42.4	42.4	42.3	42.3	42.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.0	16.0	16.0	12.0	12.0	12.0	42.4	42.4	42.4	42.3	42.3	42.3
LOS by Move:	B	B	B	B	B	B	D	D	D	D	D	D
HCM2kAvgQ:	6	6	6	6	6	6	11	11	10	5	5	5

Note: Queue reported is the number of cars per lane.

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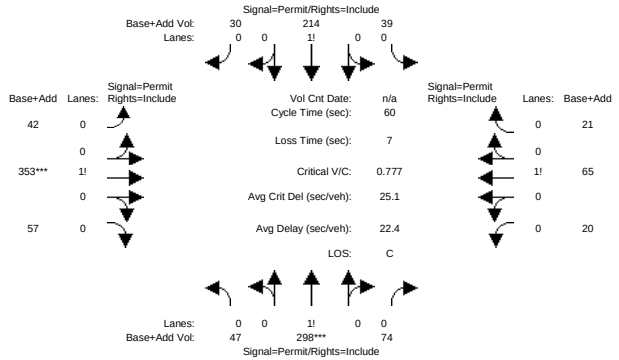
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #56: Scott/Post



Street Name:	Scott Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	29	29	29	29	29	29
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	47	298	74	39	214	30	42	353	57	20	65	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	298	74	39	214	30	42	353	57	20	65	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	298	74	39	214	30	42	353	57	20	65	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	49	310	77	41	223	31	44	368	59	21	68	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	310	77	41	223	31	44	368	59	21	68	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	310	77	41	223	31	44	368	59	21	68	22
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.67	0.67	0.67	0.67	0.71	0.71	0.70	0.65	0.66	0.65
Lanes:	0.11	0.71	0.18	0.14	0.75	0.11	0.09	0.78	0.13	0.19	0.61	0.20
Final Sat.:	145	921	229	176	967	136	125	1052	170	236	766	247
Capacity Analysis Module:												
Vol/Sat:	0.34	0.34	0.34	0.23	0.23	0.23	0.35	0.35	0.35	0.09	0.09	0.09
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.84	0.84	0.84	0.58	0.58	0.58	0.72	0.72	0.72	0.18	0.18	0.18
Uniform Del:	16.3	16.3	16.3	14.0	14.0	14.0	12.3	12.3	12.3	8.8	8.8	8.8
IncremntDel:	15.3	15.3	15.3	4.7	4.7	4.7	6.8	6.8	6.8	0.7	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.6	31.6	31.6	18.7	18.7	18.7	19.2	19.2	19.2	9.5	9.5	9.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.6	31.6	31.6	18.7	18.7	18.7	19.2	19.2	19.2	9.5	9.5	9.5
LOS by Move:	C	C	C	B	B	B	B	B	B	A	A	A
HCM2kAvgQ:	10	10	10	5	5	5	7	7	6	1	1	1

Note: Queue reported is the number of cars per lane.

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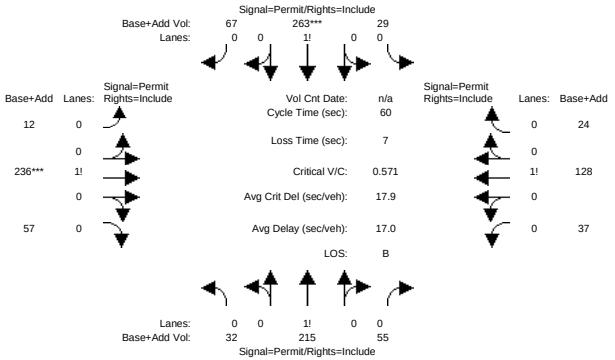
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #56: Scott/Post



Street Name:	Scott Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	29	29	29	29	29	29
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	32	215	55	29	263	67	12	236	57	37	128	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	215	55	29	263	67	12	236	57	37	128	24
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	215	55	29	263	67	12	236	57	37	128	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	33	219	56	30	268	68	12	241	58	38	131	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	219	56	30	268	68	12	241	58	38	131	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	219	56	30	268	68	12	241	58	38	131	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.69	0.68	0.70	0.70	0.69	0.72	0.72	0.71	0.66	0.67	0.66
Lanes:	0.11	0.71	0.18	0.08	0.73	0.19	0.04	0.77	0.19	0.20	0.67	0.13
Final Sat.:	138	925	237	107	970	247	54	1055	255	247	855	160
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.28	0.28	0.28	0.23	0.23	0.23	0.15	0.15	0.15
Crit Moves:					****			****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.59	0.59	0.59	0.69	0.69	0.69	0.47	0.47	0.47	0.32	0.32	0.32
Uniform Del:	14.2	14.2	14.2	14.9	14.9	14.9	10.4	10.4	10.4	9.5	9.5	9.5
IncremntDel:	4.9	4.9	4.9	7.2	7.2	7.2	2.4	2.4	2.4	1.4	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.1	19.1	19.1	22.2	22.2	22.2	12.8	12.8	12.8	10.8	10.8	10.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.1	19.1	19.1	22.2	22.2	22.2	12.8	12.8	12.8	10.8	10.8	10.8
LOS by Move:	B	B	B	C	C	C	B	B	B	B	B	B
HCM2kAvgQ:	5	5	5	7	7	7	4	4	4	2	2	2

Note: Queue reported is the number of cars per lane.

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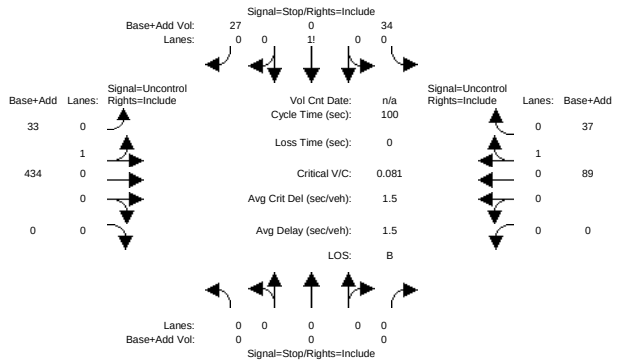
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #57: Pierce/Post



Street Name:	Pierce Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	34	0	27	33	434	0	0	89	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	34	0	27	33	434	0	0	89	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	34	0	27	33	434	0	0	89	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	35	0	28	34	452	0	0	93	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	35	0	28	34	452	0	0	93	39
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	633	633	112	131	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	447	400	947	1466	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	439	390	947	1466	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.08	0.00	0.03	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	576	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.0	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			12.0			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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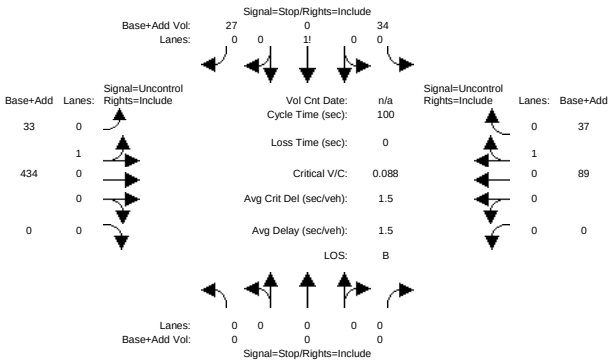
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #57: Pierce/Post



Street Name:	Pierce Street						Post Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	0	0	0	34	0	27	33	434	0	0	89	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	34	0	27	33	434	0	0	89	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	34	0	27	33	434	0	0	89	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	37	0	29	36	472	0	0	97	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	37	0	29	36	472	0	0	97	40
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	660	660	117	137	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	428	383	935	1447	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	420	373	935	1447	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.09	0.00	0.03	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	555	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.4	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			12.4			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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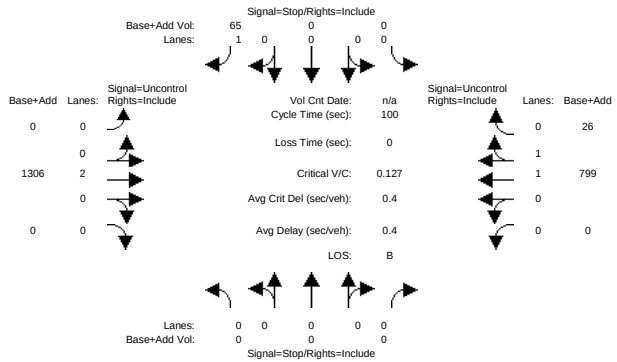
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 AM

Intersection #58: Broderick / Geary

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Street Name:         Broderick Street                Geary Blvd
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0    65     0 1306     0     0  799    26
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0    65     0 1306     0     0  799    26
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0     0    0    65     0 1306     0     0  799    26
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0     0    0    71     0 1420     0     0  868    28
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     0    0    71     0 1420     0     0  868    28
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx   448  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx   558  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx   558  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  0.13  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.4  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  12.4 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     B     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx            12.4           xxxxxx           xxxxxx
ApproachLOS:         *              B               *                *
Note: Queue reported is the number of cars per lane.
```

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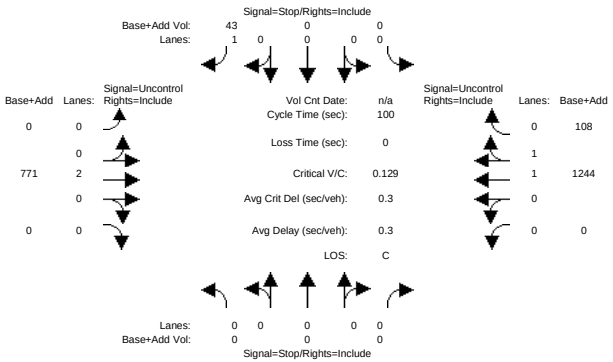
Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
2040 PM

Intersection #58: Broderick / Geary




```
Street Name:         Broderick Street                Geary Blvd
Approach:       North Bound      South Bound      East Bound      West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0     0    0    43     0  771     0     0 1244   108
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0     0    0    43     0  771     0     0 1244   108
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0     0    0    43     0  771     0     0 1244   108
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     0     0    0    47     0  838     0     0 1352   117
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0     0    0    47     0  838     0     0 1352   117
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx   735  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx   362  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx   362  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  0.13  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx   0.4  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx  16.4 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     C     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx            16.4           xxxxxx           xxxxxx
ApproachLOS:         *              C               *                *
Note: Queue reported is the number of cars per lane.
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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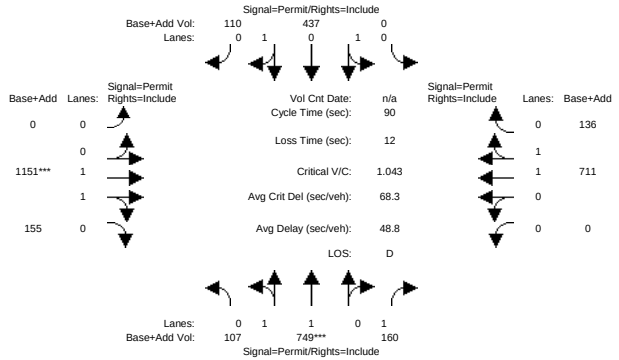
Intersection #59: Divisadero/Geary



Street Name:	Divisadero Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	32	32	32	32	32	32	46	46	46	46	46	46
Y+R:	7.0	7.0	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	107	749	160	0	437	110	0	1151	155	0	711	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	749	160	0	437	110	0	1151	155	0	711	136
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	749	160	0	437	110	0	1151	155	0	711	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	113	788	168	0	460	116	0	1212	163	0	748	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	113	788	168	0	460	116	0	1212	163	0	748	143
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	113	788	168	0	460	116	0	1212	163	0	748	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.57	0.58	0.55	0.95	0.73	0.70	1.00	0.74	0.72	1.00	0.73	0.72
Lanes:	0.25	1.75	1.00	0.00	1.59	0.41	0.00	1.76	0.24	0.00	1.67	0.33
Final Sat.:	273	1911	1037	0	2199	553	0	2464	332	0	2335	447
Capacity Analysis Module:												
Vol/Sat:	0.41	0.41	0.16	0.00	0.21	0.21	0.00	0.49	0.49	0.00	0.32	0.32
Crit Moves:		****						****				
Green/Cycle:	0.36	0.36	0.36	0.00	0.36	0.36	0.00	0.51	0.51	0.00	0.51	0.51
Volume/Cap:	1.16	1.16	0.46	0.00	0.59	0.59	0.00	0.96	0.96	0.00	0.63	0.63
Uniform Del:	29.0	29.0	22.3	0.0	23.6	23.6	0.0	21.2	21.2	0.0	15.8	15.8
IncremntDel:	86.2	86.2	4.0	0.0	2.6	2.6	0.0	16.3	16.3	0.0	2.1	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	115.2	115	26.4	0.0	26.2	26.2	0.0	37.5	37.5	0.0	17.9	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	115.2	115	26.4	0.0	26.2	26.2	0.0	37.5	37.5	0.0	17.9	17.9
LOS by Move:	F	F	C	A	C	C	A	D	D	A	B	B
HCM2kAvgQ:	25	25	4	0	7	7	0	25	25	0	10	10

Note: Queue reported is the number of cars per lane.

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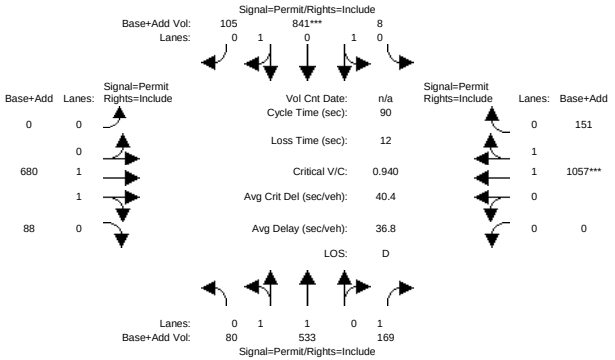
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #59: Divisadero/Geary



Street Name:	Divisadero Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	34	34	34	34	34	34	44	44	44	44	44	44
Y+R:	7.0	7.0	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	80	533	169	8	841	105	0	680	88	0	1057	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	533	169	8	841	105	0	680	88	0	1057	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	533	169	8	841	105	0	680	88	0	1057	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	549	174	8	867	108	0	701	91	0	1090	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	549	174	8	867	108	0	701	91	0	1090	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	549	174	8	867	108	0	701	91	0	1090	156
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.46	0.47	0.56	0.70	0.70	0.69	1.00	0.74	0.71	1.00	0.74	0.73
Lanes:	0.26	1.74	1.00	0.02	1.76	0.22	0.00	1.76	0.24	0.00	1.75	0.25
Final Sat.:	231	1538	1059	22	2345	293	0	2477	321	0	2449	350
Capacity Analysis Module:												
Vol/Sat:	0.36	0.36	0.16	0.37	0.37	0.37	0.00	0.28	0.28	0.00	0.44	0.44
Crit Moves:					****						****	
Green/Cycle:	0.38	0.38	0.38	0.38	0.38	0.38	0.00	0.49	0.49	0.00	0.49	0.49
Volume/Cap:	0.95	0.95	0.44	0.98	0.98	0.98	0.00	0.58	0.58	0.00	0.91	0.91
Uniform Del:	27.1	27.1	20.9	27.6	27.6	27.6	0.0	16.4	16.4	0.0	21.2	21.2
IncremntDel:	23.7	23.7	3.4	23.7	23.7	23.7	0.0	1.8	1.8	0.0	10.6	10.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	50.8	50.8	24.3	51.4	51.4	51.4	0.0	18.2	18.2	0.0	31.7	31.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.8	50.8	24.3	51.4	51.4	51.4	0.0	18.2	18.2	0.0	31.7	31.7
LOS by Move:	D	D	C	D	D	D	A	B	B	A	C	C
HCM2kAvgQ:	13	13	4	18	18	18	0	9	9	0	21	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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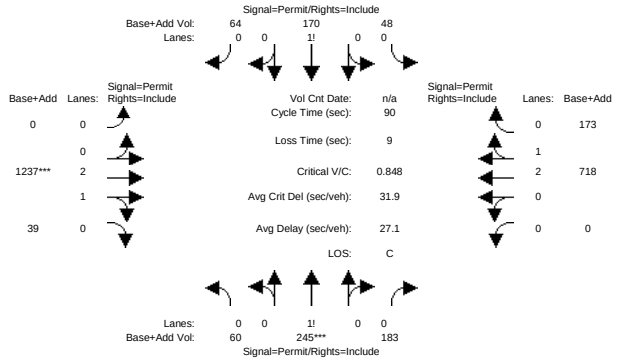
Intersection #60: Scott/Geary



Street Name:	Scott Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	35	35	35	35	35	35	41	41	41	41	41	41
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	60	245	183	48	170	64	0	1237	39	0	718	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	245	183	48	170	64	0	1237	39	0	718	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	245	183	48	170	64	0	1237	39	0	718	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	65	266	199	52	185	70	0	1345	42	0	780	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	266	199	52	185	70	0	1345	42	0	780	188
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	266	199	52	185	70	0	1345	42	0	780	188
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.64	0.62	0.62	0.61	1.00	0.74	0.73	1.00	0.72	0.71
Lanes:	0.12	0.50	0.38	0.17	0.60	0.23	0.00	2.91	0.09	0.00	2.41	0.59
Final Sat.:	151	616	460	200	708	266	0	4062	128	0	3287	792
Capacity Analysis Module:												
Vol/Sat:	0.43	0.43	0.43	0.26	0.26	0.26	0.00	0.33	0.33	0.00	0.24	0.24
Crit Moves:		****						****				
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.00	0.46	0.46	0.00	0.46	0.46
Volume/Cap:	0.97	0.97	0.97	0.59	0.59	0.59	0.00	0.73	0.73	0.00	0.52	0.52
Uniform Del:	24.5	24.5	24.5	18.8	18.8	18.8	0.0	19.9	19.9	0.0	17.5	17.5
IncremntDel:	32.3	32.3	32.3	4.8	4.8	4.8	0.0	2.5	2.5	0.0	1.0	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	56.8	56.8	56.8	23.6	23.6	23.6	0.0	22.4	22.4	0.0	18.5	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.8	56.8	56.8	23.6	23.6	23.6	0.0	22.4	22.4	0.0	18.5	18.5
LOS by Move:	E	E	E	C	C	C	A	C	C	A	B	B
HCM2kAvgQ:	20	20	20	7	7	7	0	13	13	0	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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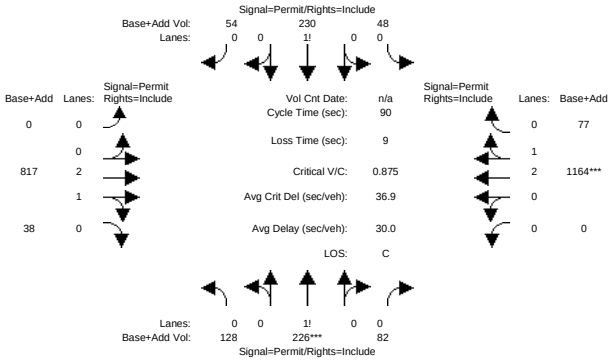
Intersection #60: Scott/Geary



Street Name:	Scott Street						Geary Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	35	35	35	35	35	35	41	41	41	41	41	41
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	128	226	82	48	230	54	0	817	38	0	1164	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	128	226	82	48	230	54	0	817	38	0	1164	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	128	226	82	48	230	54	0	817	38	0	1164	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	139	246	89	52	250	59	0	888	41	0	1265	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	246	89	52	250	59	0	888	41	0	1265	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	139	246	89	52	250	59	0	888	41	0	1265	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.54	0.54	0.53	0.65	0.65	0.64	1.00	0.73	0.73	1.00	0.73	0.73
Lanes:	0.29	0.52	0.19	0.14	0.70	0.16	0.00	2.87	0.13	0.00	2.81	0.19
Final Sat.:	300	529	192	178	854	200	0	3995	186	0	3913	259
Capacity Analysis Module:												
Vol/Sat:	0.46	0.46	0.46	0.29	0.29	0.29	0.00	0.22	0.22	0.00	0.32	0.32
Crit Moves:		****									****	
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.00	0.46	0.46	0.00	0.46	0.46
Volume/Cap:	1.04	1.04	1.04	0.66	0.66	0.66	0.00	0.49	0.49	0.00	0.71	0.71
Uniform Del:	25.0	25.0	25.0	19.6	19.6	19.6	0.0	17.2	17.2	0.0	19.7	19.7
IncremntDel:	54.4	54.4	54.4	6.1	6.1	6.1	0.0	0.9	0.9	0.0	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	79.4	79.4	79.4	25.8	25.8	25.8	0.0	18.0	18.0	0.0	22.0	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.4	79.4	79.4	25.8	25.8	25.8	0.0	18.0	18.0	0.0	22.0	22.0
LOS by Move:	E	E	E	E	C	C	A	B	B	A	C	C
HCM2kAvgQ:	21	21	21	9	9	9	0	7	7	0	12	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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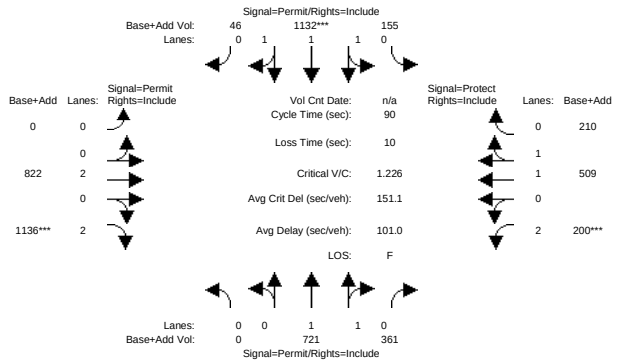
2040 AM

Intersection #61: S Van Ness/13th Street



Street Name:	S Van Ness						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	34	34	34	34	0	39	39	39	7	0	46
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	10.0	10.0	10.0	5.0	4.0	5.0
Volume Module:												
Base Vol:	0	721	361	155	1132	46	0	822	1136	200	509	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	721	361	155	1132	46	0	822	1136	200	509	210
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	721	361	155	1132	46	0	822	1136	200	509	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	767	384	165	1204	49	0	874	1209	213	541	223
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	767	384	165	1204	49	0	874	1209	213	541	223
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	767	384	165	1204	49	0	874	1209	213	541	223
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.72	0.71	0.49	0.49	0.49	1.00	0.81	0.63	0.79	0.77	0.77
Lanes:	0.00	1.33	0.67	0.35	2.55	0.10	0.00	2.00	2.00	2.00	1.41	0.59
Final Sat.:	0	1819	911	322	2350	95	0	3079	2386	2987	2078	858
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.42	0.51	0.51	0.51	0.00	0.28	0.51	0.07	0.26	0.26
Crit Moves:					****				****	****		
Green/Cycle:	0.00	0.38	0.38	0.38	0.38	0.38	0.00	0.43	0.43	0.08	0.51	0.51
Volume/Cap:	0.00	1.12	1.12	1.36	1.36	1.36	0.00	0.66	1.17	0.92	0.51	0.51
Uniform Del:	0.0	28.0	28.0	28.0	28.0	28.0	0.0	20.2	25.5	41.2	14.5	14.5
IncremntDel:	0.0	65.7	65.7	166.7	167	166.7	0.0	2.5	86.6	40.6	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	93.7	93.7	194.7	195	194.7	0.0	22.7	112.1	81.8	15.8	15.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	93.7	93.7	194.7	195	194.7	0.0	22.7	112.1	81.8	15.8	15.8
LOS by Move:	A	F	F	F	F	F	A	C	F	F	B	B
HCM2kAvgQ:	0	27	26	32	32	32	0	11	35	3	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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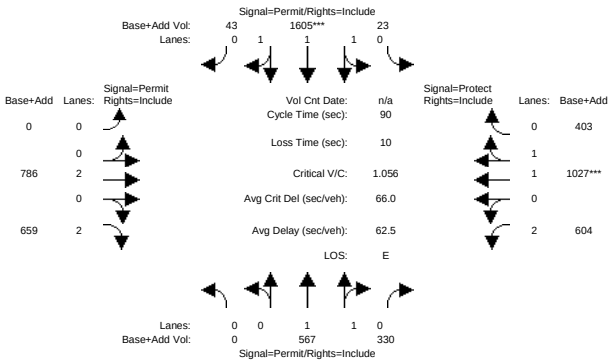
Intersection #61: S Van Ness/13th Street



Street Name:	S Van Ness						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	37	37	37	37	0	0	25	25	18	43	43
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	10.0	10.0	10.0	5.0	4.0	5.0
Volume Module:												
Base Vol:	0	567	330	23	1605	43	0	786	659	604	1027	403
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	567	330	23	1605	43	0	786	659	604	1027	403
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	567	330	23	1605	43	0	786	659	604	1027	403
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	579	337	23	1638	44	0	802	672	616	1048	411
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	579	337	23	1638	44	0	802	672	616	1048	411
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	579	337	23	1638	44	0	802	672	616	1048	411
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.72	0.70	0.68	0.68	0.68	1.00	0.81	0.60	0.79	0.78	0.76
Lanes:	0.00	1.25	0.75	0.04	2.88	0.08	0.00	2.00	2.00	2.00	1.43	0.57
Final Sat.:	0	1707	994	53	3707	99	0	3079	2275	2987	2107	827
Capacity Analysis Module:												
Vol/Sat:	0.00	0.34	0.34	0.44	0.44	0.44	0.00	0.26	0.30	0.21	0.50	0.50
Crit Moves:					****						****	
Green/Cycle:	0.00	0.41	0.41	0.41	0.41	0.41	0.00	0.28	0.28	0.20	0.48	0.48
Volume/Cap:	0.00	0.82	0.82	1.07	1.07	1.07	0.00	0.94	1.06	1.03	1.04	1.04
Uniform Del:	0.0	23.6	23.6	26.5	26.5	26.5	0.0	31.7	32.5	36.0	23.5	23.5
IncremntDel:	0.0	7.0	7.0	45.6	45.6	45.6	0.0	18.9	54.0	45.2	35.3	35.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	30.6	30.6	72.1	72.1	72.1	0.0	50.7	86.5	81.2	58.8	58.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.6	30.6	72.1	72.1	72.1	0.0	50.7	86.5	81.2	58.8	58.8
LOS by Move:	A	C	C	E	E	E	A	D	F	F	E	E
HCM2kAvgQ:	0	14	13	27	27	27	0	16	18	10	25	24

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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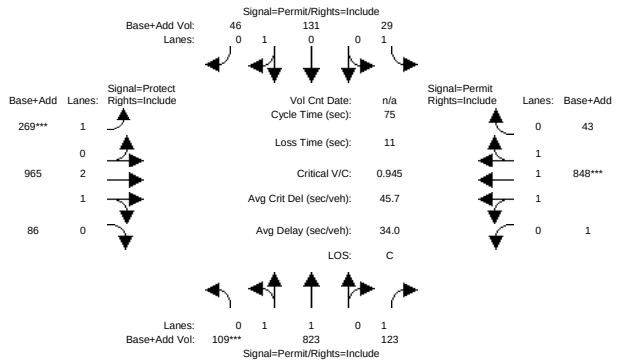
Intersection #62: 13th St / Folsom



Street Name:	Folsom Street						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	29	0	29	29	29	29	10	35	35	21	21	21
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	109	823	123	29	131	46	269	965	86	1	848	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	823	123	29	131	46	269	965	86	1	848	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	823	123	29	131	46	269	965	86	1	848	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	117	885	132	31	141	49	289	1038	92	1	912	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	885	132	31	141	49	289	1038	92	1	912	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	117	885	132	31	141	49	289	1038	92	1	912	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.54	0.13	0.72	0.71	0.81	0.77	0.76	0.69	0.69	0.69
Lanes:	0.23	1.77	1.00	1.00	0.74	0.26	1.00	2.75	0.25	0.01	2.85	0.14
Final Sat.:	312	2354	1027	252	1006	353	1539	4011	357	4	3762	191
Capacity Analysis Module:												
Vol/Sat:	0.38	0.38	0.13	0.12	0.14	0.14	0.19	0.26	0.26	0.24	0.24	0.24
Crit Moves:	****						****				****	
Green/Cycle:	0.39	0.39	0.39	0.39	0.39	0.39	0.19	0.47	0.47	0.28	0.28	0.28
Volume/Cap:	0.97	0.97	0.33	0.32	0.36	0.36	1.01	0.55	0.55	0.87	0.87	0.87
Uniform Del:	22.6	22.6	16.2	16.1	16.4	16.4	30.5	14.4	14.4	25.7	25.7	25.7
IncremntDel:	22.1	22.1	2.2	8.5	1.9	1.9	54.7	1.1	1.1	9.1	9.1	9.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	44.7	44.7	18.4	24.6	18.3	18.3	85.2	15.5	15.5	34.8	34.8	34.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.7	44.7	18.4	24.6	18.3	18.3	85.2	15.5	15.5	34.8	34.8	34.8
LOS by Move:	D	D	B	C	B	B	F	B	B	C	C	C
HCM2kAvgQ:	15	15	2	1	3	3	9	7	7	9	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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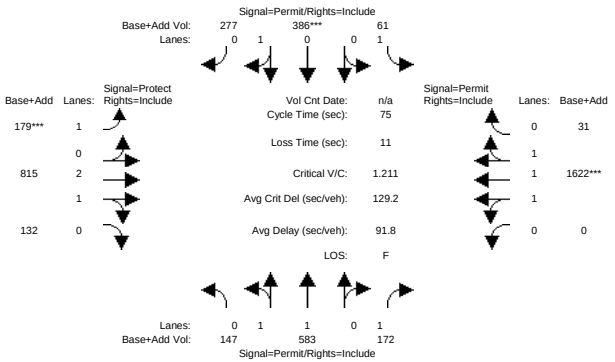
Intersection #62: 13th St / Folsom



Street Name:	Folsom Street						13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	28	28	28	28	28	28	7	36	36	25	25	25
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	147	583	172	61	386	277	179	815	132	0	1622	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	147	583	172	61	386	277	179	815	132	0	1622	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	147	583	172	61	386	277	179	815	132	0	1622	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	150	595	176	62	394	283	183	832	135	0	1655	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	595	176	62	394	283	183	832	135	0	1655	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	595	176	62	394	283	183	832	135	0	1655	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.42	0.42	0.59	0.24	0.70	0.68	0.81	0.76	0.75	0.91	0.74	0.74
Lanes:	0.40	1.60	1.00	1.00	0.57	0.43	1.00	2.58	0.42	0.00	2.94	0.06
Final Sat.:	324	1283	1118	453	764	548	1539	3719	602	0	4147	79
Capacity Analysis Module:												
Vol/Sat:	0.46	0.46	0.16	0.14	0.52	0.52	0.12	0.22	0.22	0.00	0.40	0.40
Crit Moves:					****		****				****	
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.10	0.43	0.43	0.00	0.33	0.33
Volume/Cap:	1.10	1.10	0.37	0.32	1.22	1.22	1.22	0.52	0.52	0.00	1.20	1.20
Uniform Del:	21.6	21.6	14.8	14.5	21.6	21.6	33.9	15.7	15.7	0.0	25.0	25.0
IncremntDel:	63.8	63.8	2.2	4.5	114	114.4	145.4	1.0	1.0	0.0	96.0	96.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	85.4	85.4	17.0	18.9	136	136.0	179.3	16.7	16.7	0.0	121	121.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.4	85.4	17.0	18.9	136	136.0	179.3	16.7	16.7	0.0	121	121.0
LOS by Move:	F	F	B	B	F	F	F	B	B	A	F	F
HCM2kAvgQ:	15	15	3	1	34	33	8	6	6	0	26	26

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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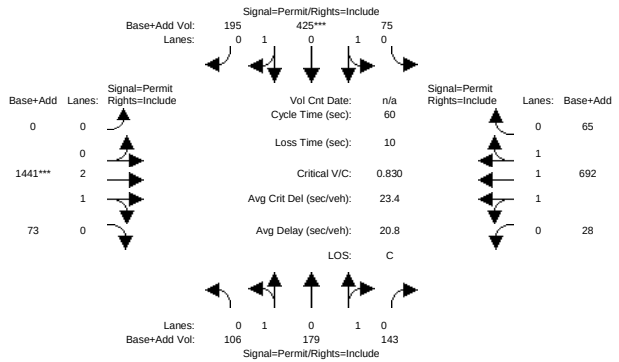
Intersection #63: 13th St / Harrison



Street Name:	Harrison Street								13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	25	25	25	25	25	25	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	106	179	143	75	425	195	0	1441	73	28	692	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	179	143	75	425	195	0	1441	73	28	692	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	179	143	75	425	195	0	1441	73	28	692	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	112	188	151	79	447	205	0	1517	77	29	728	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	188	151	79	447	205	0	1517	77	29	728	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	188	151	79	447	205	0	1517	77	29	728	68
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.46	0.46	0.44	0.62	0.62	0.61	1.00	0.74	0.74	0.61	0.61	0.60
Lanes:	0.49	0.82	0.69	0.21	1.22	0.57	0.00	2.85	0.15	0.11	2.64	0.25
Final Sat.:	431	727	581	252	1430	656	0	4006	203	123	3045	286
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.26	0.31	0.31	0.31	0.00	0.38	0.38	0.24	0.24	0.24
Crit Moves:					****			****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.00	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.62	0.62	0.62	0.75	0.75	0.75	0.00	0.91	0.91	0.57	0.57	0.57
Uniform Del:	13.8	13.8	13.8	14.9	14.9	14.9	0.0	16.4	16.4	13.4	13.4	13.4
IncremntDel:	4.0	4.0	4.0	5.3	5.3	5.3	0.0	8.5	8.5	1.7	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.8	17.8	17.8	20.2	20.2	20.2	0.0	24.9	24.9	15.1	15.1	15.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.8	17.8	17.8	20.2	20.2	20.2	0.0	24.9	24.9	15.1	15.1	15.1
LOS by Move:	B	B	B	C	C	C	A	C	C	B	B	B
HCM2kAvgQ:	5	5	5	8	8	8	0	13	13	5	5	5

Note: Queue reported is the number of cars per lane.

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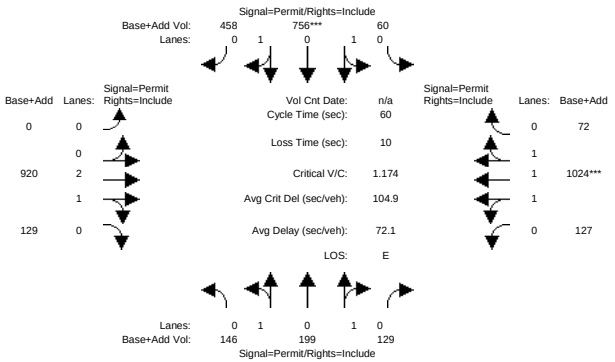
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #63: 13th St / Harrison



Street Name:	Harrison Street								13th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	27	27	27	27	27	27	23	23	23	23	23	23
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	146	199	129	60	756	458	0	920	129	127	1024	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	146	199	129	60	756	458	0	920	129	127	1024	72
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	146	199	129	60	756	458	0	920	129	127	1024	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	151	205	133	62	779	472	0	948	133	131	1056	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	151	205	133	62	779	472	0	948	133	131	1056	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	151	205	133	62	779	472	0	948	133	131	1056	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.40	0.40	0.39	0.65	0.65	0.63	1.00	0.73	0.72	0.50	0.50	0.50
Lanes:	0.61	0.84	0.55	0.09	1.18	0.73	0.00	2.63	0.37	0.31	2.51	0.18
Final Sat.:	468	637	413	115	1449	878	0	3648	512	297	2398	169
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.54	0.54	0.54	0.00	0.26	0.26	0.44	0.44	0.44
Crit Moves:					****						****	
Green/Cycle:	0.45	0.45	0.45	0.45	0.45	0.45	0.00	0.38	0.38	0.38	0.38	0.38
Volume/Cap:	0.72	0.72	0.72	1.20	1.20	1.20	0.00	0.68	0.68	1.15	1.15	1.15
Uniform Del:	13.4	13.4	13.4	16.5	16.5	16.5	0.0	15.4	15.4	18.5	18.5	18.5
IncremntDel:	6.3	6.3	6.3	96.9	96.9	96.9	0.0	2.3	2.3	77.7	77.7	77.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.7	19.7	19.7	113.4	113	113.4	0.0	17.8	17.8	96.2	96.2	96.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.7	19.7	19.7	113.4	113	113.4	0.0	17.8	17.8	96.2	96.2	96.2
LOS by Move:	B	B	B	F	F	F	A	B	B	F	F	F
HCM2kAvgQ:	6	6	6	31	31	30	0	7	6	18	18	18

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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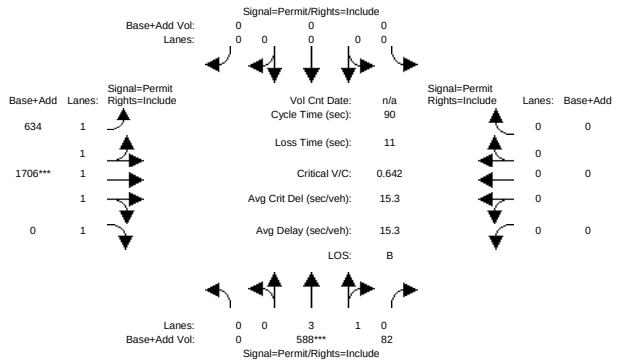
Intersection #64: 10th St / Bryant



Street Name:	Bryant Street						10th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	19	19	0	0	0	0	59	59	0	0	0
Y+R:	4.0	5.5	5.5	4.0	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	588	82	0	0	0	634	1706	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	588	82	0	0	0	634	1706	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	588	82	0	0	0	634	1706	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	608	85	0	0	0	656	1764	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	608	85	0	0	0	656	1764	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	608	85	0	0	0	656	1764	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.74	0.68	1.00	1.00	1.00	0.72	0.73	0.91	1.00	1.00	1.00
Lanes:	0.00	3.48	0.52	0.00	0.00	0.00	1.09	2.91	1.00	0.00	0.00	0.00
Final Sat.:	0	4877	680	0	0	0	1493	4017	1729	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.12	0.12	0.00	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.21	0.21	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.59	0.59	0.00	0.00	0.00	0.66	0.66	0.00	0.00	0.00	0.00
Uniform Del:	0.0	32.0	32.0	0.0	0.0	0.0	8.9	8.9	0.0	0.0	0.0	0.0
IncremntDel:	0.0	2.2	2.2	0.0	0.0	0.0	0.9	0.9	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	34.2	34.2	0.0	0.0	0.0	9.9	9.9	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	34.2	34.2	0.0	0.0	0.0	9.9	9.9	0.0	0.0	0.0	0.0
LOS by Move:	A	C	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	5	5	0	0	0	12	12	0	0	0	0

Note: Queue reported is the number of cars per lane.

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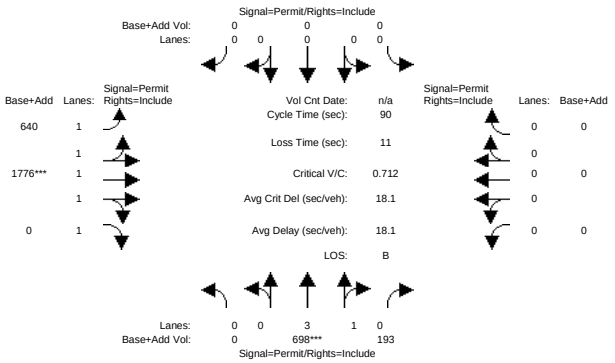
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #64: 10th St / Bryant



Street Name:	Bryant Street						10th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	19	19	0	0	0	0	59	59	0	0	0
Y+R:	4.0	5.5	5.5	4.0	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	698	193	0	0	0	640	1776	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	698	193	0	0	0	640	1776	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	698	193	0	0	0	640	1776	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	725	200	0	0	0	665	1844	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	725	200	0	0	0	665	1844	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	725	200	0	0	0	665	1844	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.73	0.73	1.00	1.00	1.00	0.73	0.73	0.91	1.00	1.00	1.00
Lanes:	0.00	3.07	0.93	0.00	0.00	0.00	1.06	2.94	1.00	0.00	0.00	0.00
Final Sat.:	0	4243	1173	0	0	0	1462	4058	1729	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.17	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.22	0.22	0.00	0.00	0.00	0.66	0.66	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.77	0.77	0.00	0.00	0.00	0.69	0.69	0.00	0.00	0.00	0.00
Uniform Del:	0.0	32.8	32.8	0.0	0.0	0.0	9.8	9.8	0.0	0.0	0.0	0.0
IncremntDel:	0.0	4.8	4.8	0.0	0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	37.6	37.6	0.0	0.0	0.0	10.9	10.9	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	37.6	37.6	0.0	0.0	0.0	10.9	10.9	0.0	0.0	0.0	0.0
LOS by Move:	A	D	D	A	A	A	B	B	A	A	A	A
HCM2kAvgQ:	0	8	7	0	0	0	13	13	0	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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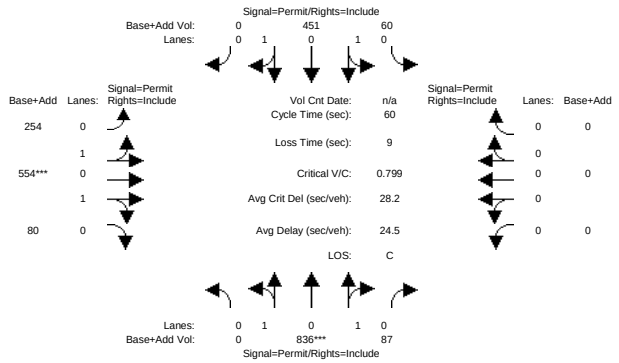
Intersection #65: 14th St / S Van Ness



Street Name:	S Van Ness						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	30	30	30	30	0	21	21	21	0	0	0
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	836	87	60	451	0	254	554	80	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	836	87	60	451	0	254	554	80	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	836	87	60	451	0	254	554	80	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	871	91	63	470	0	265	577	83	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	871	91	63	470	0	265	577	83	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	871	91	63	470	0	265	577	83	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.75	0.74	0.59	0.59	0.95	0.71	0.72	0.70	1.00	1.00	1.00
Lanes:	0.00	1.81	0.19	0.24	1.76	0.00	0.58	1.24	0.18	0.00	0.00	0.00
Final Sat.:	0	2576	268	265	1994	0	775	1690	244	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.34	0.34	0.24	0.24	0.00	0.34	0.34	0.34	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.50	0.50	0.50	0.50	0.00	0.35	0.35	0.35	0.00	0.00	0.00
Volume/Cap:	0.00	0.68	0.68	0.47	0.47	0.00	0.98	0.98	0.98	0.00	0.00	0.00
Uniform Del:	0.0	11.3	11.3	9.8	9.8	0.0	19.2	19.2	19.2	0.0	0.0	0.0
IncremntDel:	0.0	2.6	2.6	1.4	1.4	0.0	23.9	23.9	23.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	13.9	13.9	11.2	11.2	0.0	43.1	43.1	43.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.9	13.9	11.2	11.2	0.0	43.1	43.1	43.1	0.0	0.0	0.0
LOS by Move:	A	B	B	B	B	A	D	D	D	A	A	A
HCM2kAvgQ:	0	7	7	3	3	0	15	15	15	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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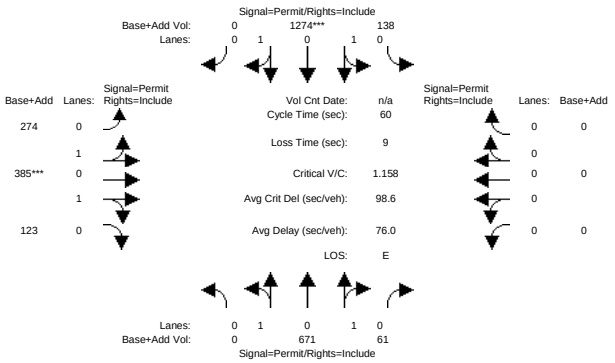
Intersection #65: 14th St / S Van Ness



Street Name:	S Van Ness						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	35	35	35	35	0	16	16	16	0	0	0
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	671	61	138	1274	0	274	385	123	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	671	61	138	1274	0	274	385	123	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	671	61	138	1274	0	274	385	123	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	706	64	145	1341	0	288	405	129	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	706	64	145	1341	0	288	405	129	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	706	64	145	1341	0	288	405	129	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.75	0.74	0.58	0.58	0.95	0.68	0.70	0.70	1.00	1.00	1.00
Lanes:	0.00	1.83	0.17	0.20	1.80	0.00	0.71	0.98	0.31	0.00	0.00	0.00
Final Sat.:	0	2613	238	216	1994	0	924	1299	415	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.67	0.67	0.00	0.31	0.31	0.31	0.00	0.00	0.00
Crit Moves:					****			****				
Green/Cycle:	0.00	0.58	0.58	0.58	0.58	0.00	0.27	0.27	0.27	0.00	0.00	0.00
Volume/Cap:	0.00	0.46	0.46	1.15	1.15	0.00	1.17	1.17	1.17	0.00	0.00	0.00
Uniform Del:	0.0	7.1	7.1	12.5	12.5	0.0	22.0	22.0	22.0	0.0	0.0	0.0
IncremntDel:	0.0	0.9	0.9	78.0	78.0	0.0	91.4	91.4	91.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	8.1	8.1	90.5	90.5	0.0	113.4	113	113.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.1	8.1	90.5	90.5	0.0	113.4	113	113.4	0.0	0.0	0.0
LOS by Move:	A	A	A	F	F	A	F	F	F	A	A	A
HCM2kAvgQ:	0	4	4	26	26	0	19	20	20	0	0	0

Note: Queue reported is the number of cars per lane.

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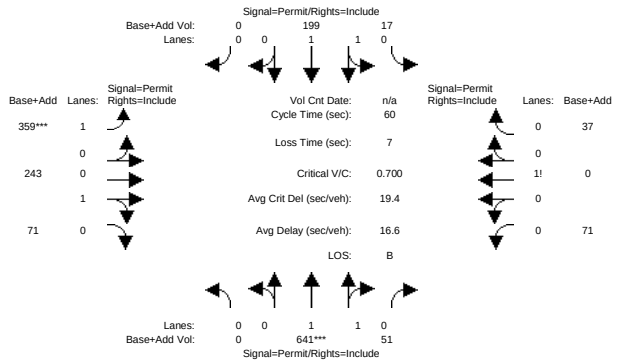
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #66: 14th St / Folsom



Street Name:	Folsom Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	22	22	22	22	0	21	21	21	7	0	7
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	4.0	3.5
Volume Module:												
Base Vol:	0	641	51	17	199	0	359	243	71	71	0	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	641	51	17	199	0	359	243	71	71	0	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	641	51	17	199	0	359	243	71	71	0	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	689	55	18	214	0	386	261	76	76	0	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	689	55	18	214	0	386	261	76	76	0	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	689	55	18	214	0	386	261	76	76	0	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.74	0.67	0.67	1.00	0.57	0.72	0.70	0.50	1.00	0.50
Lanes:	0.00	1.85	0.15	0.16	1.84	0.00	1.00	0.77	0.23	0.66	0.00	0.34
Final Sat.:	0	2641	210	201	2353	0	1079	1054	308	621	0	324
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.26	0.09	0.09	0.00	0.36	0.25	0.25	0.12	0.00	0.12
Crit Moves:		****			****							
Green/Cycle:	0.00	0.37	0.37	0.37	0.37	0.00	0.51	0.51	0.51	0.51	0.00	0.51
Volume/Cap:	0.00	0.70	0.70	0.24	0.24	0.00	0.70	0.49	0.49	0.24	0.00	0.24
Uniform Del:	0.0	16.0	16.0	13.0	13.0	0.0	11.2	9.5	9.5	8.2	0.0	8.2
IncremntDel:	0.0	3.9	3.9	0.6	0.6	0.0	7.2	2.4	2.4	1.2	0.0	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	19.8	19.8	13.6	13.6	0.0	18.4	12.0	12.0	9.4	0.0	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.8	19.8	13.6	13.6	0.0	18.4	12.0	12.0	9.4	0.0	9.4
LOS by Move:	A	B	B	B	B	A	B	B	B	A	A	A
HCM2kAvgQ:	0	8	8	2	2	0	5	4	4	1	0	1

Note: Queue reported is the number of cars per lane.

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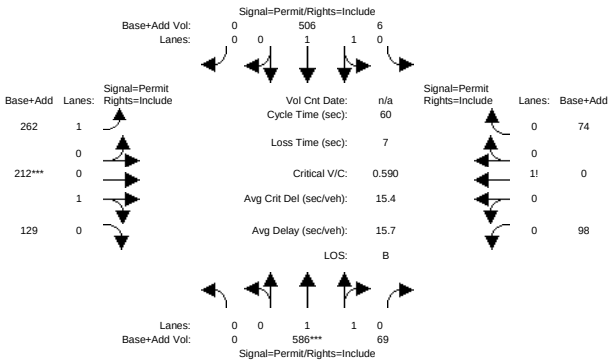
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #66: 14th St / Folsom



Street Name:	Folsom Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	29	29	29	29	0	24	24	24	9	0	9
Y+R:	4.0	3.5	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	4.0	3.5
Volume Module:												
Base Vol:	0	586	69	6	506	0	262	212	129	98	0	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	586	69	6	506	0	262	212	129	98	0	74
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	586	69	6	506	0	262	212	129	98	0	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	623	73	6	538	0	279	226	137	104	0	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	623	73	6	538	0	279	226	137	104	0	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	623	73	6	538	0	279	226	137	104	0	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.75	0.74	0.71	0.71	1.00	0.56	0.70	0.67	0.43	1.00	0.43
Lanes:	0.00	1.79	0.21	0.02	1.98	0.00	1.00	0.61	0.39	0.57	0.00	0.43
Final Sat.:	0	2537	299	32	2683	0	1056	818	498	469	0	354
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.25	0.20	0.20	0.00	0.26	0.28	0.28	0.22	0.00	0.22
Crit Moves:		****						****				
Green/Cycle:	0.00	0.48	0.48	0.48	0.48	0.00	0.40	0.40	0.40	0.40	0.00	0.40
Volume/Cap:	0.00	0.51	0.51	0.42	0.42	0.00	0.66	0.69	0.69	0.56	0.00	0.56
Uniform Del:	0.0	10.6	10.6	10.0	10.0	0.0	14.7	14.9	14.9	13.9	0.0	13.9
IncremntDel:	0.0	1.4	1.4	1.0	1.0	0.0	7.9	7.2	7.2	6.6	0.0	6.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	0.0	12.0	12.0	11.0	11.0	0.0	22.5	22.1	22.1	20.5	0.0	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.0	12.0	11.0	11.0	0.0	22.5	22.1	22.1	20.5	0.0	20.5
LOS by Move:	A	B	B	B	B	A	C	C	C	C	A	C
HCM2kAvgQ:	0	5	5	3	3	0	4	5	5	4	0	4

Note: Queue reported is the number of cars per lane.

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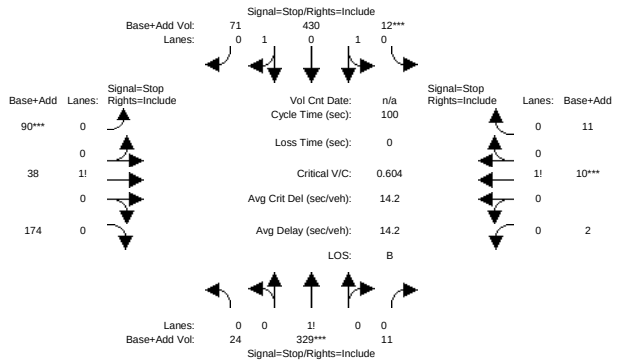
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #67: 14th St / Harrison



Street Name:	Harrison Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	24	329	11	12	430	71	90	38	174	2	10	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	329	11	12	430	71	90	38	174	2	10	11
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	329	11	12	430	71	90	38	174	2	10	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	25	339	11	12	443	73	93	39	179	2	10	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	339	11	12	443	73	93	39	179	2	10	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	339	11	12	443	73	93	39	179	2	10	11
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.07	0.90	0.03	0.05	1.67	0.28	0.30	0.12	0.58	0.09	0.43	0.48
Final Sat.:	41	562	19	27	1001	169	178	75	344	41	205	225
Capacity Analysis Module:												
Vol/Sat:	0.60	0.60	0.60	0.45	0.44	0.43	0.52	0.52	0.52	0.05	0.05	0.05
Crit Moves:		****		****			****				****	
Delay/Veh:	16.3	16.3	16.3	13.3	13.0	12.6	14.2	14.2	14.2	9.7	9.7	9.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.3	16.3	16.3	13.3	13.0	12.6	14.2	14.2	14.2	9.7	9.7	9.7
LOS by Move:	C	C	C	B	B	B	B	B	B	A	A	A
ApproachDel:		16.3			13.0			14.2			9.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		16.3			13.0			14.2			9.7	
LOS by Appr:		C			B			B			A	
AllWayAvgQ:	1.3	1.3	1.3	0.8	0.7	0.7	0.9	0.9	0.9	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

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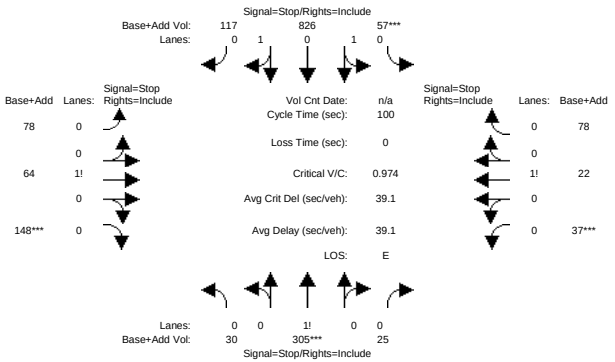
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #67: 14th St / Harrison



Street Name:	Harrison Street						14th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	30	305	25	57	826	117	78	64	148	37	22	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	305	25	57	826	117	78	64	148	37	22	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	305	25	57	826	117	78	64	148	37	22	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	31	318	26	59	860	122	81	67	154	39	23	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	318	26	59	860	122	81	67	154	39	23	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	318	26	59	860	122	81	67	154	39	23	81
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.08	0.85	0.07	0.11	1.66	0.23	0.27	0.22	0.51	0.27	0.16	0.57
Final Sat.:	44	449	37	61	897	129	137	113	260	122	72	256
Capacity Analysis Module:												
Vol/Sat:	0.71	0.71	0.71	0.97	0.96	0.94	0.59	0.59	0.59	0.32	0.32	0.32
Crit Moves:		****		****					****	****		
Delay/Veh:	23.2	23.2	23.2	58.3	54.6	50.4	18.5	18.5	18.5	13.3	13.3	13.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.2	23.2	23.2	58.3	54.6	50.4	18.5	18.5	18.5	13.3	13.3	13.3
LOS by Move:	C	C	C	F	F	F	C	C	C	B	B	B
ApproachDel:		23.2			54.3			18.5			13.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		23.2			54.3			18.5			13.3	
LOS by Appr:		C			F			C			B	
AllWayAvgQ:	2.0	2.0	2.0	7.3	6.3	6.3	1.2	1.2	1.2	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

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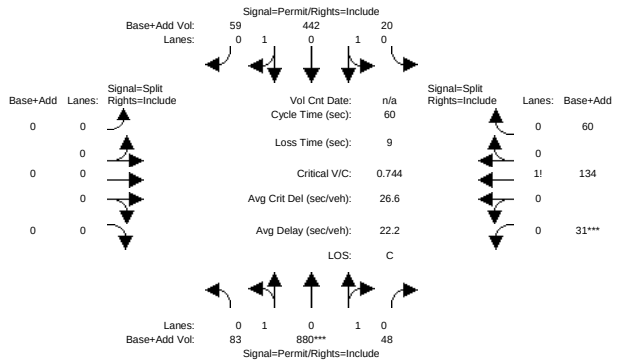
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #68: 15th St / S Van Ness



Street Name:	S Van Ness									15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	0	29	29	29	29	0	22	0	22	22	0	22	19	19	19
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5
Volume Module:															
Base Vol:	83	880	48	20	442	59	0	0	0	31	134	60			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	83	880	48	20	442	59	0	0	0	31	134	60			
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	83	880	48	20	442	59	0	0	0	31	134	60			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PHF Volume:	90	957	52	22	480	64	0	0	0	34	146	65			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	90	957	52	22	480	64	0	0	0	34	146	65			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	90	957	52	22	480	64	0	0	0	34	146	65			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.64	0.64	0.64	0.67	0.67	0.66	1.00	1.00	1.00	0.71	0.71	0.69			
Lanes:	0.16	1.74	0.10	0.08	1.69	0.23	0.00	0.00	0.00	0.14	0.59	0.27			
Final Sat.:	201	2129	116	98	2156	288	0	0	0	184	795	356			
Capacity Analysis Module:															
Vol/Sat:	0.45	0.45	0.45	0.22	0.22	0.22	0.00	0.00	0.00	0.18	0.18	0.18			
Crit Moves:		****								****					
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.00	0.00	0.00	0.37	0.37	0.37			
Volume/Cap:	0.93	0.93	0.93	0.46	0.46	0.46	0.00	0.00	0.00	0.50	0.50	0.50			
Uniform Del:	14.5	14.5	14.5	10.3	10.3	10.3	0.0	0.0	0.0	14.7	14.7	14.7			
IncremntDel:	13.9	13.9	13.9	1.2	1.2	1.2	0.0	0.0	0.0	3.6	3.6	3.6			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00			
Delay/Veh:	28.5	28.5	28.5	11.6	11.6	11.6	0.0	0.0	0.0	18.3	18.3	18.3			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	28.5	28.5	28.5	11.6	11.6	11.6	0.0	0.0	0.0	18.3	18.3	18.3			
LOS by Move:	C	C	C	B	B	B	A	A	A	B	B	B			
HCM2kAvgQ:	11	11	11	4	4	4	0	0	0	4	4	4			

Note: Queue reported is the number of cars per lane.

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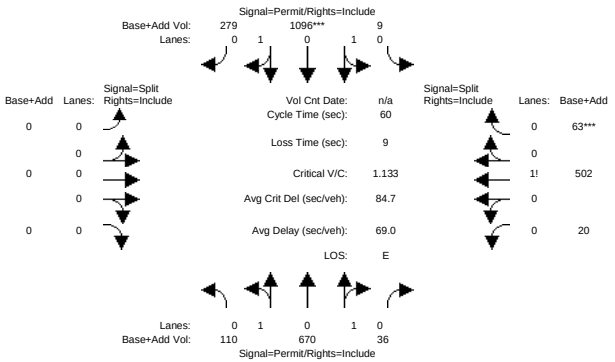
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #68: 15th St / S Van Ness



Street Name:	S Van Ness									15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	0	32	32	32	32	0	22	0	22	19	19	19			
Y+R:	4.0	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.5	4.5	4.0	4.5			
Volume Module:															
Base Vol:	110	670	36	9	1096	279	0	0	0	20	502	63			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	110	670	36	9	1096	279	0	0	0	20	502	63			
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	110	670	36	9	1096	279	0	0	0	20	502	63			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
PHF Volume:	112	684	37	9	1118	285	0	0	0	20	512	64			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	112	684	37	9	1118	285	0	0	0	20	512	64			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	112	684	37	9	1118	285	0	0	0	20	512	64			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.44	0.44	0.44	0.70	0.70	0.68	1.00	1.00	1.00	0.73	0.73	0.72			
Lanes:	0.27	1.64	0.09	0.01	1.58	0.41	0.00	0.00	0.00	0.03	0.86	0.11			
Final Sat.:	225	1370	74	17	2099	534	0	0	0	47	1191	149			
Capacity Analysis Module:															
Vol/Sat:	0.50	0.50	0.50	0.53	0.53	0.53	0.00	0.00	0.00	0.43	0.43	0.43			
Crit Moves:					****							****			
Green/Cycle:	0.53	0.53	0.53	0.53	0.53	0.53	0.00	0.00	0.00	0.32	0.32	0.32			
Volume/Cap:	0.94	0.94	0.94	1.00	1.00	1.00	0.00	0.00	0.00	1.36	1.36	1.36			
Uniform Del:	13.0	13.0	13.0	14.0	14.0	14.0	0.0	0.0	0.0	20.5	20.5	20.5			
IncremntDel:	18.1	18.1	18.1	23.7	23.7	23.7	0.0	0.0	0.0	175.5	176	175.5			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00			
Delay/Veh:	31.2	31.2	31.2	37.7	37.7	37.7	0.0	0.0	0.0	196.0	196	196.0			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	31.2	31.2	31.2	37.7	37.7	37.7	0.0	0.0	0.0	196.0	196	196.0			
LOS by Move:	C	C	C	C	D	D	A	A	A	F	F	F			
HCM2kAvgQ:	9	9	9	15	15	14	0	0	0	30	30	29			

Note: Queue reported is the number of cars per lane.

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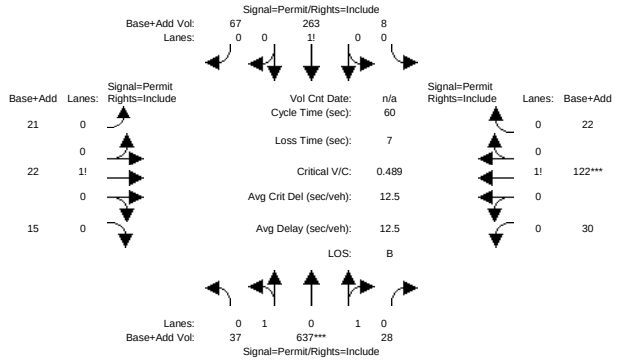
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #69: 15th St / Folsom



Street Name:	Folsom Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	31	31	31	31	31	22	22	22	22	22	22
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	37	637	28	8	263	67	21	22	15	30	122	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	637	28	8	263	67	21	22	15	30	122	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	637	28	8	263	67	21	22	15	30	122	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	40	692	30	9	286	73	23	24	16	33	133	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	692	30	9	286	73	23	24	16	33	133	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	692	30	9	286	73	23	24	16	33	133	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.70	0.69	0.72	0.72	0.70	0.63	0.64	0.63	0.69	0.70	0.69
Lanes:	0.11	1.81	0.08	0.02	0.78	0.20	0.36	0.38	0.26	0.17	0.70	0.13
Final Sat.:	139	2397	105	32	1056	269	438	459	313	228	929	167
Capacity Analysis Module:												
Vol/Sat:	0.29	0.29	0.29	0.27	0.27	0.27	0.05	0.05	0.05	0.14	0.14	0.14
Crit Moves:		****									****	
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.37	0.37	0.37	0.37	0.37	0.37
Volume/Cap:	0.56	0.56	0.56	0.52	0.52	0.52	0.14	0.14	0.14	0.39	0.39	0.39
Uniform Del:	9.9	9.9	9.9	9.6	9.6	9.6	12.7	12.7	12.7	14.0	14.0	14.0
IncremntDel:	1.7	1.7	1.7	2.8	2.8	2.8	0.7	0.7	0.7	2.3	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	11.5	11.5	11.5	12.4	12.4	12.4	13.4	13.4	13.4	16.4	16.4	16.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.5	11.5	11.5	12.4	12.4	12.4	13.4	13.4	13.4	16.4	16.4	16.4
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
HCM2kAvgQ:	5	5	5	5	5	5	1	1	1	3	3	3

Note: Queue reported is the number of cars per lane.

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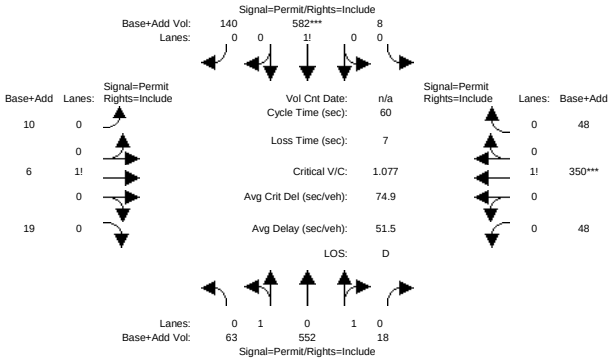
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #69: 15th St / Folsom



Street Name:	Folsom Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	33	33	33	33	33	33	20	20	20	20	20	20
Y+R:	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Volume Module:												
Base Vol:	63	552	18	8	582	140	10	6	19	48	350	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	63	552	18	8	582	140	10	6	19	48	350	48
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	63	552	18	8	582	140	10	6	19	48	350	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	69	607	20	9	640	154	11	7	21	53	385	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	607	20	9	640	154	11	7	21	53	385	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	607	20	9	640	154	11	7	21	53	385	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	0.63	0.63	0.72	0.72	0.71	0.62	0.62	0.57	0.70	0.71	0.70
Lanes:	0.20	1.74	0.06	0.01	0.79	0.20	0.27	0.16	0.57	0.11	0.78	0.11
Final Sat.:	237	2078	68	15	1090	262	320	192	608	145	1056	145
Capacity Analysis Module:												
Vol/Sat:	0.29	0.29	0.29	0.59	0.59	0.59	0.03	0.03	0.03	0.36	0.36	0.36
Crit Moves:					****						****	
Green/Cycle:	0.55	0.55	0.55	0.55	0.55	0.55	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.53	0.53	0.53	1.07	1.07	1.07	0.10	0.10	0.10	1.09	1.09	1.09
Uniform Del:	8.6	8.6	8.6	13.5	13.5	13.5	13.8	13.8	13.8	20.0	20.0	20.0
IncremntDel:	1.5	1.5	1.5	52.2	52.2	52.2	0.6	0.6	0.6	70.1	70.1	70.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.1	10.1	10.1	65.7	65.7	65.7	14.4	14.4	14.4	90.1	90.1	90.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.1	10.1	10.1	65.7	65.7	65.7	14.4	14.4	14.4	90.1	90.1	90.1
LOS by Move:	B	B	B	E	E	E	B	B	B	F	F	F
HCM2kAvgQ:	4	4	4	27	27	27	1	1	0	19	19	19

Note: Queue reported is the number of cars per lane.

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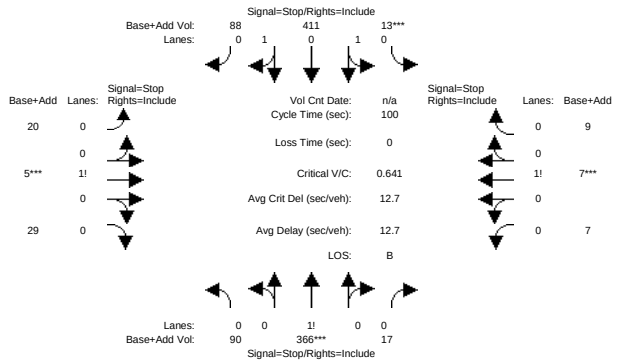
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 AM

Intersection #70: 15th St / Harrison



Street Name:	Harrison Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	90	366	17	13	411	88	20	5	29	7	7	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	366	17	13	411	88	20	5	29	7	7	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	366	17	13	411	88	20	5	29	7	7	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	92	373	17	13	419	90	20	5	30	7	7	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	373	17	13	419	90	20	5	30	7	7	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	373	17	13	419	90	20	5	30	7	7	9
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.77	0.04	0.05	1.61	0.34	0.37	0.09	0.54	0.30	0.30	0.40
Final Sat.:	143	583	27	35	1140	252	210	52	304	166	166	213
Capacity Analysis Module:												
Vol/Sat:	0.64	0.64	0.64	0.38	0.37	0.36	0.10	0.10	0.10	0.04	0.04	0.04
Crit Moves:		****			****			****			****	
Delay/Veh:	15.6	15.6	15.6	10.8	10.5	10.2	9.2	9.2	9.2	9.1	9.1	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.6	15.6	15.6	10.8	10.5	10.2	9.2	9.2	9.2	9.1	9.1	9.1
LOS by Move:	C	C	C	B	B	B	A	A	A	A	A	A
ApproachDel:		15.6			10.5			9.2			9.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.6			10.5			9.2			9.1	
LOS by Appr:		C			B			A			A	
AllWayAvgQ:	1.6	1.6	1.6	0.6	0.5	0.5	0.1	0.1	0.1	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

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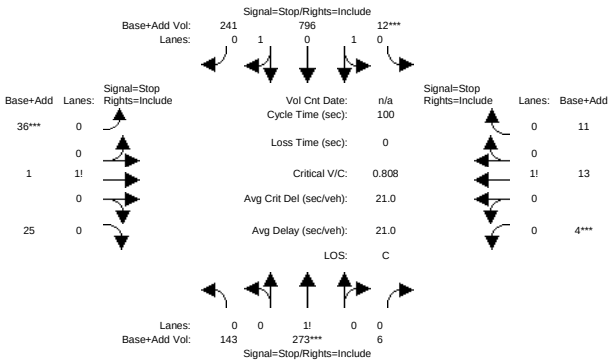
Level Of Service Computation Report
2000 HCM 4-Way Stop (Future Volume Alternative)
2040 PM

Intersection #70: 15th St / Harrison



Street Name:	Harrison Street						15th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	143	273	6	12	796	241	36	1	25	4	13	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	143	273	6	12	796	241	36	1	25	4	13	11
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	143	273	6	12	796	241	36	1	25	4	13	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	152	290	6	13	847	256	38	1	27	4	14	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	290	6	13	847	256	38	1	27	4	14	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	152	290	6	13	847	256	38	1	27	4	14	12
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.34	0.65	0.01	0.02	1.52	0.46	0.58	0.02	0.40	0.14	0.47	0.39
Final Sat.:	234	446	10	16	1073	339	309	9	215	74	242	205
Capacity Analysis Module:												
Vol/Sat:	0.65	0.65	0.65	0.81	0.79	0.76	0.12	0.12	0.12	0.06	0.06	0.06
Crit Moves:		****			****			****			****	
Delay/Veh:	17.1	17.1	17.1	25.9	24.2	21.0	10.2	10.2	10.2	9.8	9.8	9.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	17.1	17.1	25.9	24.2	21.0	10.2	10.2	10.2	9.8	9.8	9.8
LOS by Move:	C	C	C	D	C	C	B	B	B	A	A	A
ApproachDel:		17.1			23.4			10.2			9.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		17.1			23.4			10.2			9.8	
LOS by Appr:		C			C			B			A	
AllWayAvgQ:	1.7	1.7	1.7	3.5	2.7	2.7	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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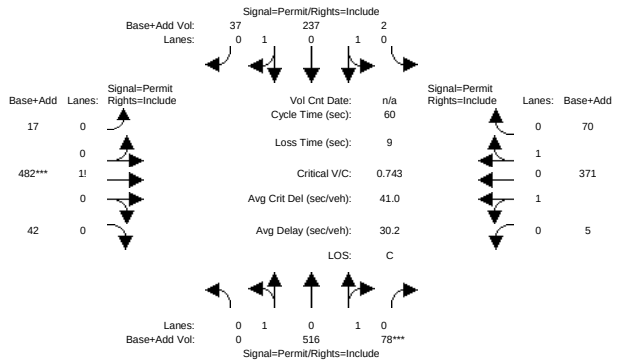
Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	28	0	28	28	0	28	0	24	0	0	24	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module:												
Base Vol:	0	516	78	2	237	37	17	482	42	5	371	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	516	78	2	237	37	17	482	42	5	371	70
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	516	78	2	237	37	17	482	42	5	371	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	532	80	2	244	38	18	497	43	5	382	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	532	80	2	244	38	18	497	43	5	382	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	532	80	2	244	38	18	497	43	5	382	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.74	0.72	0.70	0.70	0.68	0.71	0.71	0.69	0.70	0.70	0.69
Lanes:	0.00	1.73	0.27	0.01	1.71	0.28	0.03	0.89	0.08	0.02	1.66	0.32
Final Sat.:	0	2426	367	19	2281	356	42	1200	105	30	2199	415
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.11	0.11	0.11	0.41	0.41	0.41	0.17	0.17	0.17
Crit Moves:			****					****				
Green/Cycle:	0.00	0.46	0.46	0.46	0.46	0.46	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.00	0.48	0.48	0.23	0.23	0.23	1.05	1.05	1.05	0.44	0.44	0.44
Uniform Del:	0.0	11.4	11.4	10.0	10.0	10.0	18.5	18.5	18.5	13.6	13.6	13.6
IncremntDel:	0.0	1.3	1.3	0.4	0.4	0.4	53.6	53.6	53.6	1.4	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	12.7	12.7	10.4	10.4	10.4	72.1	72.1	72.1	14.9	14.9	14.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.7	12.7	10.4	10.4	10.4	72.1	72.1	72.1	14.9	14.9	14.9
LOS by Move:	A	B	B	B	B	B	E	E	E	B	B	B
HCM2kAvgQ:	0	5	5	2	2	2	20	20	19	3	3	3

Note: Queue reported is the number of cars per lane.

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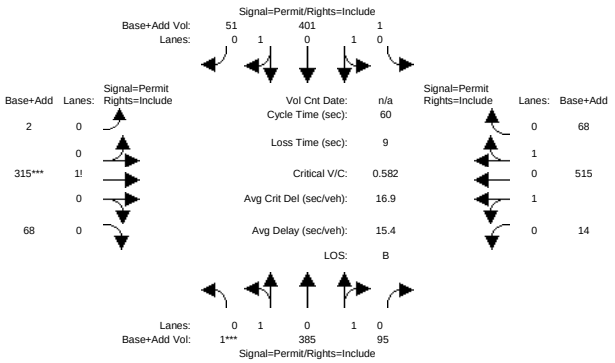
Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	25	0	25	25	0	25	0	25	0	0	25	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module:												
Base Vol:	1	385	95	1	401	51	2	315	68	14	515	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	385	95	1	401	51	2	315	68	14	515	68
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	385	95	1	401	51	2	315	68	14	515	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	405	100	1	422	54	2	332	72	15	542	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	405	100	1	422	54	2	332	72	15	542	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	405	100	1	422	54	2	332	72	15	542	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.65	0.71	0.71	0.70	0.71	0.71	0.69	0.70	0.70	0.69
Lanes:	0.01	1.58	0.41	0.01	1.77	0.22	0.01	0.81	0.18	0.05	1.72	0.23
Final Sat.:	5	2092	516	6	2371	302	7	1101	238	62	2281	301
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.18	0.18	0.18	0.30	0.30	0.30	0.24	0.24	0.24
Crit Moves:	****							****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.46	0.46	0.46	0.43	0.43	0.43	0.70	0.70	0.70	0.55	0.55	0.55
Uniform Del:	12.7	12.7	12.7	12.4	12.4	12.4	13.8	13.8	13.8	12.6	12.6	12.6
IncremntDel:	1.4	1.4	1.4	1.2	1.2	1.2	6.7	6.7	6.7	1.9	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	14.1	14.1	14.1	13.6	13.6	13.6	20.5	20.5	20.5	14.5	14.5	14.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.1	14.1	14.1	13.6	13.6	13.6	20.5	20.5	20.5	14.5	14.5	14.5
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	4	4	4	4	4	4	8	8	7	5	5	5

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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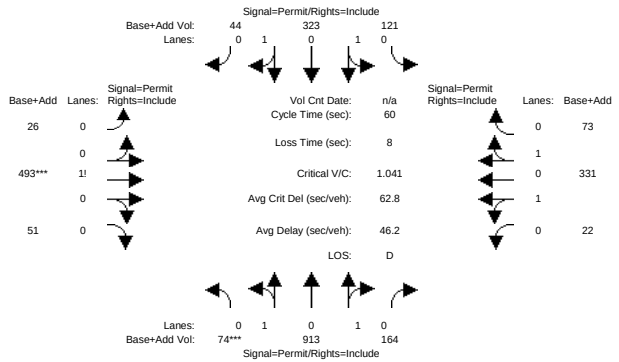
Intersection #72: 16th St / S Van Ness



Street Name:	S Van Ness						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	0	31	31	0	31	21	21	0	0	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	74	913	164	121	323	44	26	493	51	22	331	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	913	164	121	323	44	26	493	51	22	331	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	74	913	164	121	323	44	26	493	51	22	331	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	76	932	167	123	330	45	27	503	52	22	338	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	932	167	123	330	45	27	503	52	22	338	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	932	167	123	330	45	27	503	52	22	338	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	0.66	0.63	0.43	0.43	0.43	0.71	0.71	0.70	0.68	0.68	0.67
Lanes:	0.13	1.58	0.29	0.50	1.32	0.18	0.05	0.86	0.09	0.10	1.55	0.35
Final Sat.:	160	1974	355	407	1086	148	62	1170	121	133	1994	440
Capacity Analysis Module:												
Vol/Sat:	0.47	0.47	0.47	0.30	0.30	0.30	0.43	0.43	0.43	0.17	0.17	0.17
Crit Moves:	****							****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.35
Volume/Cap:	0.91	0.91	0.91	0.59	0.59	0.59	1.23	1.23	1.23	0.48	0.48	0.48
Uniform Del:	13.3	13.3	13.3	10.1	10.1	10.1	19.5	19.5	19.5	15.3	15.3	15.3
IncremntDel:	11.4	11.4	11.4	3.0	3.0	3.0	120.1	120	120.1	1.9	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	24.7	24.7	24.7	13.0	13.0	13.0	139.6	140	139.6	17.1	17.1	17.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.7	24.7	24.7	13.0	13.0	13.0	139.6	140	139.6	17.1	17.1	17.1
LOS by Move:	C	C	C	B	B	B	F	F	F	B	B	B
HCM2kAvgQ:	15	15	15	4	4	4	23	23	23	3	3	3

Note: Queue reported is the number of cars per lane.

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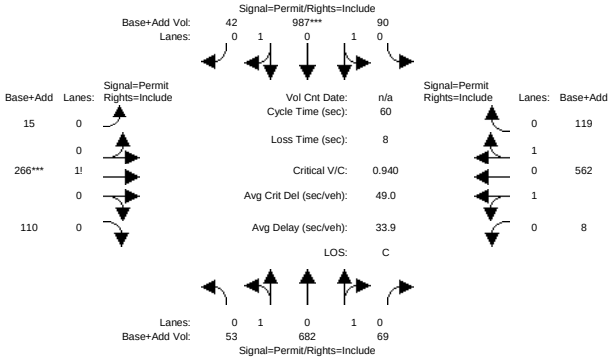
Intersection #72: 16th St / S Van Ness



Street Name:	S Van Ness						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	0	29	29	0	29	23	23	0	0	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	53	682	69	90	987	42	15	266	110	8	562	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	682	69	90	987	42	15	266	110	8	562	119
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	682	69	90	987	42	15	266	110	8	562	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	55	703	71	93	1018	43	15	274	113	8	579	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	703	71	93	1018	43	15	274	113	8	579	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	703	71	93	1018	43	15	274	113	8	579	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.59	0.57	0.60	0.60	0.59	0.69	0.69	0.67	0.70	0.70	0.69
Lanes:	0.13	1.69	0.18	0.16	1.76	0.08	0.04	0.67	0.29	0.02	1.63	0.35
Final Sat.:	147	1895	192	183	2010	86	50	889	367	31	2173	460
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.51	0.51	0.51	0.31	0.31	0.31	0.27	0.27	0.27
Crit Moves:					****			****				
Green/Cycle:	0.48	0.48	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38	0.38	0.38
Volume/Cap:	0.77	0.77	0.77	1.05	1.05	1.05	0.81	0.81	0.81	0.70	0.70	0.70
Uniform Del:	12.7	12.7	12.7	15.5	15.5	15.5	16.5	16.5	16.5	15.6	15.6	15.6
IncremntDel:	5.2	5.2	5.2	40.4	40.4	40.4	12.9	12.9	12.9	3.9	3.9	3.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	18.0	18.0	18.0	55.9	55.9	55.9	29.4	29.4	29.4	19.5	19.5	19.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.0	18.0	18.0	55.9	55.9	55.9	29.4	29.4	29.4	19.5	19.5	19.5
LOS by Move:	B	B	B	E	E	E	C	C	C	B	B	B
HCM2kAvgQ:	9	9	9	14	14	14	7	7	7	6	6	6

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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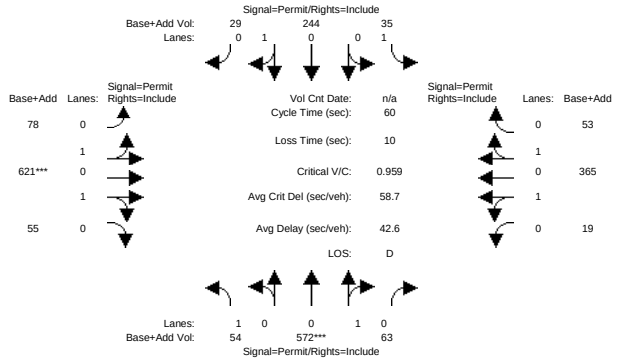
Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	54	572	63	35	244	29	78	621	55	19	365	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	572	63	35	244	29	78	621	55	19	365	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	572	63	35	244	29	78	621	55	19	365	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	56	590	65	36	252	30	80	640	57	20	376	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	590	65	36	252	30	80	640	57	20	376	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	590	65	36	252	30	80	640	57	20	376	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.43	0.72	0.71	0.13	0.72	0.71	0.64	0.64	0.64	0.67	0.67	0.66
Lanes:	1.00	0.90	0.10	1.00	0.89	0.11	0.21	1.64	0.15	0.09	1.67	0.24
Final Sat.:	820	1231	136	254	1220	145	251	2001	177	111	2125	309
Capacity Analysis Module:												
Vol/Sat:	0.07	0.48	0.48	0.14	0.21	0.21	0.32	0.32	0.32	0.18	0.18	0.18
Crit Moves:		****						****				
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.16	1.15	1.15	0.30	0.49	0.49	0.77	0.77	0.77	0.43	0.43	0.43
Uniform Del:	11.0	17.5	17.5	11.7	12.9	12.9	15.0	15.0	15.0	12.4	12.4	12.4
IncremntDel:	1.0	86.5	86.5	6.3	3.1	3.1	5.6	5.6	5.6	1.2	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	12.0	104	104.0	18.0	15.9	15.9	20.6	20.6	20.6	13.7	13.7	13.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.0	104	104.0	18.0	15.9	15.9	20.6	20.6	20.6	13.7	13.7	13.7
LOS by Move:	B	F	F	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	1	27	26	0	4	4	6	6	6	3	3	3

Note: Queue reported is the number of cars per lane.

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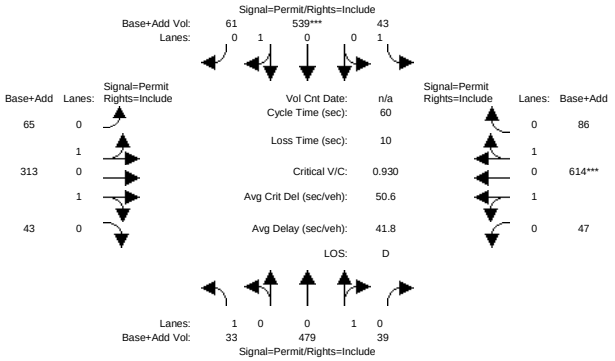
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	33	479	39	43	539	61	65	313	43	47	614	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	479	39	43	539	61	65	313	43	47	614	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	479	39	43	539	61	65	313	43	47	614	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	35	504	41	45	567	64	68	329	45	49	646	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	504	41	45	567	64	68	329	45	49	646	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	504	41	45	567	64	68	329	45	49	646	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.15	0.72	0.71	0.22	0.72	0.70	0.56	0.56	0.55	0.66	0.66	0.65
Lanes:	1.00	0.92	0.08	1.00	0.90	0.10	0.31	1.48	0.21	0.13	1.64	0.23
Final Sat.:	285	1270	103	414	1227	139	329	1584	218	158	2069	290
Capacity Analysis Module:												
Vol/Sat:	0.12	0.40	0.40	0.11	0.46	0.46	0.21	0.21	0.21	0.31	0.31	0.31
Crit Moves:					****						****	
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.29	0.95	0.95	0.26	1.11	1.11	0.50	0.50	0.50	0.75	0.75	0.75
Uniform Del:	11.6	16.9	16.9	11.5	17.5	17.5	12.9	12.9	12.9	14.8	14.8	14.8
IncremntDel:	6.0	27.7	27.7	3.7	71.5	71.5	2.0	2.0	2.0	4.9	4.9	4.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.6	44.6	44.6	15.1	89.0	89.0	14.9	14.9	14.9	19.8	19.8	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.6	44.6	44.6	15.1	89.0	89.0	14.9	14.9	14.9	19.8	19.8	19.8
LOS by Move:	B	D	D	B	F	F	B	B	B	B	B	B
HCM2kAvgQ:	1	16	15	1	19	18	3	3	3	7	7	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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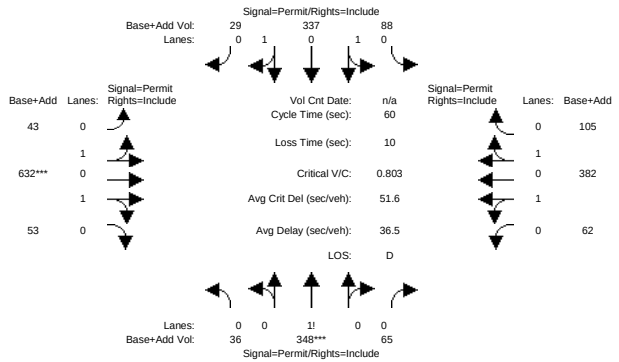
Intersection #74: 16th St / Harrison



Street Name:	Harrison Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	19	19	19	19	0	19	31	31	0	0	31	31
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	36	348	65	88	337	29	43	632	53	62	382	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	348	65	88	337	29	43	632	53	62	382	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	348	65	88	337	29	43	632	53	62	382	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	38	366	68	93	355	31	45	665	56	65	402	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	366	68	93	355	31	45	665	56	65	402	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	366	68	93	355	31	45	665	56	65	402	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.66	0.50	0.51	0.50	0.67	0.67	0.67	0.59	0.59	0.58
Lanes:	0.08	0.77	0.15	0.39	1.48	0.13	0.12	1.73	0.15	0.22	1.39	0.39
Final Sat.:	103	999	187	373	1428	123	150	2198	184	252	1552	427
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.25	0.25	0.25	0.30	0.30	0.30	0.26	0.26	0.26
Crit Moves:		****						****				
Green/Cycle:	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	1.16	1.16	1.16	0.78	0.78	0.78	0.59	0.59	0.59	0.50	0.50	0.50
Uniform Del:	20.5	20.5	20.5	18.6	18.6	18.6	10.1	10.1	10.1	9.5	9.5	9.5
IncremntDel:	95.3	95.3	95.3	9.8	9.8	9.8	1.9	1.9	1.9	1.6	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	115.8	116	115.8	28.4	28.4	28.4	12.0	12.0	12.0	11.0	11.0	11.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	115.8	116	115.8	28.4	28.4	28.4	12.0	12.0	12.0	11.0	11.0	11.0
LOS by Move:	F	F	F	C	C	C	B	B	B	B	B	B
HCM2kAvgQ:	21	21	20	6	7	7	5	5	5	4	4	4

Note: Queue reported is the number of cars per lane.

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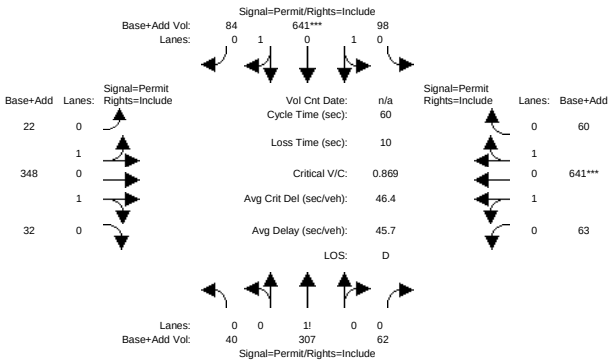
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #74: 16th St / Harrison



Street Name:	Harrison Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	40	307	62	98	641	84	22	348	32	63	641	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	307	62	98	641	84	22	348	32	63	641	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	307	62	98	641	84	22	348	32	63	641	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	43	327	66	104	682	89	23	370	34	67	682	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	327	66	104	682	89	23	370	34	67	682	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	327	66	104	682	89	23	370	34	67	682	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.60	0.58	0.57	0.59	0.56	0.66	0.66	0.67	0.65	0.65	0.65
Lanes:	0.10	0.75	0.15	0.24	1.55	0.21	0.11	1.73	0.16	0.16	1.68	0.16
Final Sat.:	110	848	171	263	1723	226	138	2183	201	204	2078	195
Capacity Analysis Module:												
Vol/Sat:	0.39	0.39	0.39	0.40	0.40	0.40	0.17	0.17	0.17	0.33	0.33	0.33
Crit Moves:					****						****	
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	1.05	1.05	1.05	1.08	1.08	1.08	0.36	0.36	0.36	0.70	0.70	0.70
Uniform Del:	19.0	19.0	19.0	19.0	19.0	19.0	10.3	10.3	10.3	12.7	12.7	12.7
IncremntDel:	58.1	58.1	58.1	55.3	55.3	55.3	0.9	0.9	0.9	3.6	3.6	3.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	77.1	77.1	77.1	74.3	74.3	74.3	11.1	11.1	11.1	16.3	16.3	16.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.1	77.1	77.1	74.3	74.3	74.3	11.1	11.1	11.1	16.3	16.3	16.3
LOS by Move:	E	E	E	E	E	E	B	B	B	B	B	B
HCM2kAvgQ:	16	16	16	18	18	17	3	3	3	6	6	6

Note: Queue reported is the number of cars per lane.

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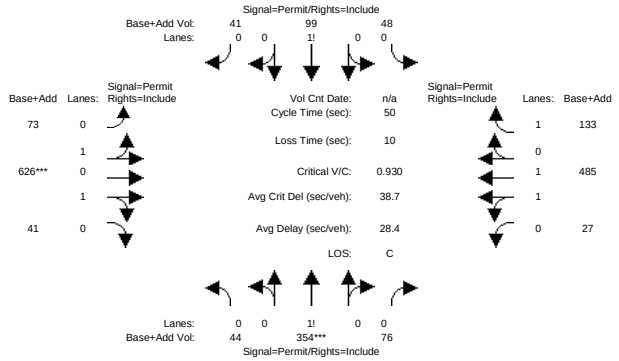
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #75: 16th St / Bryant



Street Name:	Bryant Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	20	20	20	20	20	20	20	20	20	20	20	20
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	44	354	76	48	99	41	73	626	41	27	485	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	354	76	48	99	41	73	626	41	27	485	133
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	354	76	48	99	41	73	626	41	27	485	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	45	365	78	49	102	42	75	645	42	28	500	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	365	78	49	102	42	75	645	42	28	500	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	365	78	49	102	42	75	645	42	28	500	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.63	0.61	0.54	0.55	0.54	0.60	0.61	0.60	0.72	0.72	0.44
Lanes:	0.09	0.75	0.16	0.26	0.52	0.22	0.20	1.69	0.11	0.11	1.89	1.00
Final Sat.:	110	884	190	263	543	225	227	1950	128	145	2604	844
Capacity Analysis Module:												
Vol/Sat:	0.41	0.41	0.41	0.19	0.19	0.19	0.33	0.33	0.33	0.19	0.19	0.16
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Volume/Cap:	1.03	1.03	1.03	0.47	0.47	0.47	0.83	0.83	0.83	0.48	0.48	0.41
Uniform Del:	15.0	15.0	15.0	11.1	11.1	11.1	13.5	13.5	13.5	11.1	11.1	10.7
IncremntDel:	49.8	49.8	49.8	3.8	3.8	3.8	8.4	8.4	8.4	1.5	1.5	3.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.8	64.8	64.8	14.9	14.9	14.9	21.9	21.9	21.9	12.6	12.6	14.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.8	64.8	64.8	14.9	14.9	14.9	21.9	21.9	21.9	12.6	12.6	14.3
LOS by Move:	E	E	E	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	16	16	15	2	2	2	6	7	6	4	4	2

Note: Queue reported is the number of cars per lane.

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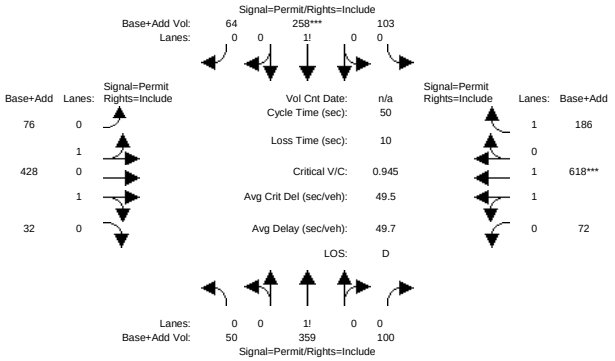
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #75: 16th St / Bryant



Street Name:	Bryant Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	21	21	21	21	21	21	19	19	19	19	19	19
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	50	359	100	103	258	64	76	428	32	72	618	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	359	100	103	258	64	76	428	32	72	618	186
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	359	100	103	258	64	76	428	32	72	618	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	53	378	105	108	272	67	80	451	34	76	651	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	378	105	108	272	67	80	451	34	76	651	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	378	105	108	272	67	80	451	34	76	651	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	0.60	0.59	0.49	0.50	0.49	0.53	0.54	0.53	0.68	0.68	0.42
Lanes:	0.10	0.70	0.20	0.24	0.61	0.15	0.29	1.59	0.12	0.21	1.79	1.00
Final Sat.:	112	804	224	228	572	142	290	1634	122	269	2310	800
Capacity Analysis Module:												
Vol/Sat:	0.47	0.47	0.47	0.47	0.47	0.47	0.28	0.28	0.28	0.28	0.28	0.24
Crit Moves:					****						****	
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Volume/Cap:	1.12	1.12	1.12	1.13	1.13	1.13	0.73	0.73	0.73	0.74	0.74	0.64
Uniform Del:	14.5	14.5	14.5	14.5	14.5	14.5	13.3	13.3	13.3	13.4	13.4	12.7
IncremntDel:	77.8	77.8	77.8	85.5	85.5	85.5	5.9	5.9	5.9	5.0	5.0	10.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	92.3	92.3	92.3	100.0	xxxx	100.0	19.1	19.1	19.1	18.4	18.4	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.3	92.3	92.3	100.0	xxxx	100.0	19.1	19.1	19.1	18.4	18.4	22.8
LOS by Move:	F	F	F	F	F	F	B	B	B	B	B	C
HCM2kAvgQ:	20	20	20	15	15	15	4	4	4	7	7	4

Note: Queue reported is the number of cars per lane.

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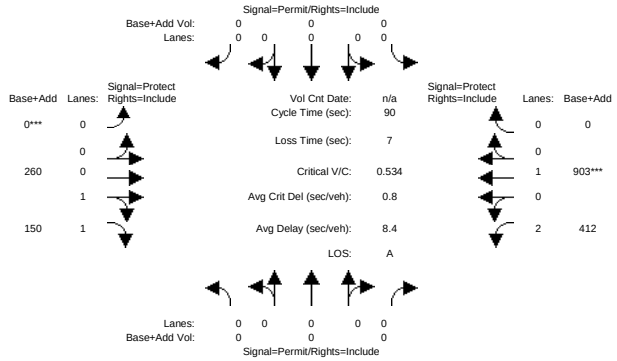
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	31	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	260	150	412	903	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	260	150	412	903	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	260	150	412	903	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	0	0	0	271	156	429	941	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	271	156	429	941	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	271	156	429	941	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.94	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	1796	1786	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.09	0.12	0.50	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.26	0.21	0.53	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	23.1	9.0	0.5	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.0	0.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.0	0.8	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	6	3	3	5	0

Note: Queue reported is the number of cars per lane.

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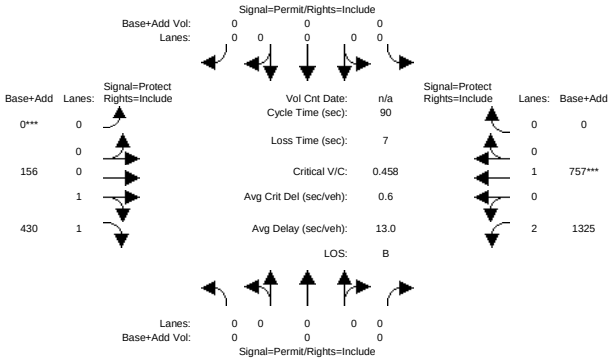
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	156	430	1325	757	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	156	430	1325	757	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	156	430	1325	757	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	166	457	1410	805	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	166	457	1410	805	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	166	457	1410	805	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.47	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	900	2482	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18	0.40	0.42	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.55	0.68	0.46	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.8	25.8	13.2	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.9	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.1	0.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.1	0.6	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	8	8	14	3	0

Note: Queue reported is the number of cars per lane.

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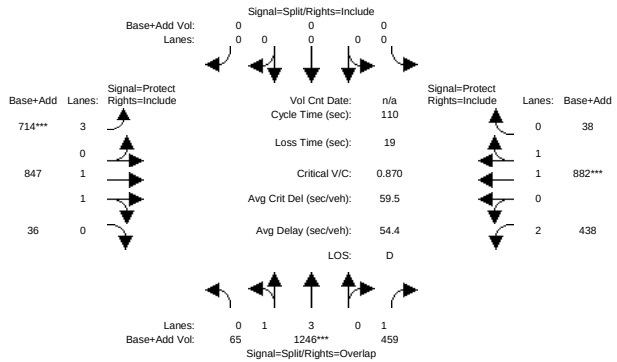
Year 2040 Plus LRDP (Mission Bay Variant; 4-Lane 16th Street; Mission Bay Only)

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	25	25	25	0	0	0	18	34	34	31	47	47
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	65	1246	459	0	0	0	714	847	36	438	882	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1246	459	0	0	0	714	847	36	438	882	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1246	459	0	0	0	714	847	36	438	882	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	1312	483	0	0	0	752	892	38	461	928	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1312	483	0	0	0	752	892	38	461	928	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1312	483	0	0	0	752	892	38	461	928	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.72	1.00	1.00	1.00	0.79	0.81	0.81	0.79	0.81	0.81
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	291	5573	1377	0	0	0	4480	2936	125	2987	2934	126
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.35	0.00	0.00	0.00	0.17	0.30	0.30	0.15	0.32	0.32
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.52	0.00	0.00	0.00	0.17	0.31	0.31	0.28	0.43	0.43
Volume/Cap:	1.01	1.01	0.68	0.00	0.00	0.00	1.01	0.98	0.98	0.55	0.74	0.74
Uniform Del:	42.2	42.2	19.8	0.0	0.0	0.0	45.8	37.5	37.5	33.4	26.4	26.4
IncremntDel:	26.2	26.2	5.2	0.0	0.0	0.0	34.9	24.3	24.3	2.5	3.8	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.4	68.4	24.9	0.0	0.0	0.0	80.7	61.9	61.9	35.9	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.4	68.4	24.9	0.0	0.0	0.0	80.7	61.9	61.9	35.9	30.2	30.2
LOS by Move:	E	E	C	A	A	A	F	E	E	D	C	C
HCM2kAvgQ:	13	13	11	0	0	0	9	16	16	7	16	16

Note: Queue reported is the number of cars per lane.

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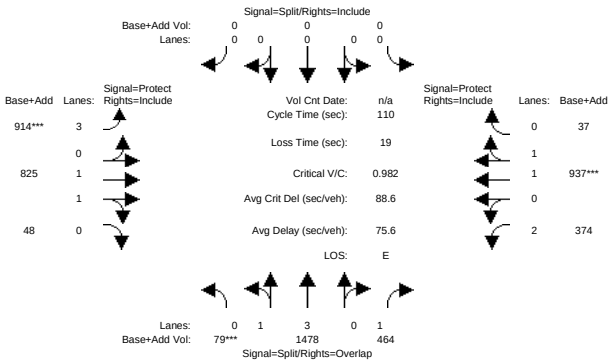
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	79	1478	464	0	0	0	914	825	48	374	937	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1478	464	0	0	0	914	825	48	374	937	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	1478	464	0	0	0	914	825	48	374	937	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	81	1524	478	0	0	0	942	851	49	386	966	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	1524	478	0	0	0	942	851	49	386	966	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	1524	478	0	0	0	942	851	49	386	966	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.72	1.00	1.00	1.00	0.79	0.80	0.80	0.79	0.81	0.81
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.89	0.11	2.00	1.92	0.08
Final Sat.:	297	5566	1377	0	0	0	4480	2886	168	2987	2944	116
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.35	0.00	0.00	0.00	0.21	0.29	0.29	0.13	0.33	0.33
Crit Moves:	****						****				****	
Green/Cycle:	0.35	0.35	0.49	0.00	0.00	0.00	0.16	0.34	0.34	0.13	0.31	0.31
Volume/Cap:	0.77	0.77	0.72	0.00	0.00	0.00	1.29	0.86	0.86	0.98	1.06	1.06
Uniform Del:	31.6	31.6	22.3	0.0	0.0	0.0	46.0	33.8	33.8	47.7	38.0	38.0
IncremntDel:	2.9	2.9	6.4	0.0	0.0	0.0	138.7	9.4	9.4	41.8	47.0	47.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.4	34.4	28.7	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.0	85.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	34.4	28.7	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.0	85.0
LOS by Move:	C	C	C	A	A	A	F	D	D	F	F	F
HCM2kAvgQ:	12	12	12	0	0	0	19	14	14	11	26	26

Note: Queue reported is the number of cars per lane.

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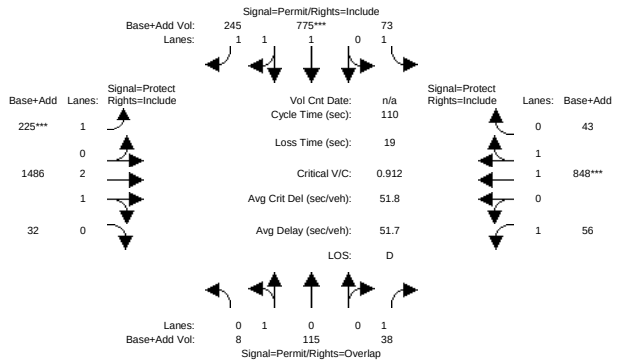
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	35	35	35	35	35	35	19	41	41	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	115	38	73	775	245	225	1486	32	56	848	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	115	38	73	775	245	225	1486	32	56	848	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	115	38	73	775	245	225	1486	32	56	848	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	9	124	41	78	833	263	242	1598	34	60	912	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	124	41	78	833	263	242	1598	34	60	912	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	124	41	78	833	263	242	1598	34	60	912	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.72	0.57	0.78	0.78	0.81	0.77	0.77	0.81	0.80	0.80
Lanes:	0.07	0.93	1.00	1.00	2.00	1.00	1.00	2.94	0.06	1.00	1.90	0.10
Final Sat.:	99	1421	1377	1074	2968	1484	1539	4275	92	1539	2882	146
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.03	0.07	0.28	0.18	0.16	0.37	0.37	0.04	0.32	0.32
Crit Moves:					****		****				****	
Green/Cycle:	0.32	0.32	0.45	0.32	0.32	0.32	0.17	0.37	0.37	0.14	0.34	0.34
Volume/Cap:	0.27	0.27	0.07	0.23	0.88	0.56	0.91	1.00	1.00	0.29	0.94	0.94
Uniform Del:	28.0	28.0	16.9	27.6	35.5	31.1	44.7	34.5	34.5	42.7	35.4	35.4
IncremntDel:	1.4	1.4	0.2	1.6	9.2	1.1	36.1	22.9	22.9	3.4	17.1	17.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	29.4	29.4	17.1	29.1	44.8	32.2	80.8	57.4	57.4	46.1	52.5	52.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	29.4	17.1	29.1	44.8	32.2	80.8	57.4	57.4	46.1	52.5	52.5
LOS by Move:	C	C	B	C	D	C	F	E	E	D	D	D
HCM2kAvgQ:	3	3	1	2	17	8	11	27	27	2	19	19

Note: Queue reported is the number of cars per lane.

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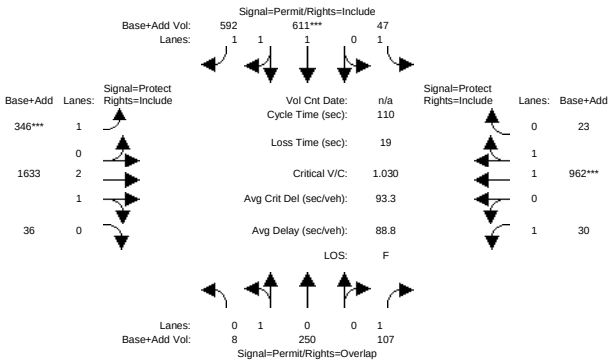
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	250	107	47	611	592	346	1633	36	30	962	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	250	107	47	611	592	346	1633	36	30	962	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	250	107	47	611	592	346	1633	36	30	962	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	8	258	110	48	630	610	357	1684	37	31	992	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	258	110	48	630	610	357	1684	37	31	992	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	258	110	48	630	610	357	1684	37	31	992	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.84	0.72	0.41	0.75	0.75	0.81	0.80	0.77	0.81	0.81	0.81
Lanes:	0.03	0.97	1.00	1.00	1.52	1.48	1.00	2.93	0.07	1.00	1.95	0.05
Final Sat.:	49	1539	1377	779	2172	2105	1539	4484	99	1539	2998	72
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.08	0.06	0.29	0.29	0.23	0.38	0.38	0.02	0.33	0.33
Crit Moves:					****		****				****	
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.47	0.47	0.16	0.18	0.82	0.82	1.70	1.12	1.12	0.15	0.98	0.98
Uniform Del:	27.5	27.5	15.5	24.4	32.3	32.3	47.5	36.5	36.5	41.9	36.2	36.2
IncremntDel:	2.8	2.8	0.5	1.4	5.0	5.0	334.2	61.8	61.8	1.5	24.3	24.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.4	30.4	16.0	25.8	37.3	37.3	381.7	98.3	98.3	43.3	60.5	60.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	30.4	16.0	25.8	37.3	37.3	381.7	98.3	98.3	43.3	60.5	60.5
LOS by Move:	C	C	B	C	D	D	F	F	F	D	E	E
HCM2kAvgQ:	7	7	2	1	16	16	31	33	32	1	18	18

Note: Queue reported is the number of cars per lane.

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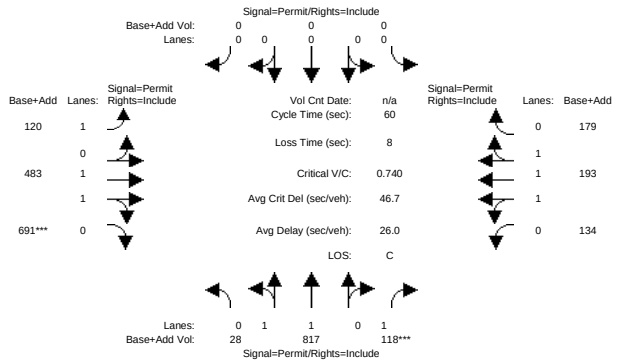
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	21	0	21	0	0	31	31	31	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	817	118	0	0	0	120	483	691	134	193	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	817	118	0	0	0	120	483	691	134	193	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	817	118	0	0	0	120	483	691	134	193	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	888	128	0	0	0	130	525	751	146	210	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	888	128	0	0	0	130	525	751	146	210	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	888	128	0	0	0	130	525	751	146	210	195
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.38	0.74	0.74	0.47	0.47	0.47
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.82	1.18	1.00
Final Sat.:	102	2965	1205	0	0	0	718	1404	1404	738	1063	901
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.11	0.00	0.00	0.00	0.18	0.37	0.53	0.20	0.20	0.22
Crit Moves:			****						****			
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.86	0.86	0.30	0.00	0.00	0.00	0.35	0.72	1.04	0.38	0.38	0.42
Uniform Del:	18.1	18.1	14.2	0.0	0.0	0.0	8.6	11.2	14.5	8.7	8.7	8.9
IncremntDel:	8.8	8.8	1.9	0.0	0.0	0.0	2.6	2.6	35.2	0.8	0.8	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.9	26.9	16.0	0.0	0.0	0.0	11.2	13.8	49.7	9.5	9.5	9.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.9	26.9	16.0	0.0	0.0	0.0	11.2	13.8	49.7	9.5	9.5	9.9
LOS by Move:	C	C	B	A	A	A	B	B	D	A	A	A
HCM2kAvgQ:	12	12	2	0	0	0	2	10	25	3	3	3

Note: Queue reported is the number of cars per lane.

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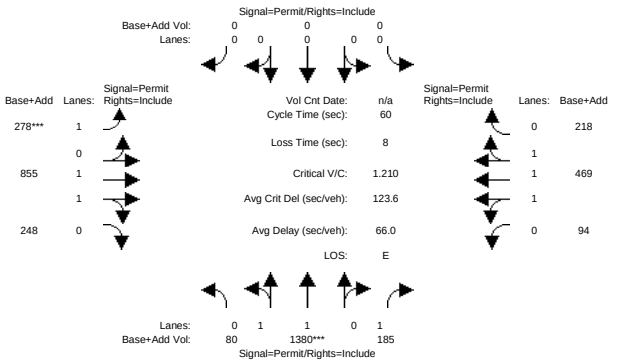
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	80	1380	185	0	0	0	278	855	248	94	469	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	1380	185	0	0	0	278	855	248	94	469	218
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	1380	185	0	0	0	278	855	248	94	469	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	1423	191	0	0	0	287	881	256	97	484	225
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	1423	191	0	0	0	287	881	256	97	484	225
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	1423	191	0	0	0	287	881	256	97	484	225
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.63	1.00	1.00	1.00	0.27	0.78	0.78	0.50	0.50	0.50
Lanes:	0.11	1.89	1.00	0.00	0.00	0.00	1.00	1.55	0.45	0.36	1.80	0.84
Final Sat.:	168	2890	1205	0	0	0	515	2306	669	343	1712	796
Capacity Analysis Module:												
Vol/Sat:	0.49	0.49	0.16	0.00	0.00	0.00	0.56	0.38	0.38	0.28	0.28	0.28
Crit Moves:		****					****					
Green/Cycle:	0.41	0.41	0.41	0.00	0.00	0.00	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	1.21	1.21	0.39	0.00	0.00	0.00	1.21	0.83	0.83	0.61	0.61	0.61
Uniform Del:	17.8	17.8	12.5	0.0	0.0	0.0	16.2	14.2	14.2	12.2	12.2	12.2
IncremntDel:	102.1	102	2.3	0.0	0.0	0.0	127.0	6.0	6.0	2.2	2.2	2.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	119.9	120	14.9	0.0	0.0	0.0	143.2	20.2	20.2	14.4	14.4	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	119.9	120	14.9	0.0	0.0	0.0	143.2	20.2	20.2	14.4	14.4	14.4
LOS by Move:	F	F	B	A	A	A	F	C	C	B	B	B
HCM2kAvgQ:	35	35	3	0	0	0	15	13	13	5	5	5

Note: Queue reported is the number of cars per lane.

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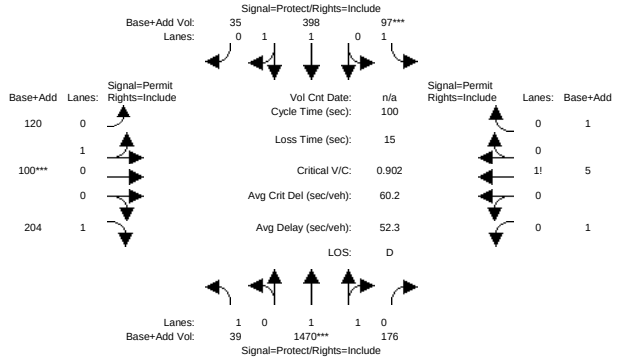
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	50	50	10	38	38	25	25	25	25	25	25
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	39	1470	176	97	398	35	120	100	204	1	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	1470	176	97	398	35	120	100	204	1	5	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	1470	176	97	398	35	120	100	204	1	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	41	1547	185	102	419	37	126	105	215	1	5	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	1547	185	102	419	37	126	105	215	1	5	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	1547	185	102	419	37	126	105	215	1	5	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.88	0.80	0.81	0.80	0.80	0.70	0.70	0.72	0.81	0.81	0.81
Lanes:	1.00	1.77	0.23	1.00	1.84	0.16	0.55	0.45	1.00	0.14	0.72	0.14
Final Sat.:	1539	2945	353	1539	2796	246	721	601	1377	221	1104	221
Capacity Analysis Module:												
Vol/Sat:	0.03	0.53	0.53	0.07	0.15	0.15	0.18	0.18	0.16	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.22	0.50	0.50	0.10	0.38	0.38	0.25	0.25	0.25	0.25	0.25	0.25
Volume/Cap:	0.12	1.05	1.05	0.66	0.39	0.39	0.70	0.70	0.62	0.02	0.02	0.02
Uniform Del:	31.3	25.0	25.0	43.4	22.6	22.6	34.1	34.1	33.3	28.3	28.3	28.3
IncremntDel:	0.7	36.9	36.9	20.3	1.0	1.0	11.7	11.7	8.3	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.0	61.9	61.9	63.7	23.6	23.6	45.8	45.8	41.6	28.4	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.0	61.9	61.9	63.7	23.6	23.6	45.8	45.8	41.6	28.4	28.4	28.4
LOS by Move:	C	E	E	E	C	C	D	D	D	C	C	C
HCM2kAvgQ:	1	33	30	3	5	5	7	7	6	0	0	0

Note: Queue reported is the number of cars per lane.

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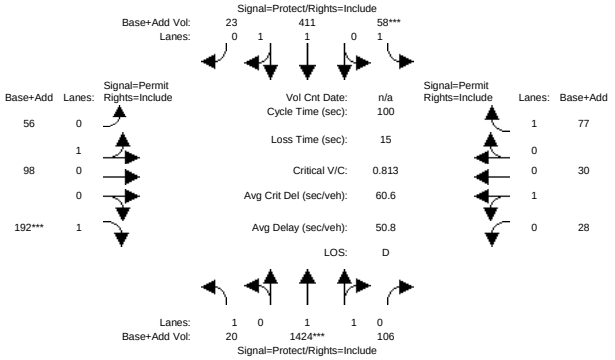
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	48	48	8	35	35	29	29	29	29	29	29
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	1424	106	58	411	23	56	98	192	28	30	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	1424	106	58	411	23	56	98	192	28	30	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1424	106	58	411	23	56	98	192	28	30	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	1499	112	61	433	24	59	103	202	29	32	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1499	112	61	433	24	59	103	202	29	32	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1499	112	61	433	24	59	103	202	29	32	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.84	0.80	0.81	0.80	0.80	0.74	0.74	0.72	0.71	0.71	0.72
Lanes:	1.00	1.86	0.14	1.00	1.89	0.11	0.36	0.64	1.00	0.48	0.52	1.00
Final Sat.:	1539	2969	221	1539	2892	162	511	894	1377	652	698	1377
Capacity Analysis Module:												
Vol/Sat:	0.01	0.50	0.50	0.04	0.15	0.15	0.12	0.12	0.15	0.05	0.05	0.06
Crit Moves:		****		****					****			
Green/Cycle:	0.20	0.48	0.48	0.08	0.36	0.36	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.07	1.05	1.05	0.50	0.42	0.42	0.40	0.40	0.51	0.16	0.16	0.20
Uniform Del:	32.1	26.0	26.0	44.1	24.4	24.4	28.5	28.5	29.5	26.4	26.4	26.8
IncremntDel:	0.4	38.0	38.0	13.6	1.2	1.2	2.9	2.9	4.5	0.8	0.8	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.6	64.0	64.0	57.6	25.5	25.5	31.4	31.4	34.1	27.2	27.2	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	64.0	64.0	57.6	25.5	25.5	31.4	31.4	34.1	27.2	27.2	27.9
LOS by Move:	C	E	E	E	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	30	29	2	6	6	4	4	5	1	1	2

Note: Queue reported is the number of cars per lane.

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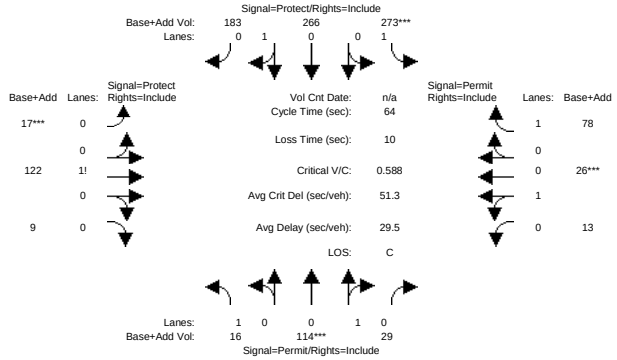
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	21	21	14	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	16	114	29	273	266	183	17	122	9	13	26	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	114	29	273	266	183	17	122	9	13	26	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	114	29	273	266	183	17	122	9	13	26	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	19	134	34	321	313	215	20	144	11	15	31	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	134	34	321	313	215	20	144	11	15	31	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	134	34	321	313	215	20	144	11	15	31	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.22	0.66	0.66	0.81	0.80	0.80	0.74	0.74	0.74	0.84	0.84	0.72
Lanes:	1.00	0.80	0.20	1.00	0.59	0.41	0.11	0.83	0.06	0.33	0.67	1.00
Final Sat.:	410	1002	255	1539	901	620	161	1153	85	531	1062	1377
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.13	0.21	0.35	0.35	0.12	0.12	0.12	0.03	0.03	0.07
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.14	0.41	0.41	0.95	0.63	0.63	0.89	0.42	0.42	0.18	0.18	0.43
Uniform Del:	15.1	16.7	16.7	24.7	10.1	10.1	27.0	18.1	18.1	23.5	23.5	24.4
IncremntDel:	2.2	3.0	3.0	38.6	3.7	3.7	39.9	3.1	3.1	1.6	1.6	6.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.3	19.6	19.6	63.2	13.7	13.7	66.9	21.2	21.2	25.1	25.1	30.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.3	19.6	19.6	63.2	13.7	13.7	66.9	21.2	21.2	25.1	25.1	30.5
LOS by Move:	B	B	B	E	B	B	E	C	C	C	C	C
HCM2kAvgQ:	0	3	3	7	7	7	2	3	1	1	1	2

Note: Queue reported is the number of cars per lane.

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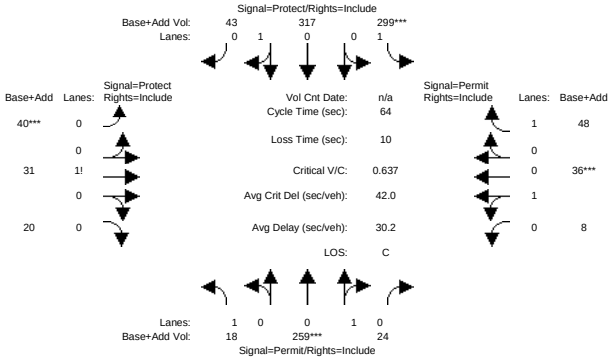
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	21	21	14	35	35	9	19	19	10	10	10
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	18	259	24	299	317	43	40	31	20	8	36	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	259	24	299	317	43	40	31	20	8	36	48
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	259	24	299	317	43	40	31	20	8	36	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	19	273	25	315	334	45	42	33	21	8	38	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	273	25	315	334	45	42	33	21	8	38	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	273	25	315	334	45	42	33	21	8	38	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.34	0.67	0.67	0.81	0.84	0.84	0.71	0.71	0.71	0.84	0.84	0.72
Lanes:	1.00	0.92	0.08	1.00	0.88	0.12	0.44	0.34	0.22	0.18	0.82	1.00
Final Sat.:	651	1171	109	1539	1401	190	591	458	296	291	1309	1377
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.23	0.20	0.24	0.24	0.07	0.07	0.07	0.03	0.03	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.09	0.71	0.71	0.93	0.44	0.44	0.51	0.24	0.24	0.19	0.19	0.23
Uniform Del:	14.9	18.8	18.8	24.5	8.6	8.6	25.4	17.0	17.0	23.5	23.5	23.6
IncremntDel:	0.8	9.7	9.7	34.9	1.6	1.6	9.4	1.4	1.4	1.6	1.6	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.7	28.6	28.6	59.4	10.2	10.2	34.8	18.4	18.4	25.1	25.1	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.7	28.6	28.6	59.4	10.2	10.2	34.8	18.4	18.4	25.1	25.1	26.2
LOS by Move:	B	C	C	E	B	B	C	B	B	C	C	C
HCM2kAvgQ:	0	7	7	7	4	4	2	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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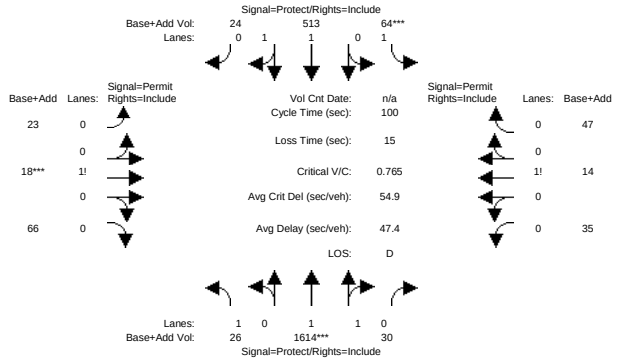
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	18	50	50	5	37	37	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	26	1614	30	64	513	24	23	18	66	35	14	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	1614	30	64	513	24	23	18	66	35	14	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	1614	30	64	513	24	23	18	66	35	14	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	27	1699	32	67	540	25	24	19	69	37	15	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1699	32	67	540	25	24	19	69	37	15	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1699	32	67	540	25	24	19	69	37	15	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.64	0.64	0.64	0.69	0.69	0.69
Lanes:	1.00	1.96	0.04	1.00	1.91	0.09	0.21	0.17	0.62	0.36	0.15	0.49
Final Sat.:	1539	3309	62	1539	2921	137	260	204	747	481	192	645
Capacity Analysis Module:												
Vol/Sat:	0.02	0.51	0.51	0.04	0.18	0.18	0.09	0.09	0.09	0.08	0.08	0.08
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.50	0.50	0.05	0.37	0.37	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.10	1.03	1.03	0.88	0.50	0.50	0.31	0.31	0.31	0.26	0.26	0.26
Uniform Del:	34.2	25.0	25.0	47.2	24.3	24.3	27.0	27.0	27.0	26.5	26.5	26.5
IncremntDel:	0.7	29.1	29.1	71.9	1.6	1.6	2.2	2.2	2.2	1.6	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.9	54.1	54.1	119.1	25.9	25.9	29.2	29.2	29.2	28.1	28.1	28.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	54.1	54.1	119.1	25.9	25.9	29.2	29.2	29.2	28.1	28.1	28.1
LOS by Move:	C	D	D	F	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	38	35	3	7	7	3	3	3	2	2	2

Note: Queue reported is the number of cars per lane.

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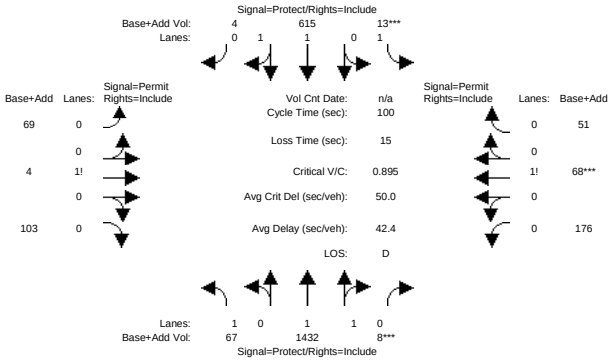
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	9	47	47	5	43	43	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	67	1432	8	13	615	4	69	4	103	176	68	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	1432	8	13	615	4	69	4	103	176	68	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	1432	8	13	615	4	69	4	103	176	68	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	71	1507	8	14	647	4	73	4	108	185	72	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	1507	8	14	647	4	73	4	108	185	72	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	1507	8	14	647	4	73	4	108	185	72	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.81	0.54	0.54	0.54	0.58	0.58	0.58
Lanes:	1.00	1.99	0.01	1.00	1.99	0.01	0.39	0.02	0.59	0.60	0.23	0.17
Final Sat.:	1539	3211	18	1539	3056	20	399	23	596	656	254	190
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.01	0.21	0.21	0.18	0.18	0.18	0.28	0.28	0.28
Crit Moves:				****	****						****	
Green/Cycle:	0.09	0.47	0.47	0.05	0.43	0.43	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.51	1.00	1.00	0.18	0.49	0.49	0.55	0.55	0.55	0.86	0.86	0.86
Uniform Del:	43.4	26.5	26.5	45.5	20.6	20.6	27.4	27.4	27.4	31.3	31.3	31.3
IncremntDel:	12.7	22.8	22.8	5.0	1.3	1.3	6.4	6.4	6.4	21.9	21.9	21.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.1	49.3	49.3	50.5	21.9	21.9	33.8	33.8	33.8	53.2	53.2	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.1	49.3	49.3	50.5	21.9	21.9	33.8	33.8	33.8	53.2	53.2	53.2
LOS by Move:	E	D	D	D	C	C	C	C	C	D	D	D
HCM2kAvgQ:	3	32	31	0	8	8	5	5	5	12	12	12

Note: Queue reported is the number of cars per lane.

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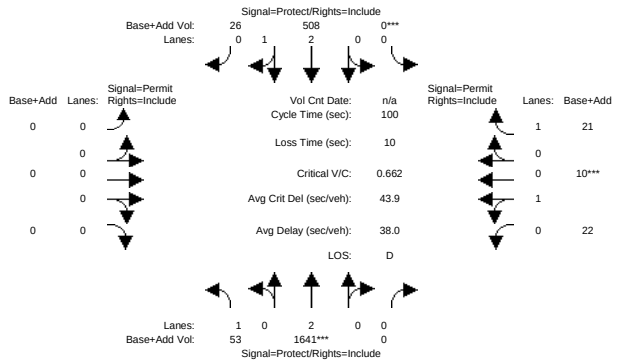
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	53	1641	0	0	508	26	0	0	0	22	10	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	1641	0	0	508	26	0	0	0	22	10	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	1641	0	0	508	26	0	0	0	22	10	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	57	1765	0	0	546	28	0	0	0	24	11	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	1765	0	0	546	28	0	0	0	24	11	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	1765	0	0	546	28	0	0	0	24	11	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.80	0.80	0.63
Lanes:	1.00	2.00	0.00	0.00	2.85	0.15	0.00	0.00	0.00	0.69	0.31	1.00
Final Sat.:	1539	3079	0	0	4179	214	0	0	0	1045	475	1205
Capacity Analysis Module:												
Vol/Sat:	0.04	0.57	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.02	0.02	0.02
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.24	1.01	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.07	0.07	0.06
Uniform Del:	37.2	21.5	0.0	0.0	19.6	19.6	0.0	0.0	0.0	23.0	23.0	22.9
IncremntDel:	2.4	22.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	39.6	44.3	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.2	23.2	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.6	44.3	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.2	23.2	23.1
LOS by Move:	D	D	A	A	C	C	A	A	A	C	C	C
HCM2kAvgQ:	1	30	0	0	4	4	0	0	0	1	1	0

Note: Queue reported is the number of cars per lane.

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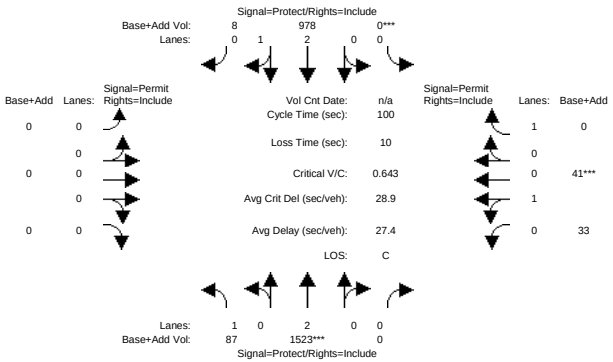
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	87	1523	0	0	978	8	0	0	0	33	41	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	1523	0	0	978	8	0	0	0	33	41	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	1523	0	0	978	8	0	0	0	33	41	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	93	1620	0	0	1040	9	0	0	0	35	44	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	1620	0	0	1040	9	0	0	0	35	44	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	1620	0	0	1040	9	0	0	0	35	44	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.78	0.78	1.00	1.00	1.00	0.80	0.80	1.00
Lanes:	1.00	2.00	0.00	0.00	2.98	0.02	0.00	0.00	0.00	0.45	0.55	1.00
Final Sat.:	1539	3079	0	0	4384	36	0	0	0	674	838	1900
Capacity Analysis Module:												
Vol/Sat:	0.06	0.53	0.00	0.00	0.24	0.24	0.00	0.00	0.00	0.05	0.05	0.00
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.00
Volume/Cap:	0.39	0.92	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.16	0.16	0.00
Uniform Del:	38.1	19.5	0.0	0.0	22.3	22.3	0.0	0.0	0.0	23.7	23.7	0.0
IncremntDel:	4.8	9.6	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
Delay/Veh:	42.9	29.2	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.9	29.2	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
LOS by Move:	D	C	A	A	C	C	A	A	A	C	C	A
HCM2kAvgQ:	2	24	0	0	9	9	0	0	0	2	2	0

Note: Queue reported is the number of cars per lane.

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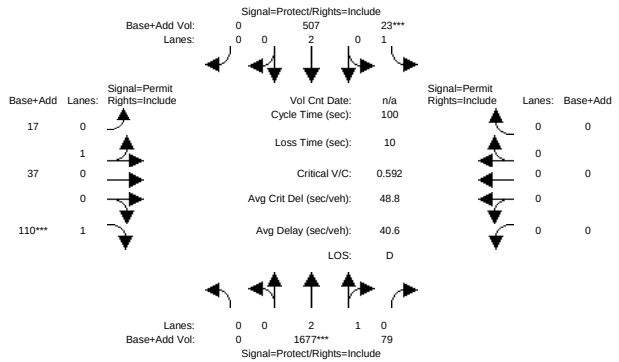
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1677	79	23	507	0	17	37	110	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1677	79	23	507	0	17	37	110	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1677	79	23	507	0	17	37	110	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1765	83	24	534	0	18	39	116	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1765	83	24	534	0	18	39	116	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1765	83	24	534	0	18	39	116	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.84	0.84	0.63	1.00	1.00	1.00
Lanes:	0.00	2.87	0.13	1.00	2.00	0.00	0.31	0.69	1.00	0.00	0.00	0.00
Final Sat.:	0	4195	198	1539	3079	0	502	1093	1205	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.42	0.02	0.17	0.00	0.04	0.04	0.10	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.42	0.42	0.15	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	1.00	1.00	0.10	0.30	0.00	0.11	0.11	0.29	0.00	0.00	0.00
Uniform Del:	0.0	29.0	29.0	36.7	11.2	0.0	23.3	23.3	24.8	0.0	0.0	0.0
IncremntDel:	0.0	21.4	21.4	0.9	0.4	0.0	0.4	0.4	1.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	50.4	50.4	37.6	11.6	0.0	23.7	23.7	26.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	50.4	50.4	37.6	11.6	0.0	23.7	23.7	26.7	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	28	28	1	5	0	1	1	3	0	0	0

Note: Queue reported is the number of cars per lane.

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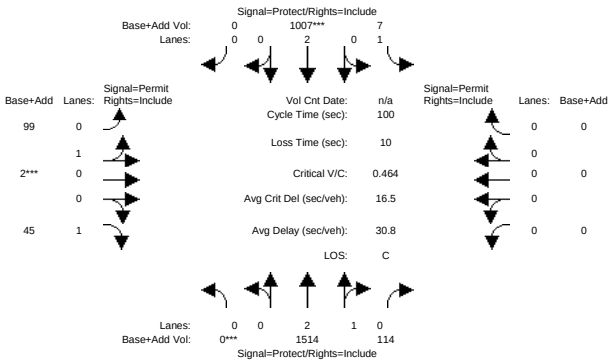
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1514	114	7	1007	0	99	2	45	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1514	114	7	1007	0	99	2	45	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1514	114	7	1007	0	99	2	45	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1594	120	7	1060	0	104	2	47	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1594	120	7	1060	0	104	2	47	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1594	120	7	1060	0	104	2	47	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.77	0.77	0.63	1.00	1.00	1.00
Lanes:	0.00	2.79	0.21	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	4073	307	1539	3079	0	1426	29	1205	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.00	0.34	0.00	0.07	0.07	0.04	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.41	0.41	0.16	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.95	0.95	0.03	0.60	0.00	0.22	0.22	0.12	0.00	0.00	0.00
Uniform Del:	0.0	28.4	28.4	35.6	14.1	0.0	24.2	24.2	23.4	0.0	0.0	0.0
IncremntDel:	0.0	12.2	12.2	0.2	1.6	0.0	1.1	1.1	0.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	40.6	40.6	35.9	15.6	0.0	25.3	25.3	24.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.6	40.6	35.9	15.6	0.0	25.3	25.3	24.0	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	24	24	0	12	0	2	2	1	0	0	0

Note: Queue reported is the number of cars per lane.

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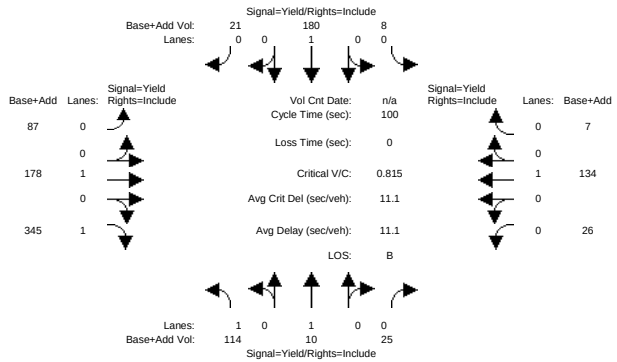
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
2040 Var S2B AM

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	114	10	25	8	180	21	87	178	345	26	134	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	10	25	8	180	21	87	178	345	26	134	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	10	25	8	180	21	87	178	345	26	134	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	158	14	35	11	250	29	121	247	479	36	186	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	14	35	11	250	29	121	247	479	36	186	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	14	35	11	250	29	121	247	479	36	186	10
PCE Module:												
AutoPCE:	158	14	35	11	250	29	121	247	479	36	186	10
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	158	14	35	11	250	29	121	247	479	36	186	10

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	379	381	297	293
MaxVolume:	995	995	1040	1042
PedVolume:	0	0	0	0
AdjMaxVol:	995	995	1040	1042
ApproachVol:	207	290	847	232
ApproachV/C:	0.21	0.29	0.82	0.22
ApproachDel:	4.6	5.1	16.6	4.4
ApproachLOS:	A	A	C	A
Queue:	0.8	1.2	9.5	0.9

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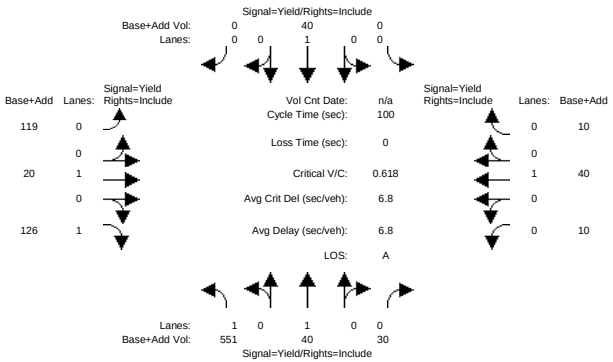
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
2040 Var S2B PM

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	551	40	30	0	40	0	119	20	126	10	40	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	40	30	0	40	0	119	20	126	10	40	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	551	40	30	0	40	0	119	20	126	10	40	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	612	44	33	0	44	0	132	22	140	11	44	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Module:												
AutoPCE:	612	44	33	0	44	0	132	22	140	11	44	11
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	612	44	33	0	44	0	132	22	140	11	44	11

Delay Module: >> Time Period: 0.25 hours <<				
CircVolume:	154	668	56	789
MaxVolume:	1117	839	1170	774
PedVolume:	0	0	0	0
AdjMaxVol:	1117	839	1170	774
ApproachVol:	690	44	294	67
ApproachV/C:	0.62	0.05	0.25	0.09
ApproachDel:	8.3	4.5	4.1	5.1
ApproachLOS:	A	A	A	A
Queue:	4.5	0.2	1.0	0.3

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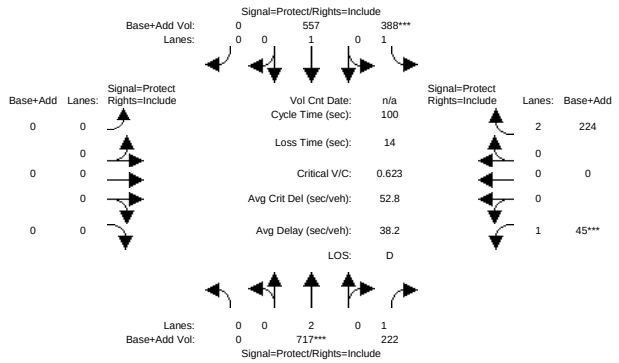
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	717	222	388	557	0	0	0	0	45	0	224
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	717	222	388	557	0	0	0	0	45	0	224
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	717	222	388	557	0	0	0	0	45	0	224
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	747	231	404	580	0	0	0	0	47	0	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	747	231	404	580	0	0	0	0	47	0	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	747	231	404	580	0	0	0	0	47	0	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.72	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.64
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	1377	1539	1620	0	0	0	0	1539	0	2424
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.17	0.26	0.36	0.00	0.00	0.00	0.00	0.03	0.00	0.10
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.36	0.36	0.25	0.61	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.67	0.47	1.05	0.59	0.00	0.00	0.00	0.00	0.12	0.00	0.38
Uniform Del:	0.0	27.0	24.6	37.5	11.8	0.0	0.0	0.0	0.0	29.0	0.0	31.1
IncremntDel:	0.0	3.3	3.1	59.6	2.6	0.0	0.0	0.0	0.0	0.6	0.0	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	30.3	27.7	97.1	14.4	0.0	0.0	0.0	0.0	29.7	0.0	33.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.3	27.7	97.1	14.4	0.0	0.0	0.0	0.0	29.7	0.0	33.0
LOS by Move:	A	C	C	F	B	A	A	A	A	C	A	C
HCM2kAvgQ:	0	11	6	20	11	0	0	0	0	1	0	4

Note: Queue reported is the number of cars per lane.

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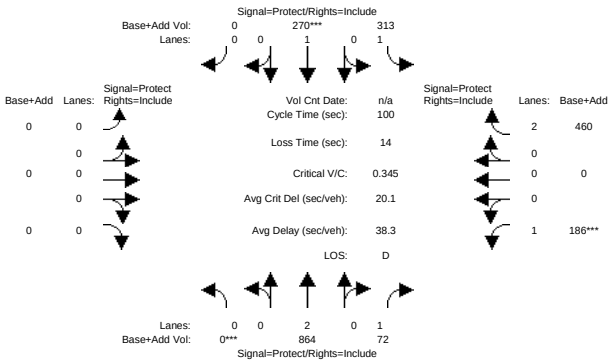
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	32	32	14	57	0	0	0	0	29	0	29
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	864	72	313	270	0	0	0	0	186	0	460
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	864	72	313	270	0	0	0	0	186	0	460
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	864	72	313	270	0	0	0	0	186	0	460
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	891	74	323	278	0	0	0	0	192	0	474
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	891	74	323	278	0	0	0	0	192	0	474
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	891	74	323	278	0	0	0	0	192	0	474
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.72	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.64
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	1377	1539	1620	0	0	0	0	1539	0	2424
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.05	0.21	0.17	0.00	0.00	0.00	0.00	0.12	0.00	0.20
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.34	0.34	0.23	0.57	0.00	0.00	0.00	0.00	0.29	0.00	0.29
Volume/Cap:	0.00	0.84	0.16	0.93	0.30	0.00	0.00	0.00	0.00	0.43	0.00	0.67
Uniform Del:	0.0	30.2	22.7	37.9	11.2	0.0	0.0	0.0	0.0	28.8	0.0	31.3
IncremntDel:	0.0	8.0	0.7	33.3	0.8	0.0	0.0	0.0	0.0	3.0	0.0	5.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	38.3	23.4	71.2	12.0	0.0	0.0	0.0	0.0	31.8	0.0	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	38.3	23.4	71.2	12.0	0.0	0.0	0.0	0.0	31.8	0.0	36.5
LOS by Move:	A	D	C	E	B	A	A	A	A	C	A	D
HCM2kAvgQ:	0	16	2	14	4	0	0	0	0	5	0	8

Note: Queue reported is the number of cars per lane.

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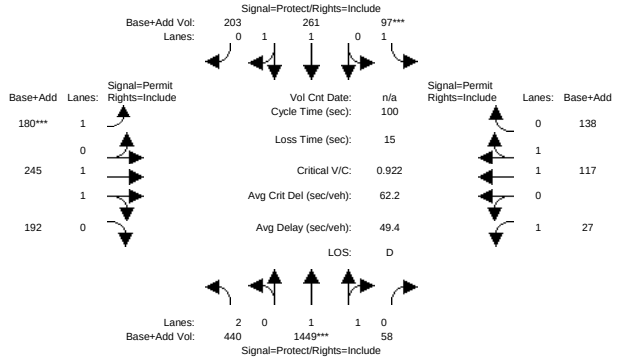
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	19	50	50	9	36	36	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	440	1449	58	97	261	203	180	245	192	27	117	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	440	1449	58	97	261	203	180	245	192	27	117	138
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	440	1449	58	97	261	203	180	245	192	27	117	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	458	1509	60	101	272	211	188	255	200	28	122	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	458	1509	60	101	272	211	188	255	200	28	122	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	458	1509	60	101	272	211	188	255	200	28	122	144
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.76	0.76	0.47	0.71	0.71	0.32	0.70	0.70
Lanes:	2.00	1.92	0.08	1.00	1.13	0.87	1.00	1.12	0.88	1.00	1.00	1.00
Final Sat.:	2987	2943	118	1539	1618	1258	901	1511	1185	609	1326	1326
Capacity Analysis Module:												
Vol/Sat:	0.15	0.51	0.51	0.07	0.17	0.17	0.21	0.17	0.17	0.05	0.09	0.11
Crit Moves:		****		****			****					
Green/Cycle:	0.20	0.49	0.49	0.09	0.38	0.38	0.27	0.27	0.27	0.27	0.27	0.27
Volume/Cap:	0.77	1.05	1.05	0.74	0.44	0.44	0.76	0.62	0.62	0.17	0.33	0.39
Uniform Del:	38.6	26.0	26.0	45.4	23.7	23.7	33.9	32.3	32.3	28.1	29.6	30.1
IncremntDel:	9.2	36.4	36.4	30.4	1.3	1.3	19.4	3.8	3.8	2.2	1.1	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.8	62.4	62.4	75.8	25.0	25.0	53.3	36.1	36.1	30.3	30.7	31.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.8	62.4	62.4	75.8	25.0	25.0	53.3	36.1	36.1	30.3	30.7	31.8
LOS by Move:	D	E	E	E	C	C	D	D	D	C	C	C
HCM2kAvgQ:	7	30	30	5	6	6	6	7	7	1	3	4

Note: Queue reported is the number of cars per lane.

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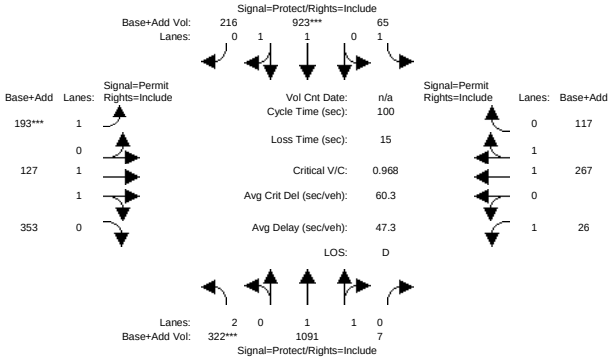
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	50	50	5	41	41	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	322	1091	7	65	923	216	193	127	353	26	267	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	322	1091	7	65	923	216	193	127	353	26	267	117
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	322	1091	7	65	923	216	193	127	353	26	267	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	346	1173	8	70	992	232	208	137	380	28	287	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	346	1173	8	70	992	232	208	137	380	28	287	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	346	1173	8	70	992	232	208	137	380	28	287	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.79	0.79	0.37	0.68	0.68	0.29	0.72	0.72
Lanes:	2.00	1.99	0.01	1.00	1.62	0.38	1.00	1.00	1.00	1.00	1.39	0.61
Final Sat.:	2987	3056	20	1539	2425	568	697	1284	1284	557	1915	839
Capacity Analysis Module:												
Vol/Sat:	0.12	0.38	0.38	0.05	0.41	0.41	0.30	0.11	0.30	0.05	0.15	0.15
Crit Moves:	****				****		****					
Green/Cycle:	0.14	0.50	0.50	0.05	0.41	0.41	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.83	0.77	0.77	0.91	1.00	1.00	0.99	0.35	0.99	0.17	0.50	0.50
Uniform Del:	41.8	20.3	20.3	47.3	29.5	29.5	34.9	27.4	34.8	25.8	28.8	28.8
IncremntDel:	17.0	3.7	3.7	79.2	25.3	25.3	60.4	0.7	35.8	2.1	2.2	2.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.8	24.0	24.0	126.5	54.7	54.7	95.3	28.1	70.6	27.9	31.0	31.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.8	24.0	24.0	126.5	54.7	54.7	95.3	28.1	70.6	27.9	31.0	31.0
LOS by Move:	E	C	C	F	D	D	F	C	E	C	C	C
HCM2kAvgQ:	6	15	15	4	27	27	9	3	16	1	6	6

Note: Queue reported is the number of cars per lane.

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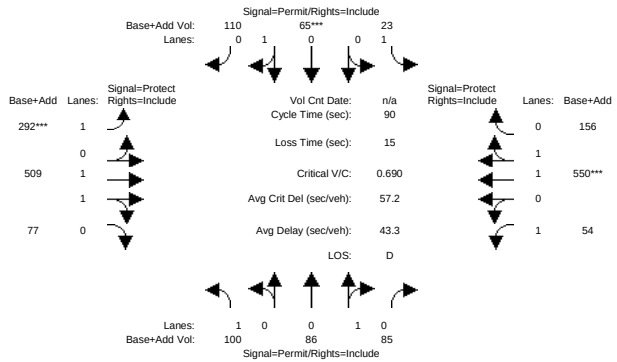
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	15	40	40	15	40	40
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	100	86	85	23	65	110	292	509	77	54	550	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	86	85	23	65	110	292	509	77	54	550	156
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	86	85	23	65	110	292	509	77	54	550	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	105	91	89	24	68	116	307	536	81	57	579	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	91	89	24	68	116	307	536	81	57	579	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	91	89	24	68	116	307	536	81	57	579	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.46	0.79	0.79	0.47	0.77	0.77	0.81	0.74	0.74	0.81	0.78	0.78
Lanes:	1.00	0.50	0.50	1.00	0.37	0.63	1.00	1.74	0.26	1.00	1.56	0.44
Final Sat.:	875	754	745	888	545	923	1539	2457	372	1539	2319	658
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.03	0.13	0.13	0.20	0.22	0.22	0.04	0.25	0.25
Crit Moves:					****		****				****	
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.17	0.44	0.44	0.17	0.44	0.44
Volume/Cap:	0.54	0.54	0.54	0.12	0.56	0.56	1.20	0.49	0.49	0.22	0.56	0.56
Uniform Del:	30.9	30.9	30.9	28.0	31.1	31.1	37.5	17.8	17.8	32.4	18.5	18.5
IncremntDel:	10.4	6.2	6.2	1.3	6.9	6.9	120.5	1.4	1.4	2.0	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.3	37.1	37.1	29.3	38.0	38.0	158.0	19.1	19.1	34.4	20.2	20.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.3	37.1	37.1	29.3	38.0	38.0	158.0	19.1	19.1	34.4	20.2	20.2
LOS by Move:	D	D	D	C	D	D	F	B	B	C	C	C
HCM2kAvgQ:	3	5	5	1	5	5	15	6	6	1	8	8

Note: Queue reported is the number of cars per lane.

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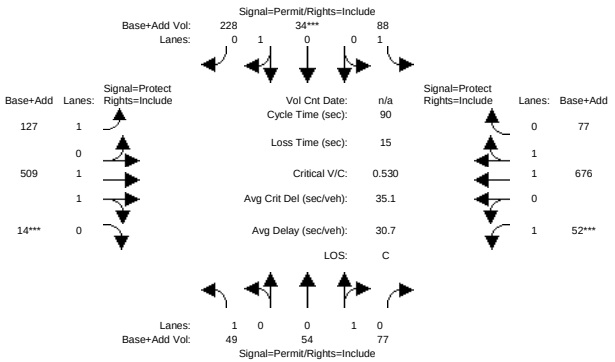
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	10	40	40	15	45	45
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	49	54	77	88	34	228	127	509	14	52	676	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	54	77	88	34	228	127	509	14	52	676	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	54	77	88	34	228	127	509	14	52	676	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	54	59	85	97	37	251	140	559	15	57	743	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	59	85	97	37	251	140	559	15	57	743	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	59	85	97	37	251	140	559	15	57	743	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.29	0.78	0.78	0.53	0.74	0.74	0.81	0.76	0.76	0.81	0.80	0.80
Lanes:	1.00	0.41	0.59	1.00	0.13	0.87	1.00	1.95	0.05	1.00	1.80	0.20
Final Sat.:	546	609	869	1011	183	1225	1539	2798	77	1539	2723	310
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.10	0.20	0.20	0.09	0.20	0.20	0.04	0.27	0.27
Crit Moves:					****				****	****		
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.11	0.44	0.44	0.17	0.50	0.50
Volume/Cap:	0.44	0.44	0.44	0.43	0.92	0.92	0.82	0.45	0.45	0.22	0.55	0.55
Uniform Del:	30.2	30.2	30.2	30.1	34.2	34.2	39.1	17.4	17.4	32.5	15.5	15.5
IncremntDel:	11.3	4.2	4.2	5.9	34.0	34.0	33.3	1.1	1.1	2.0	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.5	34.4	34.4	36.0	68.2	68.2	72.4	18.5	18.5	34.5	16.9	16.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.5	34.4	34.4	36.0	68.2	68.2	72.4	18.5	18.5	34.5	16.9	16.9
LOS by Move:	D	C	C	D	E	E	E	B	B	C	B	B
HCM2kAvgQ:	2	4	4	3	12	12	4	6	6	1	8	8

Note: Queue reported is the number of cars per lane.

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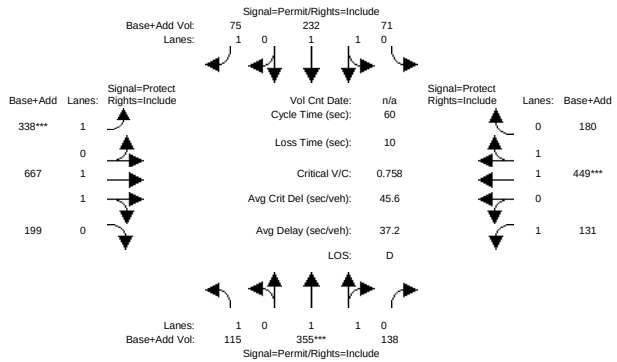
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #36: 16th/Owens



Street Name:	Owens St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	20	20	10	25	25	5	18	18
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	115	355	138	71	232	75	338	667	199	131	449	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	355	138	71	232	75	338	667	199	131	449	180
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	355	138	71	232	75	338	667	199	131	449	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	121	374	145	75	244	79	356	702	209	138	473	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	374	145	75	244	79	356	702	209	138	473	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	374	145	75	244	79	356	702	209	138	473	189
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.45	0.78	0.78	0.62	0.62	0.72	0.81	0.73	0.73	0.81	0.78	0.78
Lanes:	1.00	1.44	0.56	0.47	1.53	1.00	1.00	1.54	0.46	1.00	1.43	0.57
Final Sat.:	864	2124	826	550	1796	1377	1539	2148	641	1539	2103	843
Capacity Analysis Module:												
Vol/Sat:	0.14	0.18	0.18	0.14	0.14	0.06	0.23	0.33	0.33	0.09	0.22	0.22
Crit Moves:		****					****				****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.20	0.42	0.42	0.08	0.30	0.30
Volume/Cap:	0.42	0.53	0.53	0.41	0.41	0.17	1.16	0.78	0.78	1.07	0.75	0.75
Uniform Del:	15.5	16.2	16.2	15.4	15.4	14.1	24.0	15.2	15.2	27.5	19.0	19.0
IncremntDel:	4.5	2.0	2.0	1.6	1.6	0.8	100.3	5.3	5.3	100.9	5.8	5.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.0	18.2	18.2	17.0	17.0	15.0	124.3	20.5	20.5	128.4	24.7	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.0	18.2	18.2	17.0	17.0	15.0	124.3	20.5	20.5	128.4	24.7	24.7
LOS by Move:	B	B	B	B	B	B	F	C	C	F	C	C
HCM2kAvgQ:	2	5	5	3	3	1	12	7	7	5	6	6

Note: Queue reported is the number of cars per lane.

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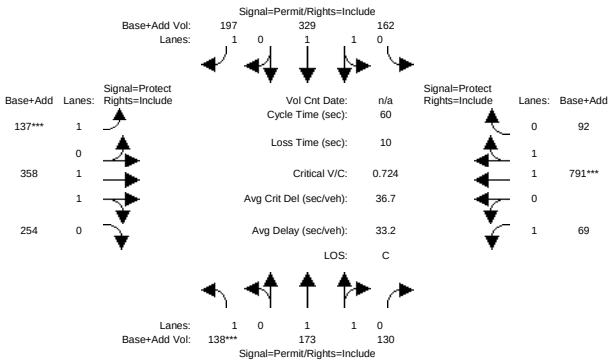
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #36: 16th/Owens



Street Name:	Owens St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	20	20	10	20	20	10	20	20
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	138	173	130	162	329	197	137	358	254	69	791	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	173	130	162	329	197	137	358	254	69	791	92
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	173	130	162	329	197	137	358	254	69	791	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	145	182	137	171	346	207	144	377	267	73	833	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	182	137	171	346	207	144	377	267	73	833	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	182	137	171	346	207	144	377	267	73	833	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.30	0.76	0.76	0.56	0.56	0.72	0.81	0.71	0.71	0.81	0.80	0.80
Lanes:	1.00	1.14	0.86	0.66	1.34	1.00	1.00	1.17	0.83	1.00	1.79	0.21
Final Sat.:	564	1645	1236	704	1430	1377	1539	1584	1124	1539	2714	316
Capacity Analysis Module:												
Vol/Sat:	0.26	0.11	0.11	0.24	0.24	0.15	0.09	0.24	0.24	0.05	0.31	0.31
Crit Moves:	****						****				****	
Green/Cycle:	0.36	0.36	0.36	0.36	0.36	0.36	0.13	0.40	0.40	0.15	0.42	0.42
Volume/Cap:	0.72	0.31	0.31	0.68	0.68	0.42	0.72	0.59	0.59	0.31	0.72	0.72
Uniform Del:	30.7	25.7	25.7	30.1	30.1	26.9	46.0	26.0	26.0	41.4	26.3	26.3
IncremntDel:	20.2	0.8	0.8	4.9	4.9	2.7	20.4	2.4	2.4	3.4	3.6	3.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.0	26.5	26.5	35.0	35.0	29.5	66.3	28.4	28.4	44.8	29.9	29.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.0	26.5	26.5	35.0	35.0	29.5	66.3	28.4	28.4	44.8	29.9	29.9
LOS by Move:	D	C	C	D	D	C	E	C	C	D	C	C
HCM2kAvgQ:	6	4	4	9	9	6	5	9	9	2	14	14

Note: Queue reported is the number of cars per lane.

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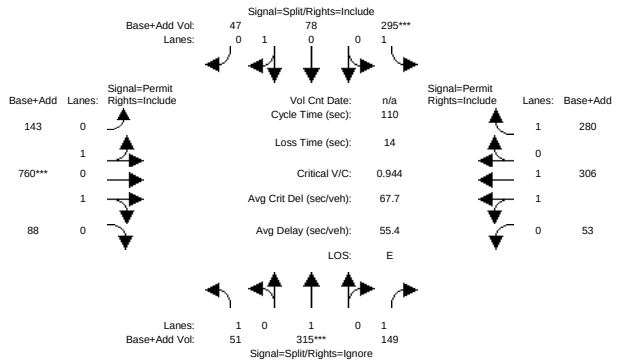
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	30	30	30	30	30	30	36	36	36	36	36	67			
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0			
Volume Module:															
Base Vol:	51	315	149	295	78	47	143	760	88	53	306	280			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	51	315	149	295	78	47	143	760	88	53	306	280			
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	51	315	149	295	78	47	143	760	88	53	306	280			
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
PHF Volume:	52	321	0	301	80	48	146	776	90	54	312	286			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	52	321	0	301	80	48	146	776	90	54	312	286			
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	52	321	0	301	80	48	146	776	90	54	312	286			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.81	0.85	1.00	0.81	0.70	0.70	0.58	0.58	0.58	0.52	0.52	0.72			
Lanes:	1.00	1.00	1.00	1.00	0.62	0.38	0.29	1.53	0.18	0.30	1.70	1.00			
Final Sat.:	1539	1620	1900	1539	835	503	320	1700	197	289	1669	1377			
Capacity Analysis Module:															
Vol/Sat:	0.03	0.20	0.00	0.20	0.10	0.10	0.46	0.46	0.46	0.19	0.19	0.21			
Crit Moves:		****		****				****							
Green/Cycle:	0.21	0.21	0.00	0.21	0.21	0.21	0.48	0.48	0.48	0.48	0.48	0.48			
Volume/Cap:	0.16	0.93	0.00	0.92	0.45	0.45	0.96	0.96	0.96	0.39	0.39	0.44			
Uniform Del:	45.2	54.5	0.0	54.3	48.3	48.3	35.7	35.7	35.7	23.9	23.9	24.5			
IncremntDel:	1.0	34.0	0.0	32.8	5.0	5.0	19.6	19.6	19.6	1.3	1.3	2.1			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Delay/Veh:	46.3	88.5	0.0	87.1	53.3	53.3	55.4	55.4	55.4	25.1	25.1	26.6			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	46.3	88.5	0.0	87.1	53.3	53.3	55.4	55.4	55.4	25.1	25.1	26.6			
LOS by Move:	D	F	A	F	D	D	E	E	E	C	C	C			
HCM2kAvgQ:	2	17	0	16	5	5	27	27	27	5	5	8			

Note: Queue reported is the number of cars per lane.

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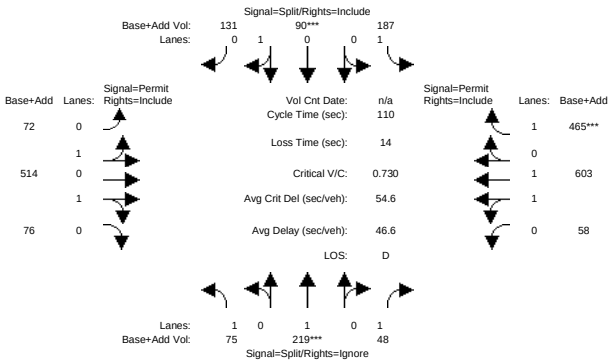
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #37: 16th/7th



Street Name:	7th Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	37	37	37	30	30	30	29	29	29	29	29	59			
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0			
Volume Module:															
Base Vol:	75	219	48	187	90	131	72	514	76	58	603	465			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	75	219	48	187	90	131	72	514	76	58	603	465			
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	75	219	48	187	90	131	72	514	76	58	603	465			
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
PHF Volume:	77	223	0	191	92	134	73	524	78	59	615	474			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	77	223	0	191	92	134	73	524	78	59	615	474			
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	77	223	0	191	92	134	73	524	78	59	615	474			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.81	0.85	1.00	0.81	0.68	0.68	0.53	0.53	0.53	0.61	0.61	0.72			
Lanes:	1.00	1.00	1.00	1.00	0.41	0.59	0.22	1.55	0.23	0.18	1.82	1.00			
Final Sat.:	1539	1620	1900	1539	526	766	219	1566	232	203	2107	1377			
Capacity Analysis Module:															
Vol/Sat:	0.05	0.14	0.00	0.12	0.17	0.17	0.33	0.33	0.33	0.29	0.29	0.34			
Crit Moves:		****			****							****			
Green/Cycle:	0.26	0.26	0.00	0.21	0.21	0.21	0.42	0.42	0.42	0.42	0.42	0.42			
Volume/Cap:	0.19	0.52	0.00	0.58	0.81	0.81	0.79	0.79	0.79	0.69	0.69	0.82			
Uniform Del:	39.9	44.0	0.0	49.3	52.4	52.4	35.2	35.2	35.2	33.1	33.1	35.7			
IncremntDel:	1.0	4.5	0.0	7.2	22.5	22.5	7.6	7.6	7.6	4.1	4.1	12.1			
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Delay/Veh:	40.9	48.4	0.0	56.5	74.9	74.9	42.8	42.8	42.8	37.2	37.2	47.8			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	40.9	48.4	0.0	56.5	74.9	74.9	42.8	42.8	42.8	37.2	37.2	47.8			
LOS by Move:	D	D	A	E	E	E	D	D	D	D	D	D			
HCM2kAvgQ:	3	8	0	8	11	11	15	15	15	13	13	19			

Note: Queue reported is the number of cars per lane.

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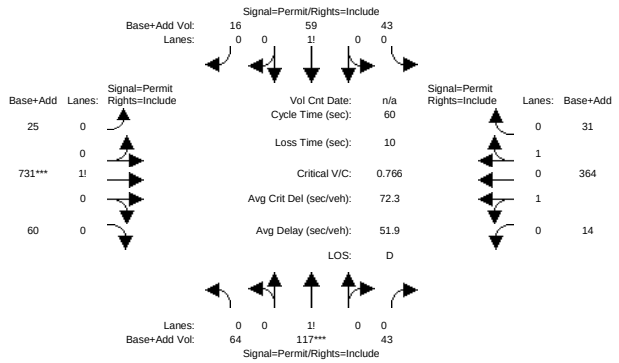
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	26	26	26	26	26	26
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	64	117	43	43	59	16	25	731	60	14	364	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	117	43	43	59	16	25	731	60	14	364	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	117	43	43	59	16	25	731	60	14	364	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	70	129	47	47	65	18	27	803	66	15	400	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	129	47	47	65	18	27	803	66	15	400	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	129	47	47	65	18	27	803	66	15	400	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.82	0.82	0.82	0.97	0.97	0.97	0.87	0.87	0.87
Lanes:	0.29	0.52	0.19	0.36	0.50	0.14	0.03	0.90	0.07	0.07	1.78	0.15
Final Sat.:	466	852	313	568	780	211	56	1650	135	113	2933	250
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.08	0.08	0.08	0.49	0.49	0.49	0.14	0.14	0.14
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.38	0.38	0.38	0.21	0.21	0.21	1.12	1.12	1.12	0.31	0.31	0.31
Uniform Del:	12.7	12.7	12.7	11.8	11.8	11.8	17.0	17.0	17.0	11.2	11.2	11.2
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	71.6	71.6	71.6	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	88.6	88.6	88.6	11.3	11.3	11.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	88.6	88.6	88.6	11.3	11.3	11.3
LOS by Move:	B	B	B	B	B	B	F	F	F	B	B	B
HCM2kAvgQ:	3	3	3	2	2	2	28	28	28	3	3	3

Note: Queue reported is the number of cars per lane.

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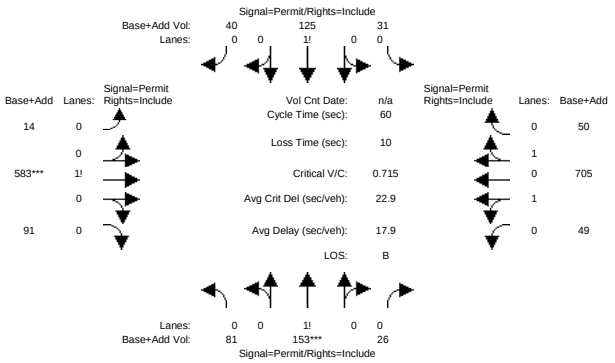
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	81	153	26	31	125	40	14	583	91	49	705	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	153	26	31	125	40	14	583	91	49	705	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	81	153	26	31	125	40	14	583	91	49	705	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	89	168	29	34	137	44	15	641	100	54	775	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	168	29	34	137	44	15	641	100	54	775	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	168	29	34	137	44	15	641	100	54	775	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	0.83	0.89	0.89	0.89	0.96	0.96	0.96	0.81	0.81	0.81
Lanes:	0.31	0.59	0.10	0.16	0.64	0.20	0.02	0.85	0.13	0.12	1.76	0.12
Final Sat.:	491	927	158	268	1081	346	37	1546	241	188	2701	192
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.13	0.13	0.13	0.41	0.41	0.41	0.29	0.29	0.29
Crit Moves:		****						****				
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Volume/Cap:	0.49	0.49	0.49	0.35	0.35	0.35	0.89	0.89	0.89	0.61	0.61	0.61
Uniform Del:	14.7	14.7	14.7	13.8	13.8	13.8	14.6	14.6	14.6	12.0	12.0	12.0
IncremntDel:	0.7	0.7	0.7	0.3	0.3	0.3	11.2	11.2	11.2	0.8	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	25.8	25.8	25.8	12.8	12.8	12.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	25.8	25.8	25.8	12.8	12.8	12.8
LOS by Move:	B	B	B	B	B	B	C	C	C	B	B	B
HCM2kAvgQ:	5	5	5	3	3	3	13	13	13	7	7	7

Note: Queue reported is the number of cars per lane.

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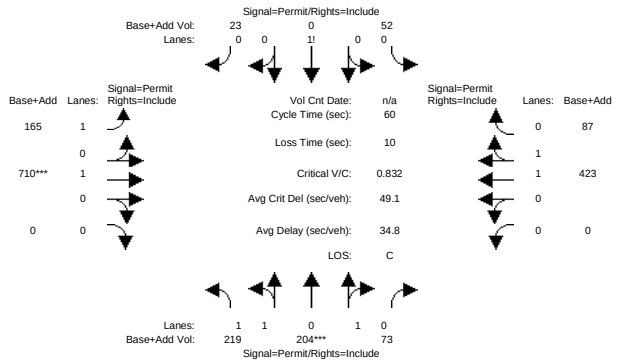
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	30	30	30	30	30	30
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	219	204	73	52	0	23	165	710	0	0	423	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	219	204	73	52	0	23	165	710	0	0	423	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	219	204	73	52	0	23	165	710	0	0	423	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	235	219	78	56	0	25	177	763	0	0	455	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	219	78	56	0	25	177	763	0	0	455	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	219	78	56	0	25	177	763	0	0	455	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	0.60	0.60	0.49	1.00	0.49	0.38	0.75	1.00	1.00	0.74	0.74
Lanes:	1.33	1.23	0.44	0.69	0.00	0.31	1.00	1.00	0.00	0.00	1.66	0.34
Final Sat.:	1519	1415	506	651	0	288	728	1418	0	0	2332	480
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.09	0.00	0.09	0.24	0.54	0.00	0.00	0.20	0.20
Crit Moves:		****						****				
Green/Cycle:	0.33	0.33	0.33	0.33	0.00	0.33	0.50	0.50	0.00	0.00	0.50	0.50
Volume/Cap:	0.46	0.46	0.46	0.26	0.00	0.26	0.49	1.08	0.00	0.00	0.39	0.39
Uniform Del:	15.8	15.8	15.8	14.6	0.0	14.6	9.9	15.0	0.0	0.0	9.3	9.3
IncremntDel:	1.4	1.4	1.4	2.0	0.0	2.0	4.6	56.4	0.0	0.0	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	17.1	17.1	17.1	16.6	0.0	16.6	14.5	71.4	0.0	0.0	10.1	10.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	17.1	17.1	16.6	0.0	16.6	14.5	71.4	0.0	0.0	10.1	10.1
LOS by Move:	B	B	B	B	A	B	B	E	A	A	B	B
HCM2kAvgQ:	3	3	3	1	0	1	2	23	0	0	3	3

Note: Queue reported is the number of cars per lane.

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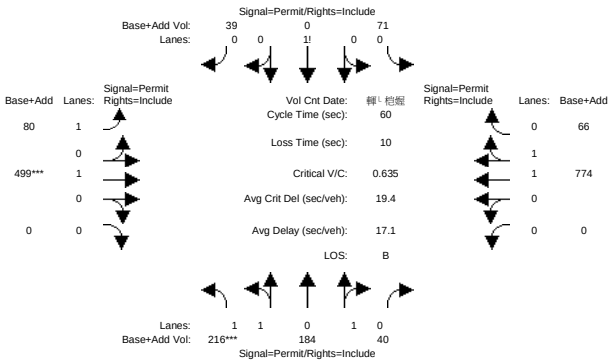
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	216	184	40	71	0	39	80	499	0	0	774	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	184	40	71	0	39	80	499	0	0	774	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	184	40	71	0	39	80	499	0	0	774	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	237	202	44	78	0	43	88	548	0	0	851	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	202	44	78	0	43	88	548	0	0	851	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	202	44	78	0	43	88	548	0	0	851	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.59	0.59	0.50	1.00	0.50	0.22	0.75	1.00	1.00	0.75	0.75
Lanes:	1.48	1.25	0.27	0.65	0.00	0.35	1.00	1.00	0.00	0.00	1.84	0.16
Final Sat.:	1665	1418	308	612	0	336	420	1418	0	0	2628	224
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.13	0.00	0.13	0.21	0.39	0.00	0.00	0.32	0.32
Crit Moves:	****							****				
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.41	0.41	0.41	0.36	0.00	0.36	0.43	0.80	0.00	0.00	0.67	0.67
Uniform Del:	14.8	14.8	14.8	14.5	0.0	14.5	10.1	13.1	0.0	0.0	11.8	11.8
IncremntDel:	1.0	1.0	1.0	3.1	0.0	3.1	6.6	9.5	0.0	0.0	2.6	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.8	15.8	15.8	17.6	0.0	17.6	16.7	22.6	0.0	0.0	14.4	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.8	15.8	15.8	17.6	0.0	17.6	16.7	22.6	0.0	0.0	14.4	14.4
LOS by Move:	B	B	B	B	A	B	B	C	A	A	B	B
HCM2kAvgQ:	3	3	3	2	0	2	1	9	0	0	7	7

Note: Queue reported is the number of cars per lane.

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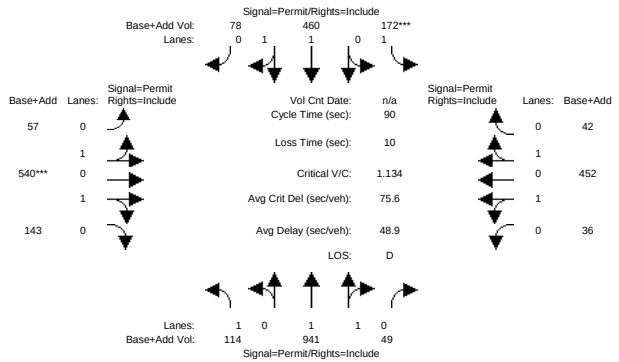
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	114	941	49	172	460	78	57	540	143	36	452	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	941	49	172	460	78	57	540	143	36	452	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	941	49	172	460	78	57	540	143	36	452	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	970	51	177	474	80	59	557	147	37	466	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	970	51	177	474	80	59	557	147	37	466	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	970	51	177	474	80	59	557	147	37	466	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.33	0.59	0.74	0.14	0.58	0.72	0.62	0.56	0.62	0.63	0.57	0.63
Lanes:	1.00	1.92	0.08	1.00	1.76	0.24	0.14	1.50	0.36	0.12	1.74	0.14
Final Sat.:	630	2146	112	269	1939	329	168	1594	422	149	1871	174
Capacity Analysis Module:												
Vol/Sat:	0.19	0.45	0.45	0.66	0.24	0.24	0.35	0.35	0.35	0.25	0.25	0.25
Crit Moves:				****				****				
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Volume/Cap:	0.42	1.02	1.02	1.48	0.55	0.55	0.79	0.79	0.79	0.56	0.56	0.56
Uniform Del:	17.1	25.0	25.0	25.0	18.4	18.4	21.3	21.3	21.3	18.5	18.5	18.5
IncremntDel:	4.6	32.8	32.8	256.6	2.2	2.2	6.4	6.4	6.4	2.3	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	21.6	57.8	57.8	281.6	20.6	20.6	27.7	27.7	27.7	20.8	20.8	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.6	57.8	57.8	281.6	20.6	20.6	27.7	27.7	27.7	20.8	20.8	20.8
LOS by Move:	C	E	E	F	C	C	C	C	C	C	C	C
HCM2kAvgQ:	3	22	26	14	6	8	12	11	12	7	6	7

Note: Queue reported is the number of cars per lane.

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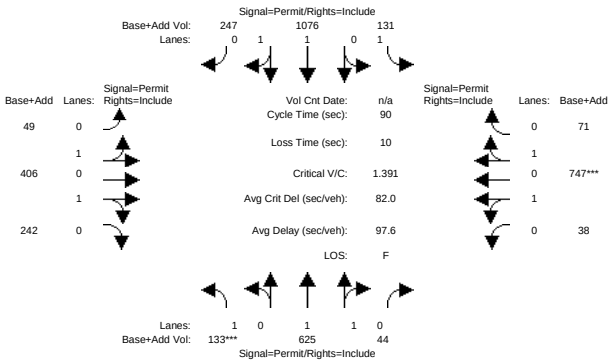
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	133	625	44	131	1076	247	49	406	242	38	747	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	625	44	131	1076	247	49	406	242	38	747	71
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	625	44	131	1076	247	49	406	242	38	747	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	137	644	45	135	1109	255	51	419	249	39	770	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	644	45	135	1109	255	51	419	249	39	770	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	137	644	45	135	1109	255	51	419	249	39	770	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.09	0.59	0.73	0.26	0.58	0.72	0.56	0.50	0.56	0.65	0.59	0.65
Lanes:	1.00	1.89	0.11	1.00	1.69	0.31	0.13	1.22	0.65	0.08	1.77	0.15
Final Sat.:	162	2110	149	501	1849	424	141	1169	697	100	1973	188
Capacity Analysis Module:												
Vol/Sat:	0.85	0.31	0.31	0.27	0.60	0.60	0.36	0.36	0.36	0.39	0.39	0.39
Crit Moves:	****										****	
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Volume/Cap:	1.71	0.69	0.69	0.61	1.35	1.35	0.81	0.81	0.81	0.88	0.88	0.88
Uniform Del:	25.0	20.0	20.0	19.0	25.0	25.0	21.6	21.6	21.6	22.8	22.8	22.8
IncremntDel:	368.4	3.8	3.8	11.7	164	164.2	7.7	7.7	7.7	10.8	10.8	10.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	393.4	23.8	23.8	30.7	189	189.2	29.3	29.3	29.3	33.6	33.6	33.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	393.4	23.8	23.8	30.7	189	189.2	29.3	29.3	29.3	33.6	33.6	33.6
LOS by Move:	F	C	C	C	F	F	C	C	C	C	C	C
HCM2kAvgQ:	12	9	11	4	43	53	12	11	12	15	13	15

Note: Queue reported is the number of cars per lane.

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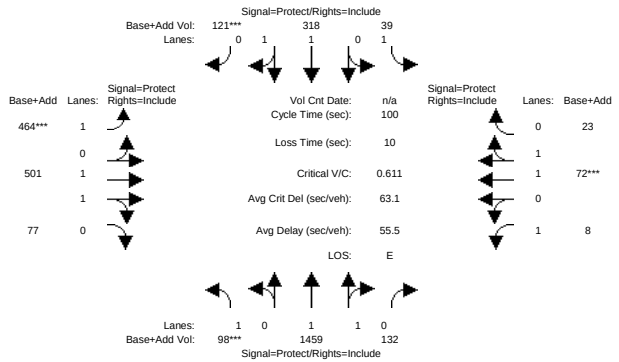
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	23	51	51	4	32	44	31	27	27	12	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	98	1459	132	39	318	121	464	501	77	8	72	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	1459	132	39	318	121	464	501	77	8	72	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	1459	132	39	318	121	464	501	77	8	72	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	100	1489	135	40	324	123	473	511	79	8	73	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	1489	135	40	324	123	473	511	79	8	73	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	1489	135	40	324	123	473	511	79	8	73	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.79	0.79	0.81	0.77	0.77	0.81	0.74	0.74	0.81	0.78	0.78
Lanes:	1.00	1.83	0.17	1.00	1.45	0.55	1.00	1.73	0.27	1.00	1.52	0.48
Final Sat.:	1539	2762	250	1539	2117	806	1539	2452	377	1539	2250	719
Capacity Analysis Module:												
Vol/Sat:	0.06	0.54	0.54	0.03	0.15	0.15	0.31	0.21	0.21	0.01	0.03	0.03
Crit Moves:	****					****	****				****	
Green/Cycle:	0.20	0.54	0.54	0.03	0.38	0.38	0.30	0.23	0.23	0.10	0.03	0.03
Volume/Cap:	0.33	0.99	0.99	0.74	0.40	0.40	1.02	0.90	0.90	0.05	0.95	0.95
Uniform Del:	39.9	26.3	26.3	55.5	26.4	26.4	40.5	43.1	43.1	46.9	55.9	55.9
IncremntDel:	2.8	20.7	20.7	63.3	1.1	1.1	46.7	17.2	17.2	0.6	75.5	75.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.7	47.0	47.0	118.7	27.5	27.5	87.2	60.3	60.3	47.5	131	131.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.7	47.0	47.0	118.7	27.5	27.5	87.2	60.3	60.3	47.5	131	131.4
LOS by Move:	D	D	D	F	C	C	F	E	E	D	F	F
HCM2kAvgQ:	3	37	37	2	6	6	21	12	12	0	4	4

Note: Queue reported is the number of cars per lane.

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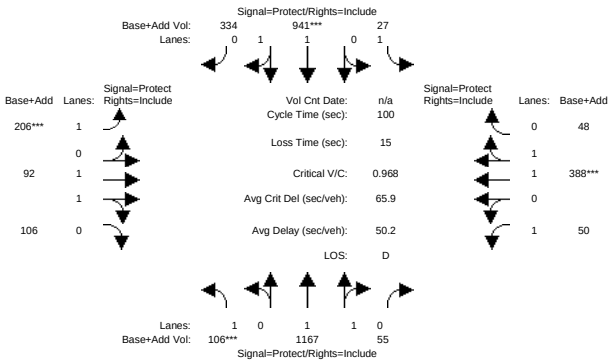
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	5	50	50	5	50	50	15	15	15	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	106	1167	55	27	941	334	206	92	106	50	388	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	1167	55	27	941	334	206	92	106	50	388	48
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	1167	55	27	941	334	206	92	106	50	388	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	112	1228	58	28	991	352	217	97	112	53	408	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	1228	58	28	991	352	217	97	112	53	408	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	1228	58	28	991	352	217	97	112	53	408	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.80	0.81	0.77	0.77	0.81	0.70	0.70	0.81	0.80	0.80
Lanes:	1.00	1.91	0.09	1.00	1.48	0.52	1.00	1.00	1.00	1.00	1.78	0.22
Final Sat.:	1539	2891	136	1539	2162	767	1539	1328	1328	1539	2696	334
Capacity Analysis Module:												
Vol/Sat:	0.07	0.42	0.42	0.02	0.46	0.46	0.14	0.07	0.08	0.03	0.15	0.15
Crit Moves:	****				****		****				****	
Green/Cycle:	0.06	0.51	0.51	0.05	0.50	0.50	0.15	0.17	0.17	0.11	0.14	0.14
Volume/Cap:	1.12	0.83	0.83	0.36	0.92	0.92	0.94	0.43	0.49	0.30	1.12	1.12
Uniform Del:	46.8	20.6	20.6	45.8	23.1	23.1	42.0	37.1	37.5	40.6	43.2	43.2
IncremntDel:	126.1	5.2	5.2	12.3	10.5	10.5	45.3	2.7	4.0	4.3	81.2	81.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	172.9	25.8	25.8	58.1	33.6	33.6	87.3	39.8	41.5	45.0	124	124.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	172.9	25.8	25.8	58.1	33.6	33.6	87.3	39.8	41.5	45.0	124	124.4
LOS by Move:	F	C	C	E	C	C	F	D	D	D	F	F
HCM2kAvgQ:	8	20	20	1	19	19	8	3	3	2	14	14

Note: Queue reported is the number of cars per lane.

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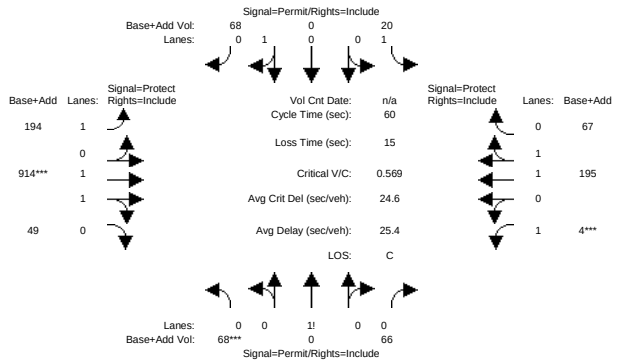
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	68	0	66	20	0	68	194	914	49	4	195	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	0	66	20	0	68	194	914	49	4	195	67
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	0	66	20	0	68	194	914	49	4	195	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	72	0	69	21	0	72	204	962	52	4	205	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	0	69	21	0	72	204	962	52	4	205	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	0	69	21	0	72	204	962	52	4	205	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	1.00	0.63	0.67	1.00	0.72	0.81	0.75	0.75	0.81	0.73	0.73
Lanes:	0.51	0.00	0.49	1.00	0.00	1.00	1.00	1.90	0.10	1.00	1.49	0.51
Final Sat.:	609	0	591	1279	0	1377	1539	2718	146	1539	2067	710
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.02	0.00	0.05	0.13	0.35	0.35	0.00	0.10	0.10
Crit Moves:	****							****		****		
Green/Cycle:	0.17	0.00	0.17	0.17	0.00	0.17	0.22	0.50	0.50	0.17	0.44	0.44
Volume/Cap:	0.70	0.00	0.70	0.10	0.00	0.31	0.60	0.71	0.71	0.02	0.22	0.22
Uniform Del:	35.4	0.0	35.4	31.8	0.0	33.0	31.4	17.4	17.4	31.3	15.4	15.4
IncremntDel:	18.8	0.0	18.8	0.9	0.0	3.5	7.5	3.0	3.0	0.1	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.2	0.0	54.2	32.7	0.0	36.5	38.9	20.4	20.4	31.5	15.8	15.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.2	0.0	54.2	32.7	0.0	36.5	38.9	20.4	20.4	31.5	15.8	15.8
LOS by Move:	D	A	D	C	A	D	D	C	C	C	B	B
HCM2kAvgQ:	5	0	5	1	0	2	6	13	13	0	2	2

Note: Queue reported is the number of cars per lane.

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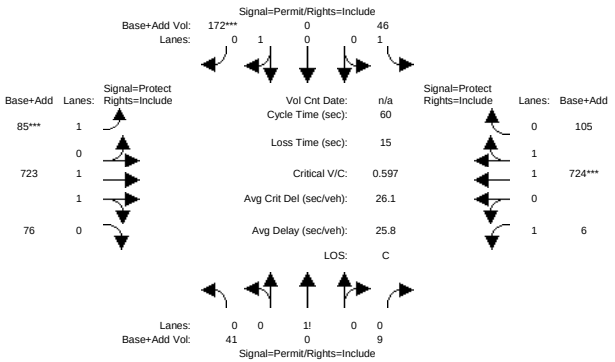
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	15	15	15	15	15	15	15	30	30	15	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	41	0	9	46	0	172	85	723	76	6	724	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	0	9	46	0	172	85	723	76	6	724	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	0	9	46	0	172	85	723	76	6	724	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	43	0	9	48	0	181	89	761	80	6	762	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	0	9	48	0	181	89	761	80	6	762	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	0	9	48	0	181	89	761	80	6	762	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.55	1.00	0.55	0.64	1.00	0.72	0.81	0.75	0.75	0.81	0.75	0.75
Lanes:	0.82	0.00	0.18	1.00	0.00	1.00	1.00	1.81	0.19	1.00	1.75	0.25
Final Sat.:	859	0	188	1212	0	1377	1539	2575	271	1539	2473	359
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.04	0.00	0.13	0.06	0.30	0.30	0.00	0.31	0.31
Crit Moves:						****	****				****	
Green/Cycle:	0.20	0.00	0.20	0.20	0.00	0.20	0.17	0.42	0.42	0.21	0.47	0.47
Volume/Cap:	0.25	0.00	0.25	0.20	0.00	0.66	0.35	0.70	0.70	0.02	0.66	0.66
Uniform Del:	30.4	0.0	30.4	30.0	0.0	33.2	33.2	21.3	21.3	28.1	18.5	18.5
IncremntDel:	2.9	0.0	2.9	1.9	0.0	11.8	3.7	3.4	3.4	0.1	2.6	2.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	33.3	0.0	33.3	31.9	0.0	45.0	36.9	24.7	24.7	28.2	21.0	21.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.3	0.0	33.3	31.9	0.0	45.0	36.9	24.7	24.7	28.2	21.0	21.0
LOS by Move:	C	A	C	C	A	D	D	C	C	C	C	C
HCM2kAvgQ:	1	0	1	1	0	6	3	11	11	0	9	9

Note: Queue reported is the number of cars per lane.

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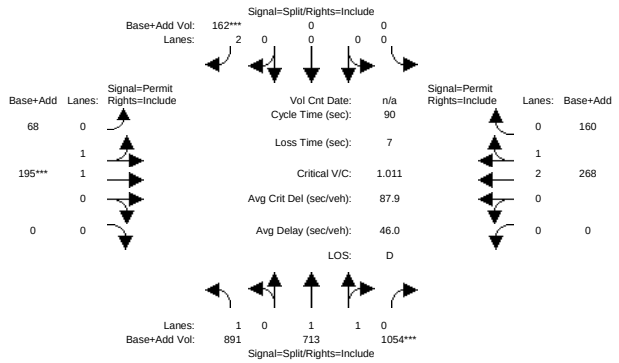
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	58	58	58	10	10	10	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	891	713	1054	0	0	162	68	195	0	0	268	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	891	713	1054	0	0	162	68	195	0	0	268	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	891	713	1054	0	0	162	68	195	0	0	268	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	928	743	1098	0	0	169	71	203	0	0	279	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	928	743	1098	0	0	169	71	203	0	0	279	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	928	743	1098	0	0	169	71	203	0	0	279	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.77	1.00	1.00	0.66	0.61	0.64	1.00	1.00	0.85	0.81
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.53	1.47	0.00	0.00	2.00	1.00
Final Sat.:	2018	1461	1461	0	0	2525	622	1783	0	0	3217	1547
Capacity Analysis Module:												
Vol/Sat:	0.46	0.51	0.75	0.00	0.00	0.07	0.11	0.11	0.00	0.00	0.09	0.11
Crit Moves:			****			****		****				
Green/Cycle:	0.64	0.64	0.64	0.00	0.00	0.11	0.17	0.17	0.00	0.00	0.17	0.17
Volume/Cap:	0.71	0.79	1.17	0.00	0.00	0.60	0.68	0.68	0.00	0.00	0.52	0.65
Uniform Del:	10.5	11.6	16.0	0.0	0.0	38.1	35.3	35.3	0.0	0.0	34.2	35.0
IncremntDel:	3.4	2.8	82.1	0.0	0.0	9.2	9.1	9.1	0.0	0.0	2.3	4.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	13.9	14.4	98.1	0.0	0.0	47.3	44.4	44.4	0.0	0.0	36.5	39.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.9	14.4	98.1	0.0	0.0	47.3	44.4	44.4	0.0	0.0	36.5	39.7
LOS by Move:	B	B	F	A	A	D	D	D	A	A	D	D
HCM2kAvgQ:	18	17	55	0	0	4	4	4	0	0	5	6

Note: Queue reported is the number of cars per lane.

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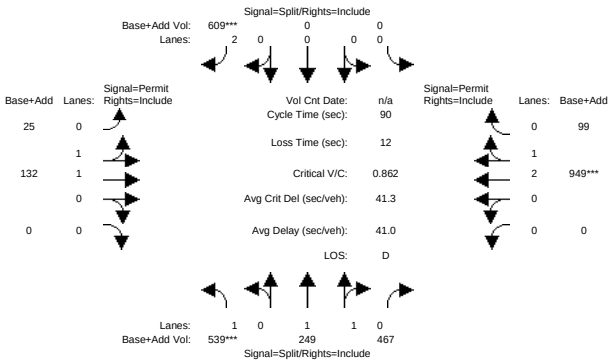
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	29	29	26	26	26	23	23	23	23	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	539	249	467	0	0	609	25	132	0	0	949	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	539	249	467	0	0	609	25	132	0	0	949	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	539	249	467	0	0	609	25	132	0	0	949	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	561	259	486	0	0	634	26	138	0	0	989	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	561	259	486	0	0	634	26	138	0	0	989	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	561	259	486	0	0	634	26	138	0	0	989	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.76	0.84	1.00	1.00	0.66	0.64	0.67	1.00	1.00	0.88	0.85
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.33	1.67	0.00	0.00	2.71	0.29
Final Sat.:	2018	1446	1591	0	0	2525	401	2116	0	0	4547	474
Capacity Analysis Module:												
Vol/Sat:	0.28	0.18	0.31	0.00	0.00	0.25	0.06	0.06	0.00	0.00	0.22	0.22
Crit Moves:	****					****					****	
Green/Cycle:	0.32	0.32	0.32	0.00	0.00	0.29	0.26	0.26	0.00	0.00	0.26	0.26
Volume/Cap:	0.86	0.56	0.95	0.00	0.00	0.87	0.25	0.25	0.00	0.00	0.85	0.85
Uniform Del:	28.6	25.2	29.8	0.0	0.0	30.4	26.7	26.7	0.0	0.0	31.9	31.9
IncremntDel:	14.2	1.7	21.8	0.0	0.0	13.4	1.0	1.0	0.0	0.0	7.2	7.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	42.8	26.9	51.6	0.0	0.0	43.8	27.6	27.6	0.0	0.0	39.1	39.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	26.9	51.6	0.0	0.0	43.8	27.6	27.6	0.0	0.0	39.1	39.1
LOS by Move:	D	C	D	A	A	D	C	C	A	A	D	D
HCM2kAvgQ:	18	7	19	0	0	13	2	2	0	0	13	13

Note: Queue reported is the number of cars per lane.

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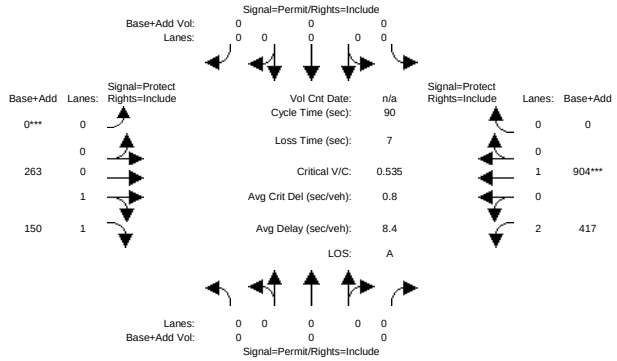
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	31	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	263	150	417	904	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	263	150	417	904	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	263	150	417	904	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	0	0	0	274	156	434	942	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	274	156	434	942	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	274	156	434	942	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	1797	1797	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.09	0.12	0.50	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.26	0.21	0.54	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9	23.1	9.0	0.5	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.1	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.1	0.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.1	0.8	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	7	3	3	5	0

Note: Queue reported is the number of cars per lane.

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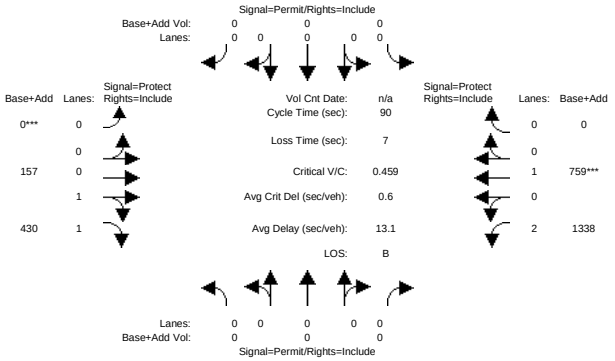
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	157	430	1338	759	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	157	430	1338	759	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	157	430	1338	759	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	167	457	1423	807	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	167	457	1423	807	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	167	457	1423	807	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.47	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	905	2477	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18	0.41	0.42	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.55	0.69	0.46	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.8	25.8	13.3	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	1.0	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.3	0.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.3	0.6	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	8	8	14	3	0

Note: Queue reported is the number of cars per lane.

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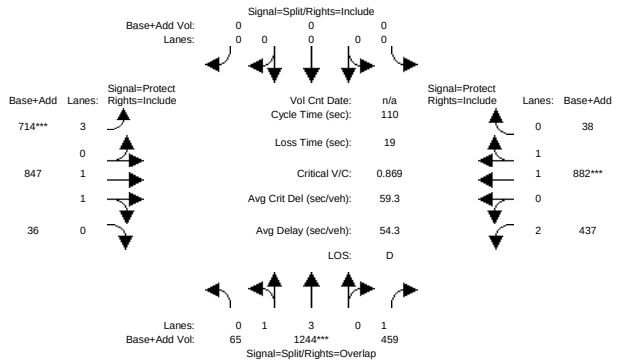
Year 2040 Plus LRDP (2-Lane 16th Street; Mission Bay and Mission Center Only)

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	25	25	25	0	0	0	18	34	34	31	47	47
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	65	1244	459	0	0	0	714	847	36	437	882	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1244	459	0	0	0	714	847	36	437	882	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1244	459	0	0	0	714	847	36	437	882	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	1309	483	0	0	0	752	892	38	460	928	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1309	483	0	0	0	752	892	38	460	928	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1309	483	0	0	0	752	892	38	460	928	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.81	0.80	0.79	0.81	0.80
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	291	5572	1348	0	0	0	4480	2935	125	2987	2933	126
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.36	0.00	0.00	0.00	0.17	0.30	0.30	0.15	0.32	0.32
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.52	0.00	0.00	0.00	0.17	0.31	0.31	0.28	0.43	0.43
Volume/Cap:	1.01	1.01	0.69	0.00	0.00	0.00	1.01	0.98	0.98	0.54	0.74	0.74
Uniform Del:	42.2	42.2	20.0	0.0	0.0	0.0	45.8	37.5	37.5	33.4	26.4	26.4
IncremntDel:	26.0	26.0	5.6	0.0	0.0	0.0	34.7	24.3	24.3	2.5	3.8	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.2	68.2	25.7	0.0	0.0	0.0	80.5	61.9	61.9	35.9	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.2	68.2	25.7	0.0	0.0	0.0	80.5	61.9	61.9	35.9	30.2	30.2
LOS by Move:	E	E	C	A	A	A	F	E	E	D	C	C
HCM2kAvgQ:	13	13	11	0	0	0	9	16	16	7	16	16

Note: Queue reported is the number of cars per lane.

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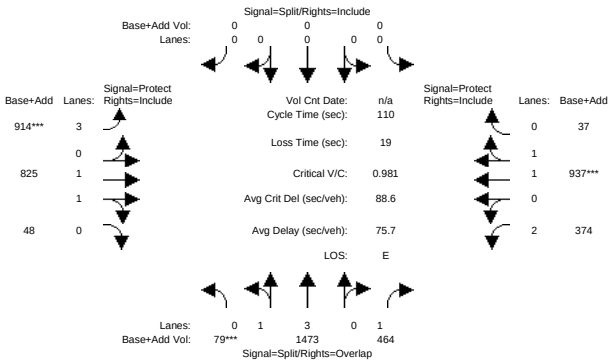
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	79	1473	464	0	0	0	914	825	48	374	937	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1473	464	0	0	0	914	825	48	374	937	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	1473	464	0	0	0	914	825	48	374	937	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	81	1519	478	0	0	0	942	851	49	386	966	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	1519	478	0	0	0	942	851	49	386	966	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	1519	478	0	0	0	942	851	49	386	966	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.71	1.00	1.00	1.00	0.79	0.80	0.80	0.79	0.81	0.80
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.89	0.11	2.00	1.92	0.08
Final Sat.:	298	5565	1350	0	0	0	4480	2885	168	2987	2944	116
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.35	0.00	0.00	0.00	0.21	0.29	0.29	0.13	0.33	0.33
Crit Moves:	****						****				****	
Green/Cycle:	0.35	0.35	0.49	0.00	0.00	0.00	0.16	0.34	0.34	0.13	0.31	0.31
Volume/Cap:	0.77	0.77	0.73	0.00	0.00	0.00	1.29	0.86	0.86	0.98	1.06	1.06
Uniform Del:	31.5	31.5	22.5	0.0	0.0	0.0	46.0	33.8	33.8	47.7	38.0	38.0
IncremntDel:	2.8	2.8	7.0	0.0	0.0	0.0	138.7	9.4	9.4	41.8	47.1	47.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.3	34.3	29.5	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.1	85.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.3	34.3	29.5	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.1	85.1
LOS by Move:	C	C	C	A	A	A	F	D	D	F	F	F
HCM2kAvgQ:	12	12	12	0	0	0	19	14	14	11	26	26

Note: Queue reported is the number of cars per lane.

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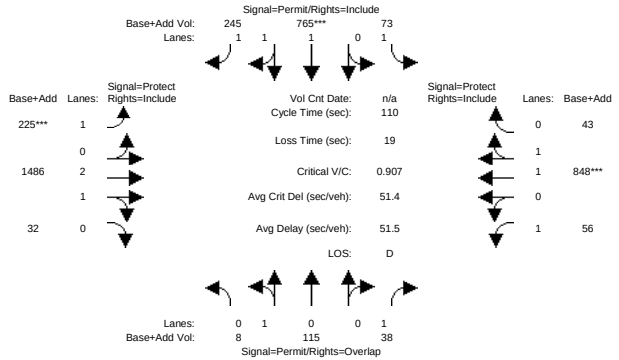
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	35	35	35	35	35	35	19	41	41	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	115	38	73	765	245	225	1486	32	56	848	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	115	38	73	765	245	225	1486	32	56	848	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	115	38	73	765	245	225	1486	32	56	848	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	9	124	41	78	823	263	242	1598	34	60	912	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	124	41	78	823	263	242	1598	34	60	912	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	124	41	78	823	263	242	1598	34	60	912	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.69	0.54	0.78	0.77	0.81	0.77	0.77	0.81	0.80	0.80
Lanes:	0.07	0.93	1.00	1.00	2.00	1.00	1.00	2.94	0.06	1.00	1.90	0.10
Final Sat.:	99	1423	1312	1032	2968	1456	1539	4275	92	1539	2882	146
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.03	0.08	0.28	0.18	0.16	0.37	0.37	0.04	0.32	0.32
Crit Moves:					****		****				****	
Green/Cycle:	0.32	0.32	0.45	0.32	0.32	0.32	0.17	0.37	0.37	0.14	0.34	0.34
Volume/Cap:	0.27	0.27	0.07	0.24	0.87	0.57	0.91	1.00	1.00	0.29	0.94	0.94
Uniform Del:	28.0	28.0	16.9	27.7	35.4	31.2	44.7	34.5	34.5	42.7	35.4	35.4
IncremntDel:	1.4	1.4	0.2	1.7	8.5	1.2	36.1	23.0	23.0	3.4	17.1	17.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	29.4	29.4	17.1	29.4	43.9	32.5	80.8	57.5	57.5	46.1	52.5	52.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	29.4	17.1	29.4	43.9	32.5	80.8	57.5	57.5	46.1	52.5	52.5
LOS by Move:	C	C	B	C	D	C	F	E	E	D	D	D
HCM2kAvgQ:	3	3	1	2	17	8	11	27	27	2	19	19

Note: Queue reported is the number of cars per lane.

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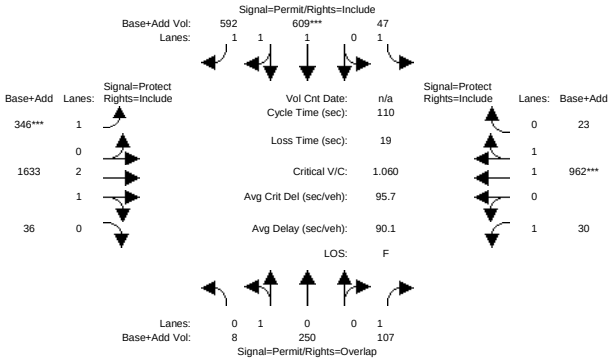
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	250	107	47	609	592	346	1633	36	30	962	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	250	107	47	609	592	346	1633	36	30	962	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	250	107	47	609	592	346	1633	36	30	962	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	8	258	110	48	628	610	357	1684	37	31	992	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	258	110	48	628	610	357	1684	37	31	992	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	258	110	48	628	610	357	1684	37	31	992	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.84	0.80	0.59	0.37	0.75	0.64	0.81	0.80	0.77	0.81	0.80
Lanes:	0.03	0.97	1.00	1.00	1.40	1.60	1.00	2.93	0.07	1.00	1.95	0.05
Final Sat.:	49	1539	1126	696	1995	1940	1539	4484	99	1539	2998	72
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.10	0.07	0.31	0.31	0.23	0.38	0.38	0.02	0.33	0.33
Crit Moves:					****		****				****	
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.47	0.47	0.20	0.20	0.89	0.89	1.70	1.12	1.12	0.15	0.98	0.98
Uniform Del:	27.5	27.5	15.8	24.6	33.4	33.4	47.5	36.5	36.5	41.9	36.2	36.2
IncremntDel:	2.8	2.8	0.8	1.8	8.7	8.7	334.2	61.8	61.8	1.5	24.3	24.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.4	30.4	16.6	26.4	42.1	42.1	381.7	98.3	98.3	43.3	60.5	60.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	30.4	16.6	26.4	42.1	42.1	381.7	98.3	98.3	43.3	60.5	60.5
LOS by Move:	C	C	B	C	D	D	F	F	F	D	E	E
HCM2kAvgQ:	7	7	2	1	18	16	31	33	32	1	18	18

Note: Queue reported is the number of cars per lane.

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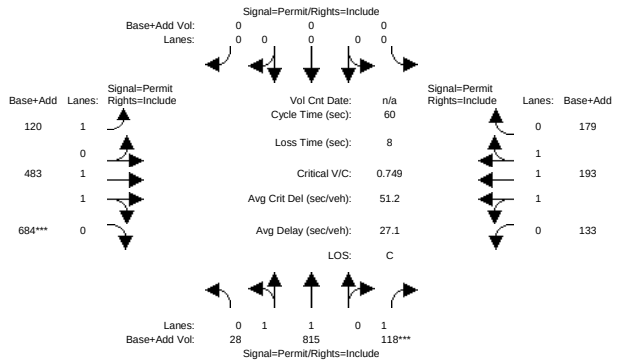
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	21	0	21	0	0	31	31	31	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	815	118	0	0	0	120	483	684	133	193	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	815	118	0	0	0	120	483	684	133	193	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	815	118	0	0	0	120	483	684	133	193	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	882	128	0	0	0	130	523	740	144	209	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	882	128	0	0	0	130	523	740	144	209	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	882	128	0	0	0	130	523	740	144	209	194
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.37	0.74	0.72	0.47	0.47	0.47
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.82	1.18	1.00
Final Sat.:	102	2965	1199	0	0	0	710	1404	1364	733	1064	890
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.11	0.00	0.00	0.00	0.18	0.37	0.54	0.20	0.20	0.22
Crit Moves:			****						****			
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.85	0.85	0.30	0.00	0.00	0.00	0.35	0.72	1.05	0.38	0.38	0.42
Uniform Del:	18.0	18.0	14.2	0.0	0.0	0.0	8.6	11.2	14.5	8.7	8.7	9.0
IncremntDel:	8.4	8.4	1.9	0.0	0.0	0.0	2.7	2.6	40.2	0.8	0.8	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.5	26.5	16.1	0.0	0.0	0.0	11.2	13.8	54.7	9.5	9.5	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.5	26.5	16.1	0.0	0.0	0.0	11.2	13.8	54.7	9.5	9.5	10.0
LOS by Move:	C	C	B	A	A	A	B	B	D	A	A	A
HCM2kAvgQ:	11	11	2	0	0	0	2	9	25	3	3	3

Note: Queue reported is the number of cars per lane.

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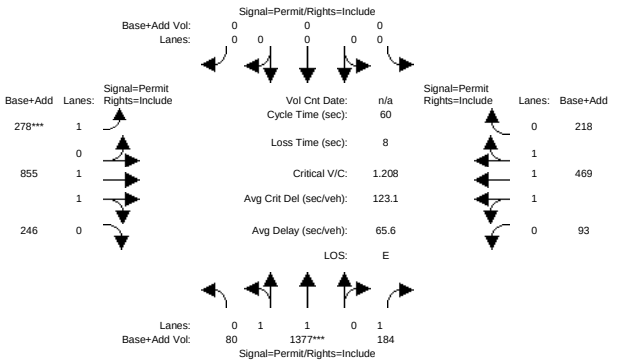
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	80	1377	184	0	0	0	278	855	246	93	469	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	1377	184	0	0	0	278	855	246	93	469	218
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	1377	184	0	0	0	278	855	246	93	469	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	1414	189	0	0	0	285	878	253	95	482	224
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	1414	189	0	0	0	285	878	253	95	482	224
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	1414	189	0	0	0	285	878	253	95	482	224
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.63	1.00	1.00	1.00	0.27	0.78	0.77	0.50	0.50	0.50
Lanes:	0.11	1.89	1.00	0.00	0.00	0.00	1.00	1.55	0.45	0.36	1.80	0.84
Final Sat.:	168	2889	1200	0	0	0	512	2306	663	341	1720	799
Capacity Analysis Module:												
Vol/Sat:	0.49	0.49	0.16	0.00	0.00	0.00	0.56	0.38	0.38	0.28	0.28	0.28
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.00	0.00	0.00	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	1.21	1.21	0.39	0.00	0.00	0.00	1.21	0.82	0.82	0.61	0.61	0.61
Uniform Del:	17.9	17.9	12.6	0.0	0.0	0.0	16.1	14.0	14.0	12.1	12.1	12.1
IncremntDel:	101.5	102	2.3	0.0	0.0	0.0	126.5	5.8	5.8	2.1	2.1	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	119.4	119	14.9	0.0	0.0	0.0	142.6	19.8	19.8	14.2	14.2	14.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	119.4	119	14.9	0.0	0.0	0.0	142.6	19.8	19.8	14.2	14.2	14.2
LOS by Move:	F	F	B	A	A	A	F	B	B	B	B	B
HCM2kAvgQ:	35	35	3	0	0	0	15	12	12	5	5	5

Note: Queue reported is the number of cars per lane.

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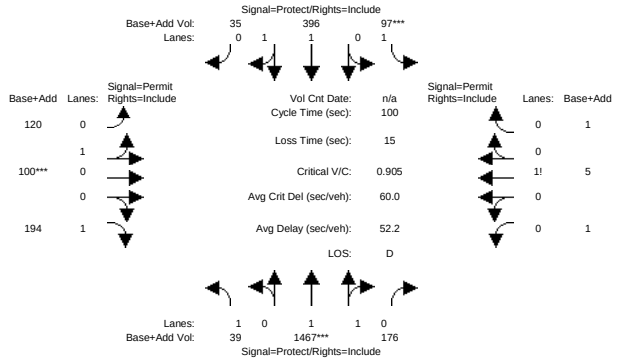
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	50	50	10	38	38	25	25	25	25	25	25
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	39	1467	176	97	396	35	120	100	194	1	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	1467	176	97	396	35	120	100	194	1	5	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	1467	176	97	396	35	120	100	194	1	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	41	1544	185	102	417	37	126	105	204	1	5	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	1544	185	102	417	37	126	105	204	1	5	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	1544	185	102	417	37	126	105	204	1	5	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.88	0.79	0.81	0.80	0.80	0.67	0.70	0.68	0.81	0.81	0.81
Lanes:	1.00	1.77	0.23	1.00	1.84	0.16	0.55	0.45	1.00	0.14	0.72	0.14
Final Sat.:	1539	2942	353	1539	2794	247	708	590	1295	220	1101	220
Capacity Analysis Module:												
Vol/Sat:	0.03	0.52	0.52	0.07	0.15	0.15	0.18	0.18	0.16	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.22	0.50	0.50	0.10	0.38	0.38	0.25	0.25	0.25	0.25	0.25	0.25
Volume/Cap:	0.12	1.05	1.05	0.66	0.39	0.39	0.71	0.71	0.63	0.02	0.02	0.02
Uniform Del:	31.3	25.0	25.0	43.4	22.6	22.6	34.2	34.2	33.4	28.3	28.3	28.3
IncremntDel:	0.7	36.5	36.5	20.3	1.0	1.0	12.6	12.6	9.0	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.0	61.5	61.5	63.7	23.6	23.6	46.8	46.8	42.4	28.4	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.0	61.5	61.5	63.7	23.6	23.6	46.8	46.8	42.4	28.4	28.4	28.4
LOS by Move:	C	E	E	E	C	C	D	D	D	C	C	C
HCM2kAvgQ:	1	33	30	3	5	5	7	7	6	0	0	0

Note: Queue reported is the number of cars per lane.

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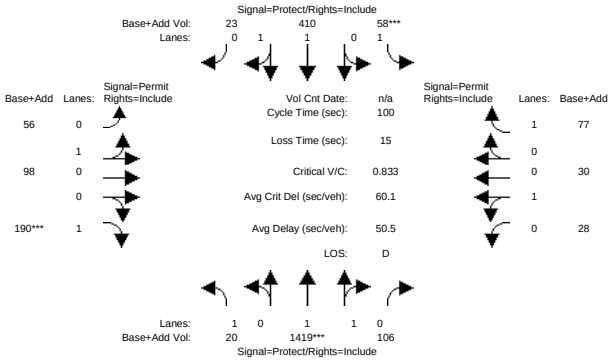
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	48	48	8	35	35	29	29	29	29	29	29
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	1419	106	58	410	23	56	98	190	28	30	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	1419	106	58	410	23	56	98	190	28	30	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1419	106	58	410	23	56	98	190	28	30	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	1494	112	61	432	24	59	103	200	29	32	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1494	112	61	432	24	59	103	200	29	32	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1494	112	61	432	24	59	103	200	29	32	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.84	0.79	0.81	0.80	0.80	0.71	0.74	0.64	0.68	0.71	0.64
Lanes:	1.00	1.85	0.15	1.00	1.89	0.11	0.37	0.63	1.00	0.49	0.51	1.00
Final Sat.:	1539	2966	222	1539	2891	162	504	883	1213	639	685	1213
Capacity Analysis Module:												
Vol/Sat:	0.01	0.50	0.50	0.04	0.15	0.15	0.12	0.12	0.16	0.05	0.05	0.07
Crit Moves:		****		****					****			
Green/Cycle:	0.20	0.48	0.48	0.08	0.36	0.36	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.07	1.05	1.05	0.50	0.42	0.42	0.40	0.40	0.57	0.16	0.16	0.23
Uniform Del:	32.1	26.0	26.0	44.1	24.3	24.3	28.5	28.5	30.2	26.4	26.4	27.0
IncremntDel:	0.4	37.1	37.1	13.6	1.2	1.2	3.0	3.0	6.5	0.9	0.9	1.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.6	63.1	63.1	57.6	25.5	25.5	31.5	31.5	36.7	27.3	27.3	28.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	63.1	63.1	57.6	25.5	25.5	31.5	31.5	36.7	27.3	27.3	28.5
LOS by Move:	C	E	E	E	C	C	C	C	D	C	C	C
HCM2kAvgQ:	0	30	29	2	6	6	4	4	5	1	1	2

Note: Queue reported is the number of cars per lane.

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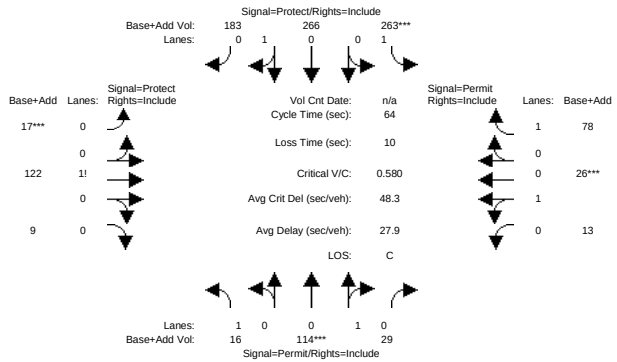
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	21	21	14	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	16	114	29	263	266	183	17	122	9	13	26	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	114	29	263	266	183	17	122	9	13	26	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	114	29	263	266	183	17	122	9	13	26	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	19	134	34	310	313	216	20	144	11	15	31	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	134	34	310	313	216	20	144	11	15	31	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	134	34	310	313	216	20	144	11	15	31	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.21	0.66	0.65	0.81	0.80	0.79	0.74	0.74	0.73	0.82	0.84	0.67
Lanes:	1.00	0.79	0.21	1.00	0.59	0.41	0.11	0.83	0.06	0.34	0.66	1.00
Final Sat.:	397	999	254	1539	895	615	161	1152	85	528	1055	1274
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.13	0.20	0.35	0.35	0.12	0.12	0.12	0.03	0.03	0.07
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.14	0.41	0.41	0.92	0.64	0.64	0.89	0.42	0.42	0.19	0.19	0.46
Uniform Del:	15.2	16.7	16.7	24.4	10.1	10.1	27.0	18.1	18.1	23.5	23.5	24.5
IncremntDel:	2.3	3.0	3.0	32.3	3.8	3.8	40.2	3.1	3.1	1.7	1.7	7.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.5	19.7	19.7	56.8	13.9	13.9	67.2	21.2	21.2	25.1	25.1	32.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.5	19.7	19.7	56.8	13.9	13.9	67.2	21.2	21.2	25.1	25.1	32.1
LOS by Move:	B	B	B	E	B	B	E	C	C	C	C	C
HCM2kAvgQ:	0	3	3	7	7	7	2	3	1	1	1	2

Note: Queue reported is the number of cars per lane.

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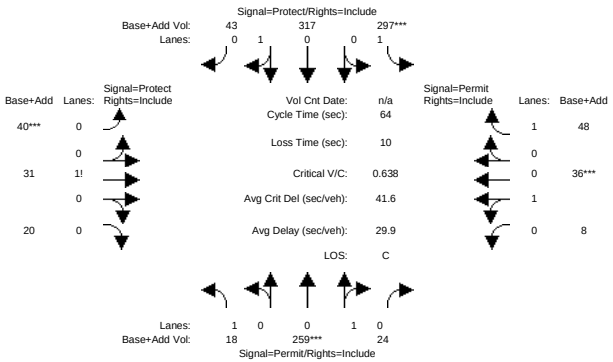
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	21	21	14	35	35	9	19	19	10	10	10
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	18	259	24	297	317	43	40	31	20	8	36	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	259	24	297	317	43	40	31	20	8	36	48
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	259	24	297	317	43	40	31	20	8	36	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	19	273	25	313	334	45	42	33	21	8	38	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	273	25	313	334	45	42	33	21	8	38	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	273	25	313	334	45	42	33	21	8	38	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.29	0.67	0.65	0.81	0.84	0.82	0.71	0.71	0.65	0.80	0.84	0.66
Lanes:	1.00	0.91	0.09	1.00	0.88	0.12	0.44	0.33	0.23	0.19	0.81	1.00
Final Sat.:	549	1168	108	1539	1397	190	580	450	290	288	1296	1259
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.23	0.20	0.24	0.24	0.07	0.07	0.07	0.03	0.03	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.11	0.71	0.71	0.93	0.44	0.44	0.52	0.24	0.24	0.19	0.19	0.26
Uniform Del:	15.0	18.8	18.8	24.5	8.6	8.6	25.5	17.1	17.1	23.5	23.5	23.7
IncremntDel:	1.2	9.8	9.8	33.8	1.6	1.6	9.9	1.5	1.5	1.7	1.7	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	16.1	28.7	28.7	58.3	10.2	10.2	35.4	18.5	18.5	25.1	25.1	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.1	28.7	28.7	58.3	10.2	10.2	35.4	18.5	18.5	25.1	25.1	26.9
LOS by Move:	B	C	C	E	B	B	D	B	B	C	C	C
HCM2kAvgQ:	0	7	7	7	4	4	2	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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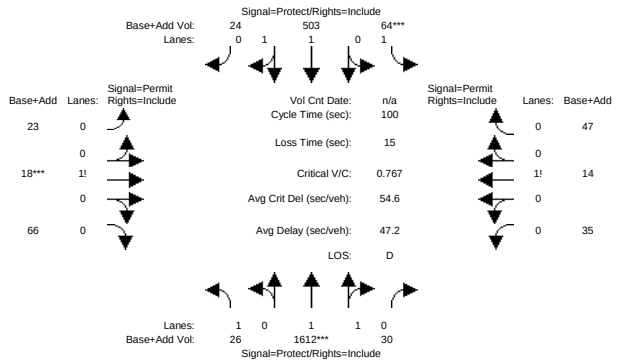
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	18	50	50	5	37	37	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	26	1612	30	64	503	24	23	18	66	35	14	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	1612	30	64	503	24	23	18	66	35	14	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	1612	30	64	503	24	23	18	66	35	14	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	27	1697	32	67	529	25	24	19	69	37	15	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1697	32	67	529	25	24	19	69	37	15	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1697	32	67	529	25	24	19	69	37	15	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.63	0.64	0.62	0.68	0.69	0.68
Lanes:	1.00	1.96	0.04	1.00	1.91	0.09	0.21	0.16	0.63	0.36	0.14	0.50
Final Sat.:	1539	3309	62	1539	2918	139	255	199	731	472	189	634
Capacity Analysis Module:												
Vol/Sat:	0.02	0.51	0.51	0.04	0.18	0.18	0.10	0.10	0.10	0.08	0.08	0.08
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.50	0.50	0.05	0.37	0.37	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.10	1.03	1.03	0.88	0.49	0.49	0.32	0.32	0.32	0.26	0.26	0.26
Uniform Del:	34.2	25.0	25.0	47.2	24.2	24.2	27.1	27.1	27.1	26.6	26.6	26.6
IncremntDel:	0.7	28.7	28.7	71.9	1.5	1.5	2.3	2.3	2.3	1.6	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.9	53.7	53.7	119.1	25.8	25.8	29.4	29.4	29.4	28.2	28.2	28.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	53.7	53.7	119.1	25.8	25.8	29.4	29.4	29.4	28.2	28.2	28.2
LOS by Move:	C	D	D	F	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	38	35	3	7	7	3	3	3	2	3	2

Note: Queue reported is the number of cars per lane.

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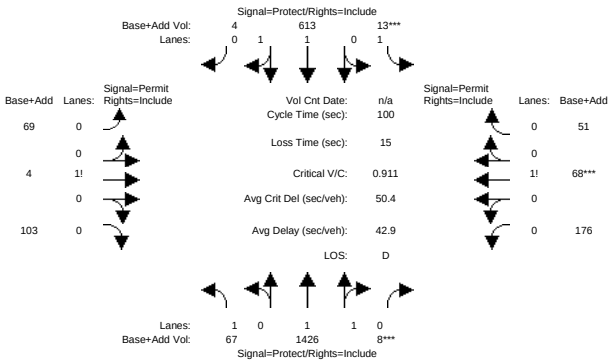
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	9	47	47	5	43	43	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	67	1426	8	13	613	4	69	4	103	176	68	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	1426	8	13	613	4	69	4	103	176	68	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	1426	8	13	613	4	69	4	103	176	68	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	71	1501	8	14	645	4	73	4	108	185	72	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	1501	8	14	645	4	73	4	108	185	72	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	1501	8	14	645	4	73	4	108	185	72	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.81	0.52	0.54	0.47	0.54	0.58	0.56
Lanes:	1.00	1.99	0.01	1.00	1.99	0.01	0.37	0.02	0.61	0.61	0.22	0.17
Final Sat.:	1539	3211	18	1539	3056	20	366	21	546	622	240	180
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.01	0.21	0.21	0.20	0.20	0.20	0.30	0.30	0.30
Crit Moves:			****	****							****	
Green/Cycle:	0.09	0.47	0.47	0.05	0.43	0.43	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.51	0.99	0.99	0.18	0.49	0.49	0.60	0.60	0.60	0.90	0.90	0.90
Uniform Del:	43.4	26.4	26.4	45.5	20.6	20.6	28.0	28.0	28.0	32.0	32.0	32.0
IncremntDel:	12.7	21.9	21.9	5.0	1.3	1.3	8.4	8.4	8.4	29.1	29.1	29.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.1	48.3	48.3	50.5	21.9	21.9	36.4	36.4	36.4	61.0	61.0	61.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.1	48.3	48.3	50.5	21.9	21.9	36.4	36.4	36.4	61.0	61.0	61.0
LOS by Move:	E	D	D	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	3	32	30	0	8	8	6	6	6	12	13	13

Note: Queue reported is the number of cars per lane.

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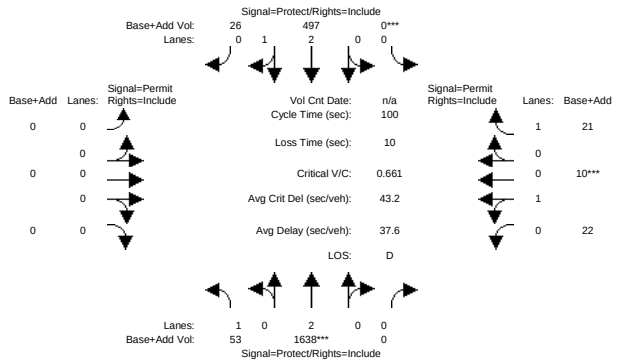
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	53	1638	0	0	497	26	0	0	0	22	10	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	1638	0	0	497	26	0	0	0	22	10	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	1638	0	0	497	26	0	0	0	22	10	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	57	1759	0	0	534	28	0	0	0	24	11	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	1759	0	0	534	28	0	0	0	24	11	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	1759	0	0	534	28	0	0	0	24	11	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.78	0.80	0.62
Lanes:	1.00	2.00	0.00	0.00	2.85	0.15	0.00	0.00	0.00	0.69	0.31	1.00
Final Sat.:	1539	3079	0	0	4174	218	0	0	0	1022	465	1184
Capacity Analysis Module:												
Vol/Sat:	0.04	0.57	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.02	0.02	0.02
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.24	1.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.07	0.07	0.06
Uniform Del:	37.2	21.5	0.0	0.0	19.5	19.5	0.0	0.0	0.0	23.0	23.0	22.9
IncremntDel:	2.4	22.1	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	39.6	43.6	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.3	23.3	23.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.6	43.6	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.3	23.3	23.2
LOS by Move:	D	D	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	1	29	0	0	4	4	0	0	0	1	1	0

Note: Queue reported is the number of cars per lane.

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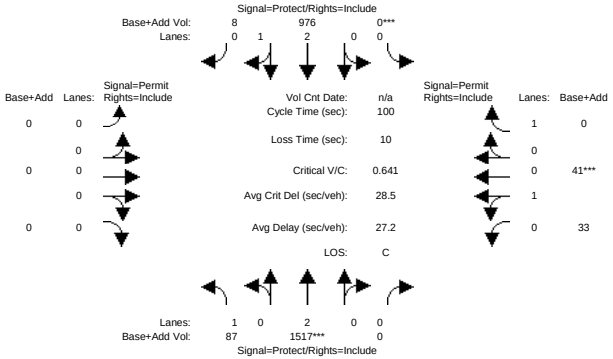
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	87	1517	0	0	976	8	0	0	0	33	41	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	1517	0	0	976	8	0	0	0	33	41	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	1517	0	0	976	8	0	0	0	33	41	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	93	1614	0	0	1038	9	0	0	0	35	44	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	1614	0	0	1038	9	0	0	0	35	44	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	1614	0	0	1038	9	0	0	0	35	44	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.78	0.77	1.00	1.00	1.00	0.76	0.80	1.00
Lanes:	1.00	2.00	0.00	0.00	2.98	0.02	0.00	0.00	0.00	0.46	0.54	1.00
Final Sat.:	1539	3079	0	0	4384	36	0	0	0	662	822	1900
Capacity Analysis Module:												
Vol/Sat:	0.06	0.52	0.00	0.00	0.24	0.24	0.00	0.00	0.00	0.05	0.05	0.00
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.00
Volume/Cap:	0.39	0.92	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.16	0.16	0.00
Uniform Del:	38.1	19.4	0.0	0.0	22.3	22.3	0.0	0.0	0.0	23.7	23.7	0.0
IncremntDel:	4.8	9.3	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
Delay/Veh:	42.9	28.8	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.9	28.8	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
LOS by Move:	D	C	A	A	C	C	A	A	A	C	C	A
HCM2kAvgQ:	2	24	0	0	9	9	0	0	0	2	2	0

Note: Queue reported is the number of cars per lane.

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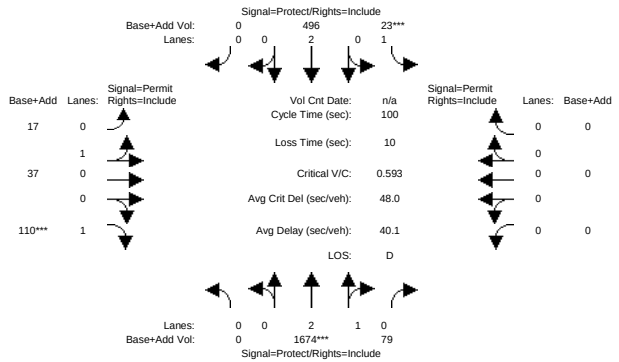
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1674	79	23	496	0	17	37	110	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1674	79	23	496	0	17	37	110	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1674	79	23	496	0	17	37	110	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1758	83	24	521	0	18	39	116	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1758	83	24	521	0	18	39	116	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1758	83	24	521	0	18	39	116	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.83	0.84	0.61	1.00	1.00	1.00
Lanes:	0.00	2.86	0.14	1.00	2.00	0.00	0.32	0.68	1.00	0.00	0.00	0.00
Final Sat.:	0	4195	198	1539	3079	0	500	1088	1168	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.42	0.02	0.17	0.00	0.04	0.04	0.10	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.42	0.42	0.15	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	1.00	1.00	0.10	0.30	0.00	0.11	0.11	0.30	0.00	0.00	0.00
Uniform Del:	0.0	29.0	29.0	36.7	11.1	0.0	23.3	23.3	24.9	0.0	0.0	0.0
IncremntDel:	0.0	20.5	20.5	0.9	0.4	0.0	0.4	0.4	2.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	49.5	49.5	37.6	11.6	0.0	23.7	23.7	26.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	49.5	49.5	37.6	11.6	0.0	23.7	23.7	26.9	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	28	28	1	4	0	1	1	3	0	0	0

Note: Queue reported is the number of cars per lane.

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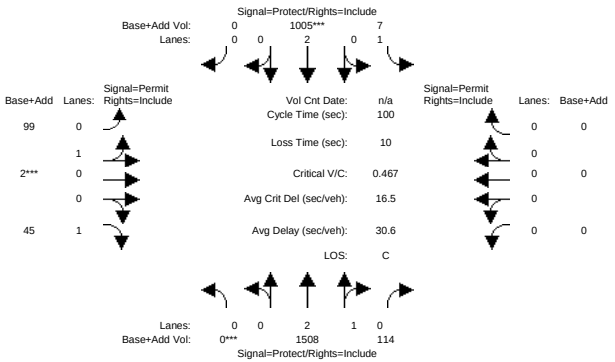
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1508	114	7	1005	0	99	2	45	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1508	114	7	1005	0	99	2	45	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1508	114	7	1005	0	99	2	45	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1587	120	7	1058	0	104	2	47	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1587	120	7	1058	0	104	2	47	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1587	120	7	1058	0	104	2	47	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.73	0.77	0.63	1.00	1.00	1.00
Lanes:	0.00	2.79	0.21	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	4071	308	1539	3079	0	1364	28	1188	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.00	0.34	0.00	0.08	0.08	0.04	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.41	0.41	0.16	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.95	0.95	0.03	0.60	0.00	0.23	0.23	0.12	0.00	0.00	0.00
Uniform Del:	0.0	28.4	28.4	35.6	14.1	0.0	24.3	24.3	23.4	0.0	0.0	0.0
IncremntDel:	0.0	11.9	11.9	0.2	1.5	0.0	1.2	1.2	0.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	40.3	40.3	35.8	15.6	0.0	25.5	25.5	24.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.3	40.3	35.8	15.6	0.0	25.5	25.5	24.0	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	24	24	0	12	0	2	3	1	0	0	0

Note: Queue reported is the number of cars per lane.

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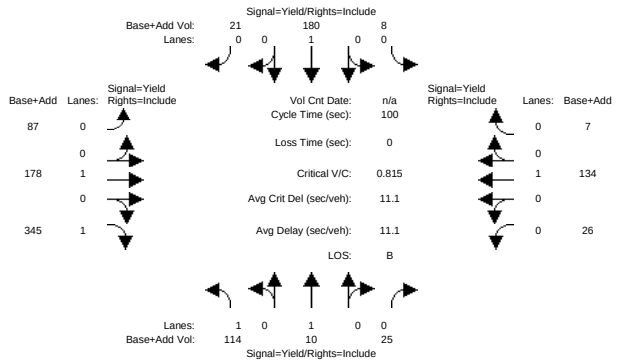
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	114	10	25	8	180	21	87	178	345	26	134	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	10	25	8	180	21	87	178	345	26	134	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	10	25	8	180	21	87	178	345	26	134	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	158	14	35	11	250	29	121	247	479	36	186	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	14	35	11	250	29	121	247	479	36	186	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	14	35	11	250	29	121	247	479	36	186	10
PCE Module:												
AutoPCE:	158	14	35	11	250	29	121	247	479	36	186	10
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	158	14	35	11	250	29	121	247	479	36	186	10
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	379			381			297			293		
MaxVolume:	995			995			1040			1042		
PedVolume:	0			0			0			0		
AdjMaxVol:	995			995			1040			1042		
ApproachVol:	207			290			847			232		
ApproachV/C:	0.21			0.29			0.82			0.22		
ApproachDel:	4.6			5.1			16.6			4.4		
ApproachLOS:	A			A			C			A		
Queue:	0.8			1.2			9.5			0.9		

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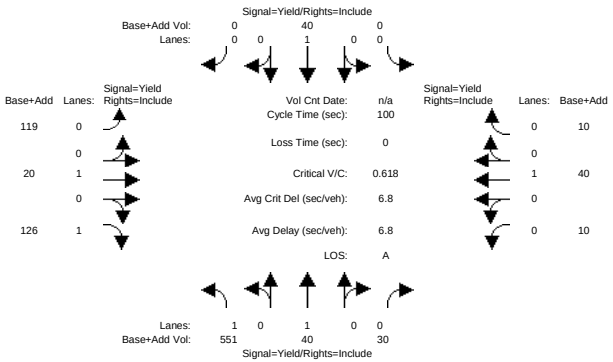
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	551	40	30	0	40	0	119	20	126	10	40	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	40	30	0	40	0	119	20	126	10	40	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	551	40	30	0	40	0	119	20	126	10	40	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	612	44	33	0	44	0	132	22	140	11	44	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Module:												
AutoPCE:	612	44	33	0	44	0	132	22	140	11	44	11
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	612	44	33	0	44	0	132	22	140	11	44	11
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	154			668			56			789		
MaxVolume:	1117			839			1170			774		
PedVolume:	0			0			0			0		
AdjMaxVol:	1117			839			1170			774		
ApproachVol:	690			44			294			67		
ApproachV/C:	0.62			0.05			0.25			0.09		
ApproachDel:	8.3			4.5			4.1			5.1		
ApproachLOS:	A			A			A			A		
Queue:	4.5			0.2			1.0			0.3		

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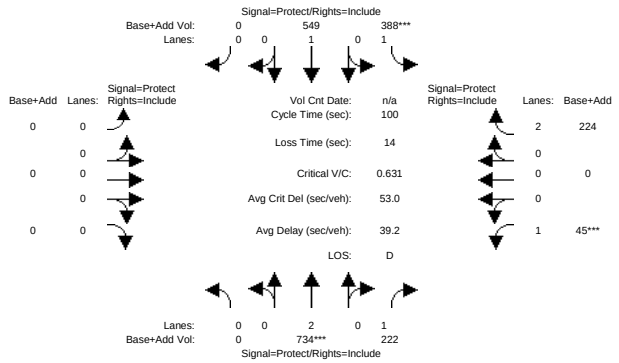
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	734	222	388	549	0	0	0	0	45	0	224
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	734	222	388	549	0	0	0	0	45	0	224
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	734	222	388	549	0	0	0	0	45	0	224
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	766	232	405	573	0	0	0	0	47	0	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	766	232	405	573	0	0	0	0	47	0	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	766	232	405	573	0	0	0	0	47	0	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.57	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.53
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	1079	1539	1620	0	0	0	0	1539	0	2000
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.21	0.26	0.35	0.00	0.00	0.00	0.00	0.03	0.00	0.12
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.36	0.36	0.25	0.61	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.69	0.60	1.05	0.58	0.00	0.00	0.00	0.00	0.12	0.00	0.47
Uniform Del:	0.0	27.3	26.1	37.5	11.8	0.0	0.0	0.0	0.0	29.0	0.0	31.8
IncremntDel:	0.0	3.5	6.6	60.3	2.5	0.0	0.0	0.0	0.0	0.6	0.0	3.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	30.8	32.7	97.8	14.2	0.0	0.0	0.0	0.0	29.7	0.0	35.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.8	32.7	97.8	14.2	0.0	0.0	0.0	0.0	29.7	0.0	35.0
LOS by Move:	A	C	C	F	B	A	A	A	A	C	A	C
HCM2kAvgQ:	0	12	7	20	11	0	0	0	0	1	0	4

Note: Queue reported is the number of cars per lane.

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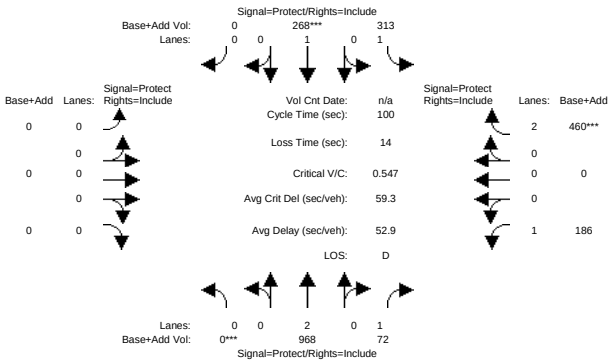
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	0	32	32	14	57	0	0	0	0	29	0	29
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	968	72	313	268	0	0	0	0	186	0	460
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	968	72	313	268	0	0	0	0	186	0	460
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	968	72	313	268	0	0	0	0	186	0	460
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	998	74	323	276	0	0	0	0	192	0	474
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	998	74	323	276	0	0	0	0	192	0	474
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	998	74	323	276	0	0	0	0	192	0	474
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.41	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.42
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	784	1539	1620	0	0	0	0	1539	0	1580
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.09	0.21	0.17	0.00	0.00	0.00	0.00	0.12	0.00	0.30
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.35	0.35	0.22	0.57	0.00	0.00	0.00	0.00	0.29	0.00	0.29
Volume/Cap:	0.00	0.94	0.27	0.94	0.30	0.00	0.00	0.00	0.00	0.43	0.00	1.04
Uniform Del:	0.0	31.6	23.6	38.1	11.1	0.0	0.0	0.0	0.0	28.8	0.0	35.5
IncremntDel:	0.0	16.0	2.5	34.7	0.8	0.0	0.0	0.0	0.0	3.0	0.0	51.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	47.6	26.1	72.8	12.0	0.0	0.0	0.0	0.0	31.8	0.0	86.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	47.6	26.1	72.8	12.0	0.0	0.0	0.0	0.0	31.8	0.0	86.9
LOS by Move:	A	D	C	E	B	A	A	A	A	C	A	F
HCM2kAvgQ:	0	20	2	14	4	0	0	0	0	5	0	14

Note: Queue reported is the number of cars per lane.

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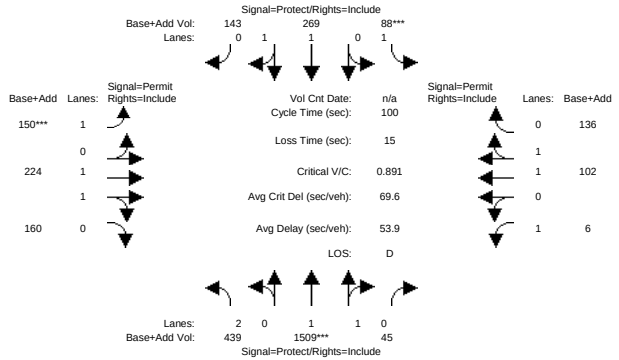
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	19	50	50	9	36	36	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	439	1509	45	88	269	143	150	224	160	6	102	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	439	1509	45	88	269	143	150	224	160	6	102	136
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	439	1509	45	88	269	143	150	224	160	6	102	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	456	1569	47	91	280	149	156	233	166	6	106	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	1569	47	91	280	149	156	233	166	6	106	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	456	1569	47	91	280	149	156	233	166	6	106	141
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.77	0.76	0.47	0.71	0.70	0.35	0.69	0.67
Lanes:	2.00	1.94	0.06	1.00	1.30	0.70	1.00	1.16	0.84	1.00	1.00	1.00
Final Sat.:	2987	2978	89	1539	1897	1008	898	1563	1116	674	1319	1278
Capacity Analysis Module:												
Vol/Sat:	0.15	0.53	0.53	0.06	0.15	0.15	0.17	0.15	0.15	0.01	0.08	0.11
Crit Moves:		****		****			****					
Green/Cycle:	0.20	0.49	0.49	0.09	0.38	0.38	0.27	0.27	0.27	0.27	0.27	0.27
Volume/Cap:	0.76	1.07	1.07	0.67	0.39	0.39	0.63	0.54	0.54	0.03	0.29	0.40
Uniform Del:	38.5	26.0	26.0	45.1	23.1	23.1	32.5	31.5	31.5	27.1	29.2	30.2
IncremntDel:	9.0	46.1	46.1	23.6	1.0	1.0	11.7	2.9	2.9	0.3	0.9	2.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.6	72.1	72.1	68.6	24.1	24.1	44.2	34.4	34.4	27.4	30.1	32.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.6	72.1	72.1	68.6	24.1	24.1	44.2	34.4	34.4	27.4	30.1	32.1
LOS by Move:	D	E	E	E	C	C	D	C	C	C	C	C
HCM2kAvgQ:	6	33	33	4	5	5	4	5	5	0	3	4

Note: Queue reported is the number of cars per lane.

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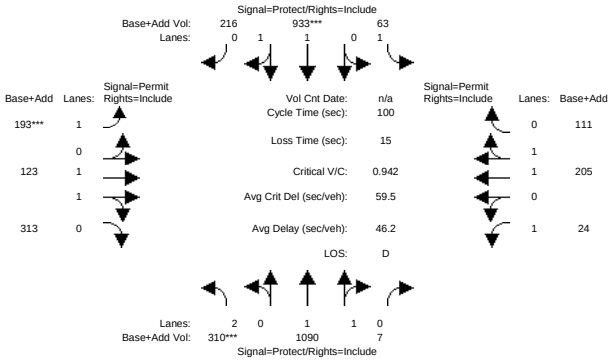
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	50	50	5	41	41	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	310	1090	7	63	933	216	193	123	313	24	205	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	310	1090	7	63	933	216	193	123	313	24	205	111
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	310	1090	7	63	933	216	193	123	313	24	205	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	333	1172	8	68	1003	232	208	132	337	26	220	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	333	1172	8	68	1003	232	208	132	337	26	220	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	333	1172	8	68	1003	232	208	132	337	26	220	119
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.79	0.77	0.40	0.68	0.62	0.31	0.72	0.69
Lanes:	2.00	1.99	0.01	1.00	1.62	0.38	1.00	1.00	1.00	1.00	1.28	0.72
Final Sat.:	2987	3056	20	1539	2423	561	754	1287	1183	589	1748	946
Capacity Analysis Module:												
Vol/Sat:	0.11	0.38	0.38	0.04	0.41	0.41	0.28	0.10	0.28	0.04	0.13	0.13
Crit Moves:	****				****		****					
Green/Cycle:	0.14	0.50	0.50	0.05	0.41	0.41	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.80	0.77	0.77	0.88	1.01	1.01	0.92	0.34	0.95	0.15	0.42	0.42
Uniform Del:	41.6	20.3	20.3	47.2	29.5	29.5	33.8	27.3	34.2	25.6	28.0	28.0
IncremntDel:	14.6	3.7	3.7	73.0	28.2	28.2	41.6	0.7	29.5	1.7	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.2	24.0	24.0	120.2	57.7	57.7	75.4	28.0	63.7	27.4	29.6	29.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.2	24.0	24.0	120.2	57.7	57.7	75.4	28.0	63.7	27.4	29.6	29.6
LOS by Move:	E	C	C	F	E	E	E	C	E	C	C	C
HCM2kAvgQ:	5	16	16	4	28	27	7	3	12	1	5	5

Note: Queue reported is the number of cars per lane.

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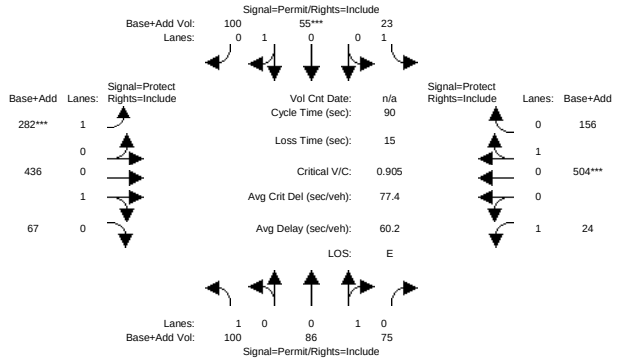
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	15	40	40	15	40	40
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	100	86	75	23	55	100	282	436	67	24	504	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	86	75	23	55	100	282	436	67	24	504	156
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	86	75	23	55	100	282	436	67	24	504	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	105	90	79	24	58	105	296	458	70	25	529	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	90	79	24	58	105	296	458	70	25	529	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	90	79	24	58	105	296	458	70	25	529	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.46	0.79	0.75	0.45	0.77	0.71	0.81	0.73	0.73	0.81	0.82	0.81
Lanes:	1.00	0.52	0.48	1.00	0.34	0.66	1.00	0.87	0.13	1.00	0.76	0.24
Final Sat.:	866	785	684	848	494	899	1539	1203	185	1539	1190	368
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.03	0.12	0.12	0.19	0.38	0.38	0.02	0.44	0.44
Crit Moves:					****		****				****	
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.17	0.44	0.44	0.17	0.44	0.44
Volume/Cap:	0.55	0.52	0.52	0.13	0.53	0.53	1.15	0.86	0.86	0.10	1.00	1.00
Uniform Del:	31.0	30.8	30.8	28.0	30.8	30.8	37.5	22.4	22.4	31.8	25.0	25.0
IncremntDel:	10.7	5.8	5.8	1.4	6.3	6.3	104.4	14.3	14.3	0.8	34.4	34.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.7	36.5	36.5	29.4	37.1	37.1	141.9	36.7	36.7	32.5	59.4	59.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	36.5	36.5	29.4	37.1	37.1	141.9	36.7	36.7	32.5	59.4	59.4
LOS by Move:	D	D	D	C	D	D	F	D	D	C	E	E
HCM2kAvgQ:	3	5	5	1	5	5	13	12	12	1	26	26

Note: Queue reported is the number of cars per lane.

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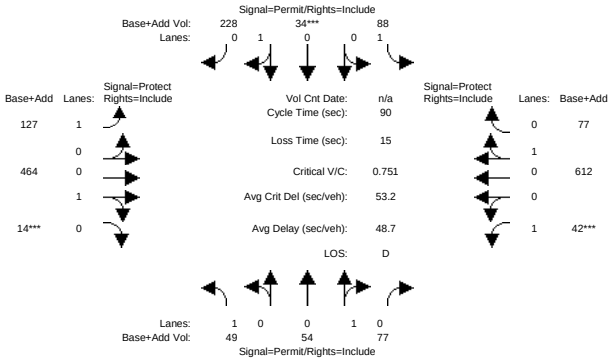
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #35: 16th/4th



Street Name:	4th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	10	40	40	15	45	45
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	49	54	77	88	34	228	127	464	14	42	612	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	54	77	88	34	228	127	464	14	42	612	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	54	77	88	34	228	127	464	14	42	612	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	54	59	85	97	37	251	140	510	15	46	673	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	59	85	97	37	251	140	510	15	46	673	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	59	85	97	37	251	140	510	15	46	673	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.27	0.78	0.73	0.48	0.74	0.67	0.81	0.74	0.74	0.81	0.84	0.83
Lanes:	1.00	0.40	0.60	1.00	0.12	0.88	1.00	0.97	0.03	1.00	0.89	0.11
Final Sat.:	514	585	834	921	167	1120	1539	1371	41	1539	1414	178
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.11	0.22	0.22	0.09	0.37	0.37	0.03	0.48	0.48
Crit Moves:					****				****	****		
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.11	0.44	0.44	0.17	0.50	0.50
Volume/Cap:	0.47	0.46	0.46	0.47	1.01	1.01	0.82	0.84	0.84	0.18	0.95	0.95
Uniform Del:	30.4	30.3	30.3	30.4	35.0	35.0	39.1	22.1	22.1	32.2	21.5	21.5
IncremntDel:	13.3	4.7	4.7	7.6	55.0	55.0	33.3	12.6	12.6	1.5	22.0	22.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.8	35.0	35.0	38.1	90.0	90.0	72.4	34.7	34.7	33.7	43.5	43.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.8	35.0	35.0	38.1	90.0	90.0	72.4	34.7	34.7	33.7	43.5	43.5
LOS by Move:	D	D	D	D	F	F	E	C	C	C	D	D
HCM2kAvgQ:	2	4	4	3	14	13	4	13	13	1	25	25

Note: Queue reported is the number of cars per lane.

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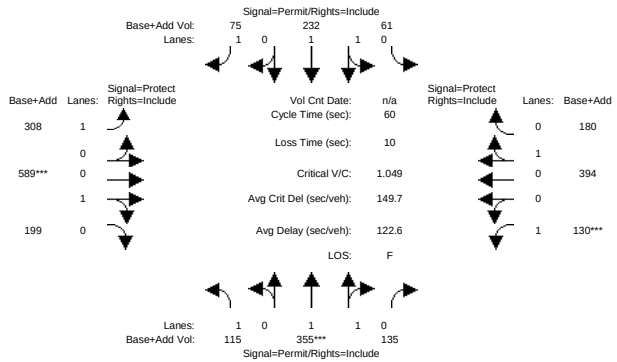
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #36: 16th/Owens




```
Street Name:            Owens St                    16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20     20   20   20     10   25   25      5   18   18
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0     5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     115  355  135     61  232   75    308  589  199    130  394  180
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse:  115  355  135     61  232   75    308  589  199    130  394  180
Added Vol:      0    0    0      0    0    0      0    0    0      0    0    0
PasserByVol:    0    0    0      0    0    0      0    0    0      0    0    0
Initial Fut:  115  355  135     61  232   75    308  589  199    130  394  180
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95
PHF Volume:   121  374  142     64  244   79    324  620  209    137  415  189
Reduct Vol:     0    0    0      0    0    0      0    0    0      0    0    0
Reduced Vol:  121  374  142     64  244   79    324  620  209    137  415  189
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:  121  374  142     64  244   79    324  620  209    137  415  189
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900   1900 1900 1900   1900 1900 1900   1900 1900 1900
Adjustment:  0.44 0.78 0.76   0.64 0.64 0.67   0.81 0.72 0.71   0.81 0.81 0.80
Lanes:       1.00 1.44 0.56   0.42 1.58 1.00   1.00 0.75 0.25   1.00 0.68 0.32
Final Sat.:   836 2127  809    508 1930 1274   1539 1017  344   1539 1055  482
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.18 0.18   0.13 0.13 0.06   0.21 0.61 0.61   0.09 0.39 0.39
Crit Moves:       ****                          ****           ****
Green/Cycle: 0.33 0.33 0.33   0.33 0.33 0.33   0.17 0.42 0.42   0.08 0.33 0.33
Volume/Cap:  0.43 0.53 0.53   0.38 0.38 0.19   1.21 1.46 1.46   1.07 1.21 1.21
Uniform Del: 15.6 16.2 16.2   15.3 15.3 14.2   24.8 17.5 17.5   27.5 20.2 20.2
IncremntDel:  4.9  2.0  2.0    1.3  1.3  1.0  122.9  218 217.9   98.4  111 110.9
InitQueuDel:  0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Delay/Veh:   20.5 18.2 18.2   16.6 16.6 15.2  147.7  235 235.4  125.9  131 131.1
User DelAdj: 1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
AdjDel/Veh:  20.5 18.2 18.2   16.6 16.6 15.2  147.7  235 235.4  125.9  131 131.1
LOS by Move:    C    B    B     B    B    B     F    F    F      F    F    F
HCM2kAvgQ:      2    5    5     3    3    1    13   47   46      4   23   23
Note: Queue reported is the number of cars per lane.
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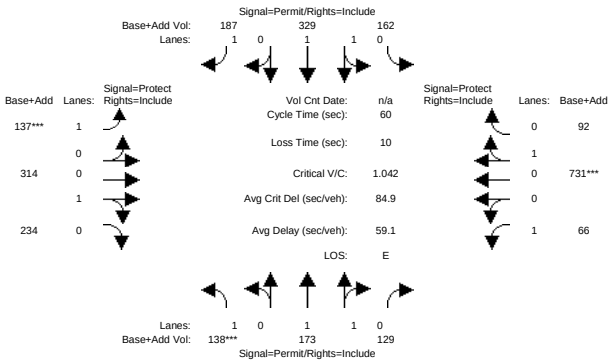
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #36: 16th/Owens




```
Street Name:            Owens St                    16th St
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20     20   20   20     10   20   20     10   20   20
Y+R:           5.0  5.0  5.0    5.0  5.0  5.0    5.0  5.0  5.0     5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     138  173  129    162  329  187    137  314  234     66  731   92
Growth Adj:  1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Initial Bse:  138  173  129    162  329  187    137  314  234     66  731   92
Added Vol:      0    0    0      0    0    0      0    0    0      0    0    0
PasserByVol:    0    0    0      0    0    0      0    0    0      0    0    0
Initial Fut:  138  173  129    162  329  187    137  314  234     66  731   92
User Adj:    1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95   0.95 0.95 0.95
PHF Volume:   145  182  136    171  346  197    144  331  246     69  769   97
Reduct Vol:     0    0    0      0    0    0      0    0    0      0    0    0
Reduced Vol:  145  182  136    171  346  197    144  331  246     69  769   97
PCE Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:  145  182  136    171  346  197    144  331  246     69  769   97
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900   1900 1900 1900   1900 1900 1900   1900 1900 1900
Adjustment:  0.25 0.76 0.76   0.70 0.54 0.55   0.59 0.81 0.70   0.68 0.81 0.84
Lanes:       1.00 1.10 0.90   0.67 1.33 1.00   1.00 0.57 0.43   1.00 0.89 0.11
Final Sat.:   469 1591 1186    686 1393 1115   1539  750  559   1539 1414  178
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.31 0.11 0.11   0.25 0.25 0.18   0.09 0.44 0.44   0.05 0.54 0.54
Crit Moves:  ****                             ****           ****
Green/Cycle: 0.30 0.30 0.30   0.30 0.30 0.30   0.09 0.51 0.51   0.10 0.52 0.52
Volume/Cap:  1.04 0.39 0.39   0.84 0.84 0.59   1.03 0.87 0.87   0.43 1.04 1.04
Uniform Del: 38.7 30.7 30.7   36.2 36.2 33.0   50.0 23.8 23.8   46.2 26.3 26.3
IncremntDel: 88.4  1.4  1.4   12.8 12.8  7.7   84.4 14.3 14.3    8.2 43.2 43.2
InitQueuDel:  0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0    0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Delay/Veh:  127.1 32.1 32.1   49.0 49.0 40.7  134.4 38.1 38.1   54.3 69.5 69.5
User DelAdj: 1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
AdjDel/Veh: 127.1 32.1 32.1   49.0 49.0 40.7  134.4 38.1 38.1   54.3 69.5 69.5
LOS by Move:    F    C    C     D    D    D     F    D    D      D    E    E
HCM2kAvgQ:      9    5    4    11   11    6     5   16   16      2   34   34
Note: Queue reported is the number of cars per lane.
```

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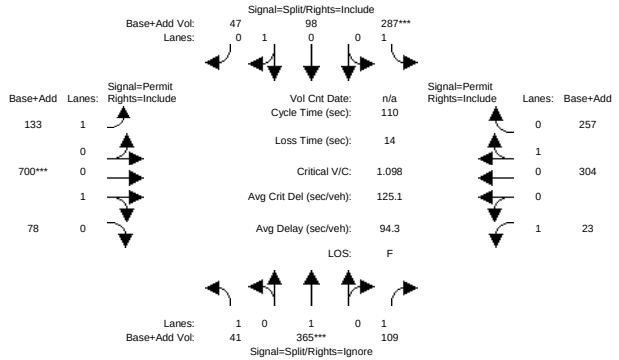
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #37: 16th/7th



Street Name:	7th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	36	36	36	36	36	67
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	41	365	109	287	98	47	133	700	78	23	304	257
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	365	109	287	98	47	133	700	78	23	304	257
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	365	109	287	98	47	133	700	78	23	304	257
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	42	372	0	293	100	48	136	714	80	23	310	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	372	0	293	100	48	136	714	80	23	310	262
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	372	0	293	100	48	136	714	80	23	310	262
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.71	0.68	0.21	0.74	0.73	0.06	0.79	0.77
Lanes:	1.00	1.00	1.00	1.00	0.67	0.33	1.00	0.90	0.10	1.00	0.54	0.46
Final Sat.:	1539	1620	1900	1539	900	432	393	1256	140	114	808	683
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.00	0.19	0.11	0.11	0.35	0.57	0.57	0.21	0.38	0.38
Crit Moves:		****		****				****				
Green/Cycle:	0.21	0.21	0.00	0.21	0.21	0.21	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.13	1.08	0.00	0.89	0.52	0.52	0.73	1.20	1.20	0.43	0.81	0.81
Uniform Del:	44.9	55.5	0.0	54.0	49.2	49.2	29.7	37.0	37.0	24.5	31.5	31.5
IncremntDel:	0.8	71.6	0.0	28.9	6.7	6.7	21.8	103	102.8	23.4	9.6	9.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.7	127	0.0	82.8	55.9	55.9	51.5	140	139.8	47.8	41.1	41.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	127	0.0	82.8	55.9	55.9	51.5	140	139.8	47.8	41.1	41.1
LOS by Move:	D	F	A	F	E	E	D	F	F	D	D	D
HCM2kAvgQ:	1	23	0	15	6	6	6	52	52	1	20	19

Note: Queue reported is the number of cars per lane.

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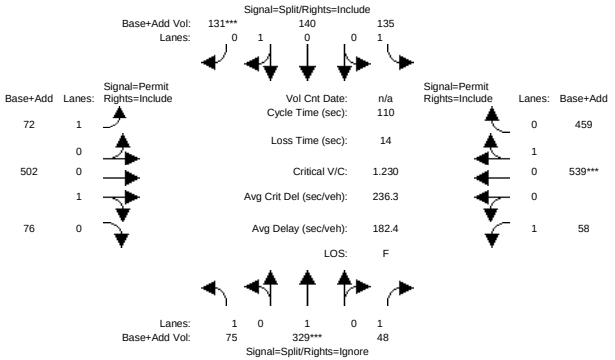
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #37: 16th/7th



Street Name:	7th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	37	37	37	30	30	30	29	29	29	29	29	59
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	75	329	48	135	140	131	72	502	76	58	539	459
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	329	48	135	140	131	72	502	76	58	539	459
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	329	48	135	140	131	72	502	76	58	539	459
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	77	336	0	138	143	134	73	512	78	59	550	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	336	0	138	143	134	73	512	78	59	550	468
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	336	0	138	143	134	73	512	78	59	550	468
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.69	0.65	0.06	0.73	0.73	0.15	0.79	0.77
Lanes:	1.00	1.00	1.00	1.00	0.50	0.50	1.00	0.87	0.13	1.00	0.53	0.47
Final Sat.:	1539	1620	1900	1539	661	618	110	1206	183	286	804	685
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.00	0.09	0.22	0.22	0.67	0.42	0.42	0.21	0.68	0.68
Crit Moves:		****				****					****	
Green/Cycle:	0.26	0.26	0.00	0.21	0.21	0.21	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.19	0.78	0.00	0.42	1.01	1.01	1.43	1.01	1.01	0.49	1.62	1.62
Uniform Del:	39.9	47.8	0.0	47.5	55.0	55.0	40.5	40.5	40.5	29.5	40.5	40.5
IncremntDel:	1.0	13.4	0.0	3.9	56.7	56.7	274.7	39.3	39.3	13.6	287	287.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.9	61.2	0.0	51.3	112	111.7	315.2	79.8	79.8	43.1	328	327.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.9	61.2	0.0	51.3	112	111.7	315.2	79.8	79.8	43.1	328	327.9
LOS by Move:	D	E	A	D	F	F	F	E	E	D	F	F
HCM2kAvgQ:	3	15	0	5	17	16	8	32	32	2	90	87

Note: Queue reported is the number of cars per lane.

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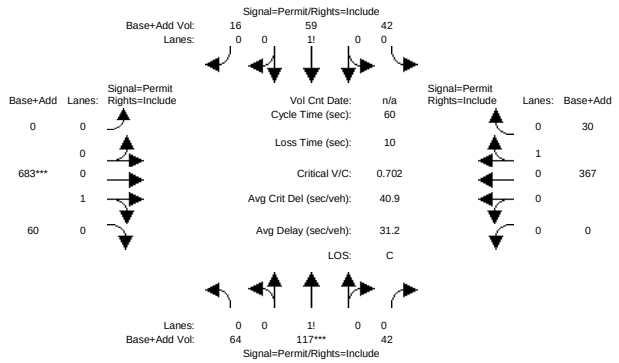
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	26	26	26	26	26	26
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	64	117	42	42	59	16	0	683	60	0	367	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	117	42	42	59	16	0	683	60	0	367	30
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	117	42	42	59	16	0	683	60	0	367	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	70	129	46	46	65	18	0	751	66	0	403	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	129	46	46	65	18	0	751	66	0	403	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	129	46	46	65	18	0	751	66	0	403	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.82	0.82	0.82	1.00	0.99	0.99	1.00	0.99	0.99
Lanes:	0.29	0.52	0.19	0.36	0.50	0.14	0.00	0.92	0.08	0.00	0.92	0.08
Final Sat.:	468	855	307	563	790	214	0	1727	152	0	1739	142
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.08	0.08	0.08	0.00	0.43	0.43	0.00	0.23	0.23
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.43	0.43	0.00	0.43	0.43
Volume/Cap:	0.38	0.38	0.38	0.21	0.21	0.21	0.00	1.00	1.00	0.00	0.54	0.54
Uniform Del:	12.7	12.7	12.7	11.8	11.8	11.8	0.0	17.0	17.0	0.0	12.5	12.5
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	0.0	32.2	32.2	0.0	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	0.0	49.2	49.2	0.0	13.2	13.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	0.0	49.2	49.2	0.0	13.2	13.2
LOS by Move:	B	B	B	B	B	B	A	D	D	A	B	B
HCM2kAvgQ:	3	3	3	2	2	2	0	16	16	0	6	6

Note: Queue reported is the number of cars per lane.

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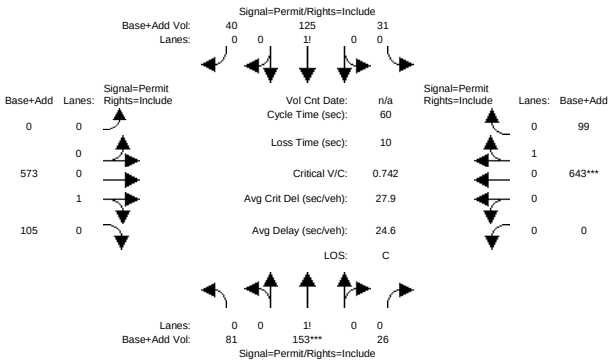
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	81	153	26	31	125	40	0	573	105	0	643	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	153	26	31	125	40	0	573	105	0	643	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	81	153	26	31	125	40	0	573	105	0	643	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	89	168	29	34	137	44	0	630	115	0	707	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	168	29	34	137	44	0	630	115	0	707	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	168	29	34	137	44	0	630	115	0	707	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	0.83	0.89	0.89	0.89	1.00	0.98	0.98	1.00	0.98	0.98
Lanes:	0.31	0.59	0.10	0.16	0.64	0.20	0.00	0.85	0.15	0.00	0.87	0.13
Final Sat.:	491	927	158	268	1081	346	0	1572	288	0	1617	249
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.13	0.13	0.13	0.00	0.40	0.40	0.00	0.44	0.44
Crit Moves:		****									****	
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.00	0.47	0.47	0.00	0.47	0.47
Volume/Cap:	0.49	0.49	0.49	0.35	0.35	0.35	0.00	0.86	0.86	0.00	0.94	0.94
Uniform Del:	14.7	14.7	14.7	13.8	13.8	13.8	0.0	14.2	14.2	0.0	15.2	15.2
IncremntDel:	0.7	0.7	0.7	0.3	0.3	0.3	0.0	8.6	8.6	0.0	17.1	17.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	0.0	22.8	22.8	0.0	32.3	32.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	0.0	22.8	22.8	0.0	32.3	32.3
LOS by Move:	B	B	B	B	B	B	A	C	C	A	C	C
HCM2kAvgQ:	5	5	5	3	3	3	0	13	13	0	20	20

Note: Queue reported is the number of cars per lane.

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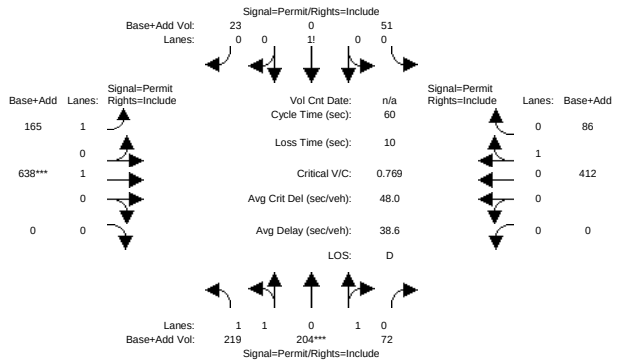
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	23	23	23	23	23	23	27	27	27	27	27	27
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	219	204	72	51	0	23	165	638	0	0	412	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	219	204	72	51	0	23	165	638	0	0	412	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	219	204	72	51	0	23	165	638	0	0	412	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	235	219	77	55	0	25	177	686	0	0	443	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	219	77	55	0	25	177	686	0	0	443	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	219	77	55	0	25	177	686	0	0	443	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.60	0.60	0.49	1.00	0.49	0.54	0.75	1.00	1.00	0.73	0.72
Lanes:	1.35	1.22	0.43	0.69	0.00	0.31	1.00	1.00	0.00	0.00	0.83	0.17
Final Sat.:	1501	1398	493	642	0	290	1020	1418	0	0	1145	239
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.09	0.00	0.09	0.17	0.48	0.00	0.00	0.39	0.39
Crit Moves:		****						****				
Green/Cycle:	0.38	0.38	0.38	0.38	0.00	0.38	0.45	0.45	0.00	0.00	0.45	0.45
Volume/Cap:	0.41	0.41	0.41	0.22	0.00	0.22	0.39	1.08	0.00	0.00	0.86	0.86
Uniform Del:	13.5	13.5	13.5	12.5	0.0	12.5	11.0	16.5	0.0	0.0	14.8	14.8
IncremntDel:	1.0	1.0	1.0	1.4	0.0	1.4	2.4	57.5	0.0	0.0	14.4	14.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	14.5	14.5	14.5	13.9	0.0	13.9	13.4	74.0	0.0	0.0	29.2	29.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.5	14.5	14.5	13.9	0.0	13.9	13.4	74.0	0.0	0.0	29.2	29.2
LOS by Move:	B	B	B	B	A	B	B	E	A	A	C	C
HCM2kAvgQ:	3	3	3	1	0	1	2	18	0	0	11	11

Note: Queue reported is the number of cars per lane.

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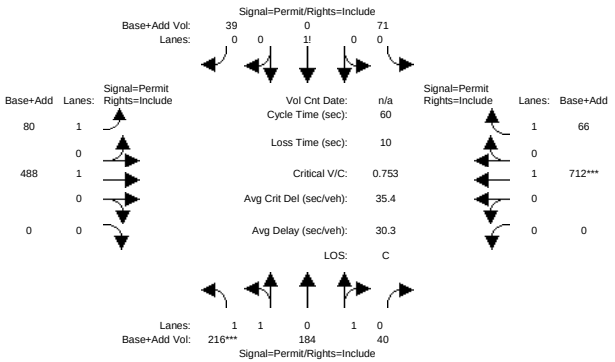
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	216	184	40	71	0	39	80	488	0	0	712	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	184	40	71	0	39	80	488	0	0	712	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	184	40	71	0	39	80	488	0	0	712	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	237	202	44	78	0	43	88	536	0	0	782	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	202	44	78	0	43	88	536	0	0	782	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	202	44	78	0	43	88	536	0	0	782	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.59	0.59	0.48	1.00	0.49	0.12	0.75	1.00	1.00	0.85	0.61
Lanes:	1.49	1.24	0.27	0.65	0.00	0.35	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	1639	1396	304	593	0	326	222	1418	0	0	1620	1168
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.13	0.00	0.13	0.40	0.38	0.00	0.00	0.48	0.06
Crit Moves:	****										****	
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.41	0.41	0.41	0.38	0.00	0.38	0.73	0.78	0.00	0.00	1.00	0.13
Uniform Del:	14.8	14.8	14.8	14.6	0.0	14.6	12.4	12.9	0.0	0.0	15.5	8.5
IncremntDel:	1.1	1.1	1.1	3.3	0.0	3.3	32.4	8.7	0.0	0.0	31.9	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.9	15.9	15.9	17.9	0.0	17.9	44.8	21.6	0.0	0.0	47.4	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.9	15.9	17.9	0.0	17.9	44.8	21.6	0.0	0.0	47.4	9.0
LOS by Move:	B	B	B	B	A	B	D	C	A	A	D	A
HCM2kAvgQ:	3	3	3	2	0	2	1	8	0	0	17	1

Note: Queue reported is the number of cars per lane.

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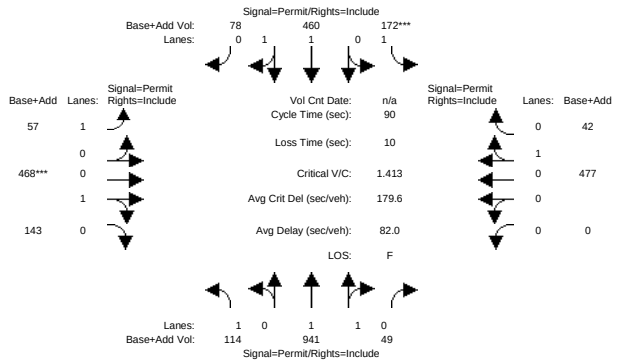
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	114	941	49	172	460	78	57	468	143	0	477	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	941	49	172	460	78	57	468	143	0	477	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	941	49	172	460	78	57	468	143	0	477	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	970	51	177	474	80	59	482	147	0	492	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	970	51	177	474	80	59	482	147	0	492	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	970	51	177	474	80	59	482	147	0	492	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.27	0.59	0.72	0.13	0.58	0.68	0.50	0.61	0.64	1.00	0.63	0.68
Lanes:	1.00	1.92	0.08	1.00	1.75	0.25	1.00	0.77	0.23	0.00	0.93	0.07
Final Sat.:	507	2144	112	246	1923	326	943	903	276	0	1107	97
Capacity Analysis Module:												
Vol/Sat:	0.23	0.45	0.45	0.72	0.25	0.25	0.06	0.53	0.53	0.00	0.44	0.44
Crit Moves:				****				****				
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.00	0.44	0.44
Volume/Cap:	0.52	1.02	1.02	1.62	0.55	0.55	0.14	1.20	1.20	0.00	1.00	1.00
Uniform Del:	18.1	25.0	25.0	25.0	18.4	18.4	14.8	25.0	25.0	0.0	25.0	25.0
IncremntDel:	8.4	33.0	33.0	318.7	2.2	2.2	0.7	108	108.4	0.0	38.8	38.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	26.5	58.0	58.0	343.7	20.7	20.7	15.5	133	133.4	0.0	63.8	63.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.5	58.0	58.0	343.7	20.7	20.7	15.5	133	133.4	0.0	63.8	63.8
LOS by Move:	C	E	E	F	C	C	B	F	F	A	E	E
HCM2kAvgQ:	3	22	26	15	6	7	1	33	34	0	18	19

Note: Queue reported is the number of cars per lane.

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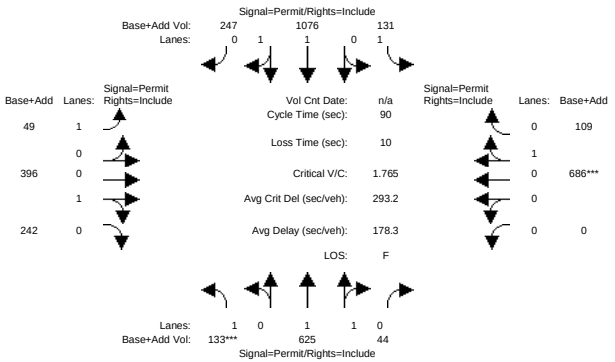
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	133	625	44	131	1076	247	49	396	242	0	686	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	625	44	131	1076	247	49	396	242	0	686	109
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	625	44	131	1076	247	49	396	242	0	686	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	137	644	45	135	1109	255	51	408	249	0	707	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	644	45	135	1109	255	51	408	249	0	707	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	137	644	45	135	1109	255	51	408	249	0	707	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.08	0.59	0.71	0.22	0.58	0.66	0.56	0.60	0.60	1.00	0.63	0.67
Lanes:	1.00	1.89	0.11	1.00	1.67	0.33	1.00	0.62	0.38	0.00	0.87	0.13
Final Sat.:	155	2106	148	423	1823	418	1061	707	432	0	1035	164
Capacity Analysis Module:												
Vol/Sat:	0.88	0.31	0.31	0.32	0.61	0.61	0.05	0.58	0.58	0.00	0.68	0.68
Crit Moves:	****										****	
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.00	0.44	0.44
Volume/Cap:	1.71	0.69	0.69	0.72	1.37	1.37	0.11	1.30	1.30	0.00	1.54	1.54
Uniform Del:	25.0	20.0	20.0	20.4	25.0	25.0	14.6	25.0	25.0	0.0	25.0	25.0
IncremntDel:	368.4	3.9	3.9	21.0	173	172.7	0.5	148	148.3	0.0	251	251.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	393.4	23.9	23.9	41.4	198	197.7	15.0	173	173.3	0.0	276	276.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	393.4	23.9	23.9	41.4	198	197.7	15.0	173	173.3	0.0	276	276.5
LOS by Move:	F	C	C	D	F	F	B	F	F	A	F	F
HCM2kAvgQ:	12	9	11	5	44	50	1	39	39	0	56	60

Note: Queue reported is the number of cars per lane.

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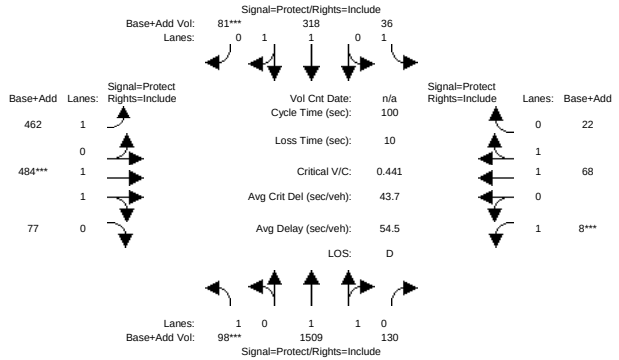
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	23	51	51	4	32	44	31	27	27	12	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	98	1509	130	36	318	81	462	484	77	8	68	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	1509	130	36	318	81	462	484	77	8	68	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	1509	130	36	318	81	462	484	77	8	68	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	1509	130	36	318	81	462	484	77	8	68	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	1509	130	36	318	81	462	484	77	8	68	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	1509	130	36	318	81	462	484	77	8	68	22
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.79	0.79	0.81	0.78	0.77	0.81	0.74	0.73	0.81	0.78	0.76
Lanes:	1.00	1.84	0.16	1.00	1.59	0.41	1.00	1.72	0.28	1.00	1.50	0.50
Final Sat.:	1539	2771	239	1539	2349	598	1539	2434	387	1539	2228	721
Capacity Analysis Module:												
Vol/Sat:	0.06	0.54	0.54	0.02	0.14	0.14	0.30	0.20	0.20	0.01	0.03	0.03
Crit Moves:	****					****		****		****		
Green/Cycle:	0.20	0.54	0.54	0.03	0.38	0.38	0.30	0.23	0.23	0.10	0.03	0.03
Volume/Cap:	0.32	1.00	1.00	0.68	0.36	0.36	1.00	0.85	0.85	0.05	0.88	0.88
Uniform Del:	39.8	26.5	26.5	55.4	25.8	25.8	40.4	42.6	42.6	46.9	55.8	55.8
IncremntDel:	2.8	22.9	22.9	52.5	0.9	0.9	40.6	13.4	13.4	0.6	60.9	60.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.6	49.4	49.4	107.8	26.7	26.7	81.0	56.0	56.0	47.5	117	116.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	49.4	49.4	107.8	26.7	26.7	81.0	56.0	56.0	47.5	117	116.7
LOS by Move:	D	D	D	F	C	C	F	E	E	D	F	F
HCM2kAvgQ:	3	38	38	1	5	5	20	11	11	0	4	4

Note: Queue reported is the number of cars per lane.

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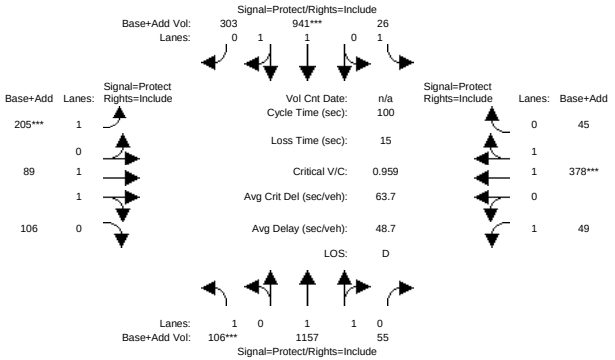
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	5	50	50	5	50	50	15	15	15	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	106	1157	55	26	941	303	205	89	106	49	378	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	1157	55	26	941	303	205	89	106	49	378	45
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	1157	55	26	941	303	205	89	106	49	378	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	112	1218	58	27	991	319	216	94	112	52	398	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	1218	58	27	991	319	216	94	112	52	398	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	1218	58	27	991	319	216	94	112	52	398	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.79	0.81	0.77	0.71	0.81	0.70	0.66	0.81	0.80	0.78
Lanes:	1.00	1.91	0.09	1.00	1.48	0.52	1.00	1.00	1.00	1.00	1.78	0.22
Final Sat.:	1539	2888	137	1539	2177	701	1539	1325	1259	1539	2701	322
Capacity Analysis Module:												
Vol/Sat:	0.07	0.42	0.42	0.02	0.46	0.46	0.14	0.07	0.09	0.03	0.15	0.15
Crit Moves:	****					****		****			****	
Green/Cycle:	0.07	0.51	0.51	0.05	0.50	0.50	0.15	0.17	0.17	0.11	0.13	0.13
Volume/Cap:	1.10	0.82	0.82	0.35	0.91	0.91	0.93	0.41	0.52	0.29	1.10	1.10
Uniform Del:	46.7	20.4	20.4	45.8	22.9	22.9	42.0	37.0	37.8	40.6	43.3	43.3
IncremntDel:	118.5	5.0	5.0	11.5	10.1	10.1	44.4	2.6	4.8	4.2	74.1	74.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	165.2	25.3	25.3	57.3	33.1	33.1	86.4	39.6	42.6	44.9	117	117.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	165.2	25.3	25.3	57.3	33.1	33.1	86.4	39.6	42.6	44.9	117	117.4
LOS by Move:	F	C	C	E	C	C	F	D	D	D	F	F
HCM2kAvgQ:	8	19	19	1	19	17	8	3	3	2	13	13

Note: Queue reported is the number of cars per lane.

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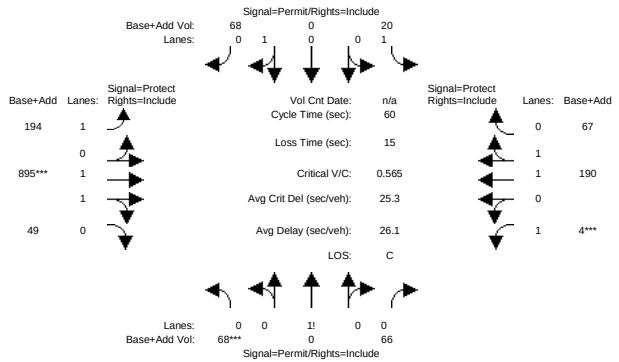
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	17	17	17	17	17	15	28	28	15	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	68	0	66	20	0	68	194	895	49	4	190	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	0	66	20	0	68	194	895	49	4	190	67
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	0	66	20	0	68	194	895	49	4	190	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	72	0	69	21	0	72	204	942	52	4	200	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	0	69	21	0	72	204	942	52	4	200	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	0	69	21	0	72	204	942	52	4	200	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.61	1.00	0.61	0.63	1.00	0.68	0.81	0.75	0.75	0.81	0.73	0.72
Lanes:	0.51	0.00	0.49	1.00	0.00	1.00	1.00	1.90	0.10	1.00	1.47	0.53
Final Sat.:	592	0	574	1190	0	1295	1539	2714	149	1539	2042	720
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.02	0.00	0.06	0.13	0.35	0.35	0.00	0.10	0.10
Crit Moves:	****							****		****		
Green/Cycle:	0.19	0.00	0.19	0.19	0.00	0.19	0.22	0.48	0.48	0.17	0.42	0.42
Volume/Cap:	0.64	0.00	0.64	0.09	0.00	0.29	0.59	0.73	0.73	0.02	0.23	0.23
Uniform Del:	33.7	0.0	33.7	30.1	0.0	31.3	31.2	18.8	18.8	31.3	16.8	16.8
IncremntDel:	13.4	0.0	13.4	0.8	0.0	3.0	7.2	3.4	3.4	0.1	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.1	0.0	47.1	31.0	0.0	34.4	38.4	22.2	22.2	31.5	17.3	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.1	0.0	47.1	31.0	0.0	34.4	38.4	22.2	22.2	31.5	17.3	17.3
LOS by Move:	D	A	D	C	A	C	D	C	C	C	B	B
HCM2kAvgQ:	5	0	5	1	0	2	6	13	13	0	2	2

Note: Queue reported is the number of cars per lane.

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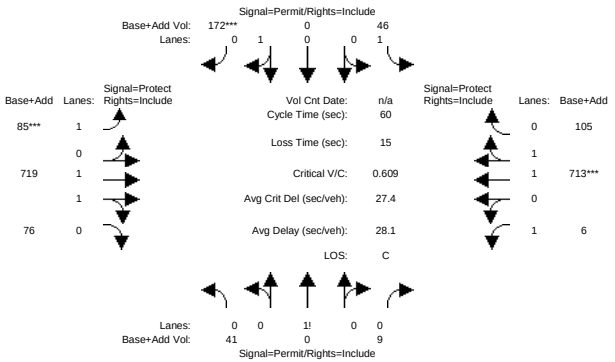
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	20	20	15	25	25	15	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	41	0	9	46	0	172	85	719	76	6	713	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	0	9	46	0	172	85	719	76	6	713	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	0	9	46	0	172	85	719	76	6	713	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	43	0	9	48	0	181	89	757	80	6	751	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	0	9	48	0	181	89	757	80	6	751	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	0	9	48	0	181	89	757	80	6	751	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.56	1.00	0.58	0.61	1.00	0.68	0.81	0.73	0.74	0.81	0.73	0.74
Lanes:	0.82	0.00	0.18	1.00	0.00	1.00	1.00	1.81	0.19	1.00	1.75	0.25
Final Sat.:	879	0	193	1157	0	1295	1539	2526	267	1539	2423	357
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.04	0.00	0.14	0.06	0.30	0.30	0.00	0.31	0.31
Crit Moves:						****	****				****	
Green/Cycle:	0.22	0.00	0.22	0.22	0.00	0.22	0.17	0.39	0.39	0.22	0.44	0.44
Volume/Cap:	0.22	0.00	0.22	0.19	0.00	0.63	0.35	0.76	0.76	0.02	0.70	0.70
Uniform Del:	28.6	0.0	28.6	28.4	0.0	31.6	33.2	23.7	23.7	27.6	20.1	20.1
IncremntDel:	2.1	0.0	2.1	1.6	0.0	10.0	3.7	5.0	5.0	0.1	3.3	3.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.8	0.0	30.8	30.0	0.0	41.7	36.9	28.7	28.7	27.7	23.4	23.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	0.0	30.8	30.0	0.0	41.7	36.9	28.7	28.7	27.7	23.4	23.4
LOS by Move:	C	A	C	C	A	D	D	C	C	C	C	C
HCM2kAvgQ:	1	0	1	1	0	6	3	12	12	0	9	9

Note: Queue reported is the number of cars per lane.

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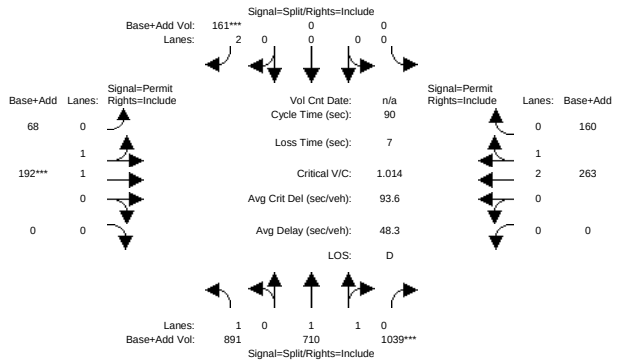
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	57	57	57	11	11	11	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	891	710	1039	0	0	161	68	192	0	0	263	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	891	710	1039	0	0	161	68	192	0	0	263	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	891	710	1039	0	0	161	68	192	0	0	263	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	924	737	1078	0	0	167	71	199	0	0	273	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	924	737	1078	0	0	167	71	199	0	0	273	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	924	737	1078	0	0	167	71	199	0	0	273	166
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.76	1.00	1.00	0.61	0.61	0.62	1.00	1.00	0.81	0.79
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.53	1.47	0.00	0.00	2.00	1.00
Final Sat.:	2018	1461	1440	0	0	2325	613	1732	0	0	3090	1505
Capacity Analysis Module:												
Vol/Sat:	0.46	0.50	0.75	0.00	0.00	0.07	0.12	0.12	0.00	0.00	0.09	0.11
Crit Moves:			****			****		****				
Green/Cycle:	0.63	0.63	0.63	0.00	0.00	0.12	0.17	0.17	0.00	0.00	0.17	0.17
Volume/Cap:	0.72	0.80	1.18	0.00	0.00	0.59	0.69	0.69	0.00	0.00	0.53	0.66
Uniform Del:	11.2	12.2	16.5	0.0	0.0	37.4	35.3	35.3	0.0	0.0	34.3	35.1
IncremntDel:	3.6	3.0	88.7	0.0	0.0	8.6	9.6	9.6	0.0	0.0	2.4	5.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	14.7	15.2	105.2	0.0	0.0	46.0	44.9	44.9	0.0	0.0	36.7	40.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.7	15.2	105.2	0.0	0.0	46.0	44.9	44.9	0.0	0.0	36.7	40.3
LOS by Move:	B	B	F	A	A	D	D	D	A	A	D	D
HCM2kAvgQ:	18	18	55	0	0	3	4	4	0	0	4	6

Note: Queue reported is the number of cars per lane.

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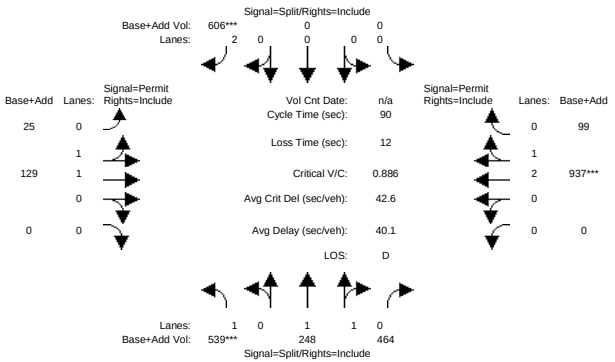
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	29	29	27	27	27	22	22	22	22	22	22
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	539	248	464	0	0	606	25	129	0	0	937	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	539	248	464	0	0	606	25	129	0	0	937	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	539	248	464	0	0	606	25	129	0	0	937	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	561	258	483	0	0	631	26	134	0	0	976	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	561	258	483	0	0	631	26	134	0	0	976	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	561	258	483	0	0	631	26	134	0	0	976	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.76	0.81	1.00	1.00	0.62	0.63	0.63	1.00	1.00	0.85	0.84
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.33	1.67	0.00	0.00	2.71	0.29
Final Sat.:	2018	1446	1533	0	0	2363	389	2008	0	0	4380	463
Capacity Analysis Module:												
Vol/Sat:	0.28	0.18	0.32	0.00	0.00	0.27	0.07	0.07	0.00	0.00	0.22	0.22
Crit Moves:	****					****					****	
Green/Cycle:	0.36	0.36	0.36	0.00	0.00	0.30	0.24	0.24	0.00	0.00	0.24	0.24
Volume/Cap:	0.78	0.50	0.89	0.00	0.00	0.89	0.27	0.27	0.00	0.00	0.91	0.91
Uniform Del:	25.9	22.7	27.3	0.0	0.0	30.1	27.5	27.5	0.0	0.0	33.1	33.1
IncremntDel:	8.3	1.2	13.3	0.0	0.0	15.7	1.2	1.2	0.0	0.0	12.0	12.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	34.2	24.0	40.6	0.0	0.0	45.8	28.7	28.7	0.0	0.0	45.1	45.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	24.0	40.6	0.0	0.0	45.8	28.7	28.7	0.0	0.0	45.1	45.1
LOS by Move:	C	C	D	A	A	D	C	C	A	A	D	D
HCM2kAvgQ:	16	6	17	0	0	13	2	2	0	0	15	15

Note: Queue reported is the number of cars per lane.

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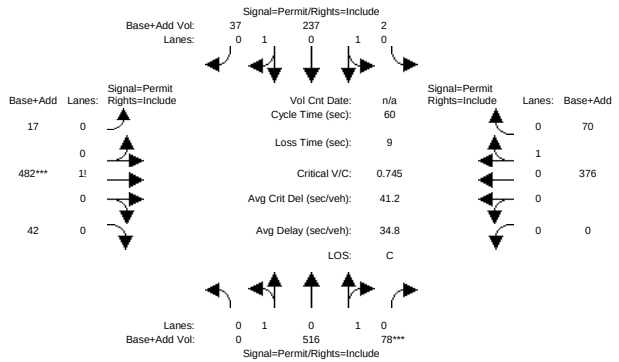
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	28	0	28	28	0	28	0	24	0	0	24	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module:												
Base Vol:	0	516	78	2	237	37	17	482	42	0	376	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	516	78	2	237	37	17	482	42	0	376	70
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	516	78	2	237	37	17	482	42	0	376	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	532	80	2	244	38	18	497	43	0	388	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	532	80	2	244	38	18	497	43	0	388	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	532	80	2	244	38	18	497	43	0	388	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.74	0.70	0.70	0.70	0.69	0.71	0.71	0.69	1.00	0.72	0.70
Lanes:	0.00	1.72	0.28	0.01	1.72	0.27	0.03	0.89	0.08	0.00	0.84	0.16
Final Sat.:	0	2414	365	19	2286	357	42	1199	104	0	1144	213
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.11	0.11	0.11	0.41	0.41	0.41	0.00	0.34	0.34
Crit Moves:			****					****				
Green/Cycle:	0.00	0.46	0.46	0.46	0.46	0.46	0.39	0.39	0.39	0.00	0.39	0.39
Volume/Cap:	0.00	0.48	0.48	0.23	0.23	0.23	1.05	1.05	1.05	0.00	0.86	0.86
Uniform Del:	0.0	11.4	11.4	10.0	10.0	10.0	18.5	18.5	18.5	0.0	17.0	17.0
IncremntDel:	0.0	1.3	1.3	0.4	0.4	0.4	53.9	53.9	53.9	0.0	16.5	16.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	0.0	12.7	12.7	10.4	10.4	10.4	72.4	72.4	72.4	0.0	33.5	33.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.7	12.7	10.4	10.4	10.4	72.4	72.4	72.4	0.0	33.5	33.5
LOS by Move:	A	B	B	B	B	B	E	E	E	A	C	C
HCM2kAvgQ:	0	5	5	2	2	2	20	20	19	0	8	8

Note: Queue reported is the number of cars per lane.

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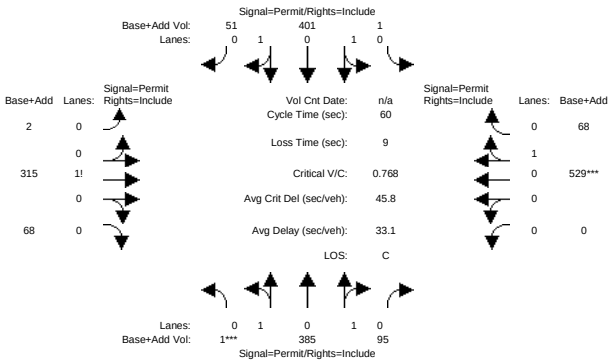
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #71: 16th St/Mission



Street Name:	Mission Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	25	0	25	25	0	25	0	25	0	0	25	0
Y+R:	4.5	4.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.5	4.0
Volume Module:												
Base Vol:	1	385	95	1	401	51	2	315	68	0	529	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	385	95	1	401	51	2	315	68	0	529	68
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	385	95	1	401	51	2	315	68	0	529	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	405	100	1	422	54	2	332	72	0	557	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	405	100	1	422	54	2	332	72	0	557	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	405	100	1	422	54	2	332	72	0	557	72
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.67	0.71	0.71	0.68	0.71	0.71	0.70	1.00	0.72	0.71
Lanes:	0.01	1.59	0.40	0.01	1.76	0.23	0.01	0.81	0.18	0.00	0.88	0.12
Final Sat.:	5	2103	519	6	2365	301	7	1103	238	0	1211	156
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.18	0.18	0.18	0.30	0.30	0.30	0.00	0.46	0.46
Crit Moves:	****										****	
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.00	0.43	0.43
Volume/Cap:	0.46	0.46	0.46	0.43	0.43	0.43	0.69	0.69	0.69	0.00	1.06	1.06
Uniform Del:	12.6	12.6	12.6	12.4	12.4	12.4	13.8	13.8	13.8	0.0	17.0	17.0
IncremntDel:	1.4	1.4	1.4	1.2	1.2	1.2	6.7	6.7	6.7	0.0	54.4	54.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	14.1	14.1	14.1	13.6	13.6	13.6	20.4	20.4	20.4	0.0	71.4	71.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.1	14.1	14.1	13.6	13.6	13.6	20.4	20.4	20.4	0.0	71.4	71.4
LOS by Move:	B	B	B	B	B	B	C	C	C	A	E	E
HCM2kAvgQ:	4	4	4	4	4	4	8	8	7	0	16	16

Note: Queue reported is the number of cars per lane.

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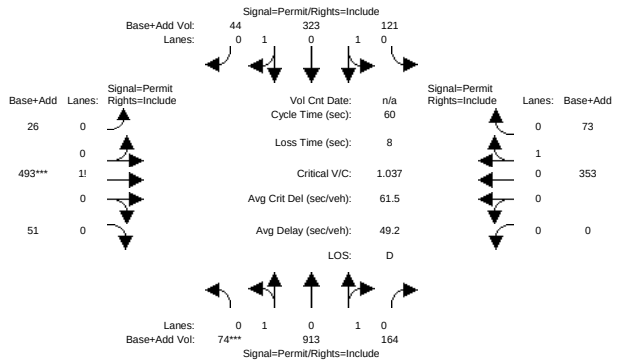
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #72: 16th St / S Van Ness



Street Name:	S Van Ness						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	31	0	31	31	0	31	21	21	0	0	21	21
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	74	913	164	121	323	44	26	493	51	0	353	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	913	164	121	323	44	26	493	51	0	353	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	74	913	164	121	323	44	26	493	51	0	353	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	76	932	167	123	330	45	27	503	52	0	360	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	932	167	123	330	45	27	503	52	0	360	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	932	167	123	330	45	27	503	52	0	360	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	0.66	0.63	0.43	0.43	0.42	0.72	0.72	0.71	1.00	0.73	0.72
Lanes:	0.13	1.58	0.29	0.50	1.32	0.18	0.05	0.86	0.09	0.00	0.83	0.17
Final Sat.:	160	1974	355	406	1085	148	62	1179	122	0	1145	237
Capacity Analysis Module:												
Vol/Sat:	0.47	0.47	0.47	0.30	0.30	0.30	0.43	0.43	0.43	0.00	0.31	0.31
Crit Moves:	****							****				
Green/Cycle:	0.52	0.52	0.52	0.52	0.52	0.52	0.35	0.35	0.35	0.00	0.35	0.35
Volume/Cap:	0.91	0.91	0.91	0.59	0.59	0.59	1.22	1.22	1.22	0.00	0.90	0.90
Uniform Del:	13.3	13.3	13.3	10.1	10.1	10.1	19.5	19.5	19.5	0.0	18.5	18.5
IncremntDel:	11.4	11.4	11.4	3.0	3.0	3.0	116.4	116	116.4	0.0	22.2	22.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	24.7	24.7	24.7	13.1	13.1	13.1	135.9	136	135.9	0.0	40.7	40.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.7	24.7	24.7	13.1	13.1	13.1	135.9	136	135.9	0.0	40.7	40.7
LOS by Move:	C	C	C	B	B	B	F	F	F	A	D	D
HCM2kAvgQ:	15	15	15	4	4	4	23	23	23	0	9	9

Note: Queue reported is the number of cars per lane.

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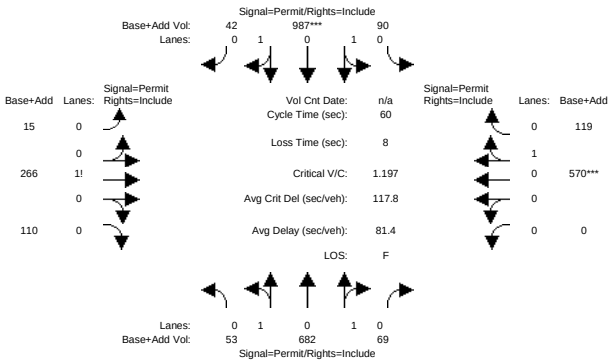
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #72: 16th St / S Van Ness



Street Name:	S Van Ness						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	29	0	29	29	0	29	23	23	0	0	23	23
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	53	682	69	90	987	42	15	266	110	0	570	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	682	69	90	987	42	15	266	110	0	570	119
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	682	69	90	987	42	15	266	110	0	570	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	55	703	71	93	1018	43	15	274	113	0	588	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	703	71	93	1018	43	15	274	113	0	588	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	703	71	93	1018	43	15	274	113	0	588	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.56	0.56	0.54	0.58	0.58	0.57	0.70	0.70	0.68	1.00	0.73	0.72
Lanes:	0.13	1.69	0.18	0.16	1.76	0.08	0.04	0.67	0.29	0.00	0.82	0.18
Final Sat.:	140	1803	182	177	1946	83	50	892	369	0	1142	238
Capacity Analysis Module:												
Vol/Sat:	0.39	0.39	0.39	0.52	0.52	0.52	0.31	0.31	0.31	0.00	0.51	0.51
Crit Moves:					****						****	
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.43	0.43	0.43	0.00	0.43	0.43
Volume/Cap:	0.89	0.89	0.89	1.20	1.20	1.20	0.72	0.72	0.72	0.00	1.20	1.20
Uniform Del:	15.6	15.6	15.6	16.9	16.9	16.9	14.1	14.1	14.1	0.0	17.1	17.1
IncremntDel:	12.8	12.8	12.8	98.8	98.8	98.8	7.6	7.6	7.6	0.0	104	104.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	28.3	28.3	28.3	115.7	116	115.7	21.6	21.6	21.6	0.0	121	121.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.3	28.3	28.3	115.7	116	115.7	21.6	21.6	21.6	0.0	121	121.4
LOS by Move:	C	C	C	F	F	F	C	C	C	A	F	F
HCM2kAvgQ:	12	12	11	25	25	25	6	6	6	0	27	26

Note: Queue reported is the number of cars per lane.

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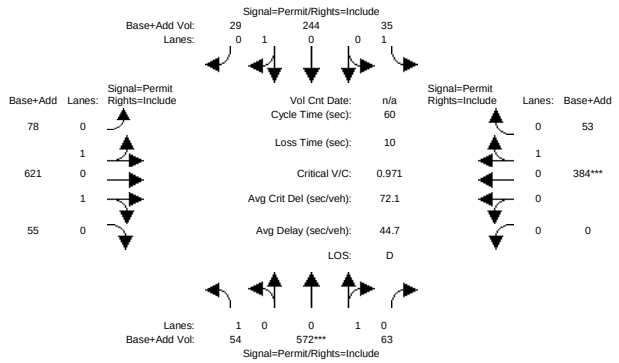
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	54	572	63	35	244	29	78	621	55	0	384	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	572	63	35	244	29	78	621	55	0	384	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	572	63	35	244	29	78	621	55	0	384	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	56	590	65	36	252	30	80	640	57	0	396	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	590	65	36	252	30	80	640	57	0	396	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	590	65	36	252	30	80	640	57	0	396	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.39	0.72	0.71	0.14	0.72	0.70	0.65	0.66	0.65	1.00	0.72	0.71
Lanes:	1.00	0.90	0.10	1.00	0.89	0.11	0.21	1.64	0.15	0.00	0.88	0.12
Final Sat.:	736	1231	136	257	1218	145	257	2048	181	0	1200	166
Capacity Analysis Module:												
Vol/Sat:	0.08	0.48	0.48	0.14	0.21	0.21	0.31	0.31	0.31	0.00	0.33	0.33
Crit Moves:		****									****	
Green/Cycle:	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.00	0.42	0.42
Volume/Cap:	0.18	1.15	1.15	0.30	0.50	0.50	0.75	0.75	0.75	0.00	0.79	0.79
Uniform Del:	11.0	17.5	17.5	11.7	12.9	12.9	14.8	14.8	14.8	0.0	15.2	15.2
IncremntDel:	1.3	86.3	86.3	6.3	3.1	3.1	5.0	5.0	5.0	0.0	10.8	10.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	12.3	104	103.8	18.0	15.9	15.9	19.8	19.8	19.8	0.0	26.0	26.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.3	104	103.8	18.0	15.9	15.9	19.8	19.8	19.8	0.0	26.0	26.0
LOS by Move:	B	F	F	B	B	B	B	B	B	A	C	C
HCM2kAvgQ:	1	27	26	0	4	4	6	6	6	0	7	7

Note: Queue reported is the number of cars per lane.

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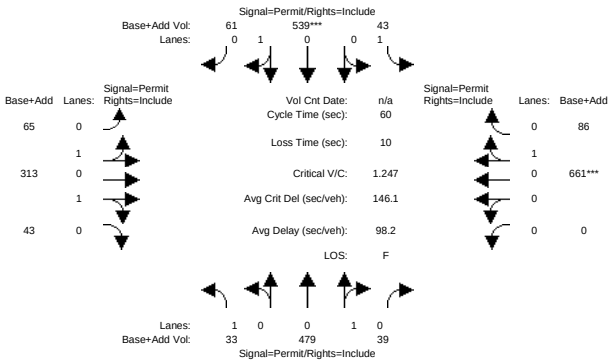
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #73: 16th St / Folsom



Street Name:	Folsom Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	24	24	24	24	24	24	25	25	25	25	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	33	479	39	43	539	61	65	313	43	0	661	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	479	39	43	539	61	65	313	43	0	661	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	479	39	43	539	61	65	313	43	0	661	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	35	504	41	45	567	64	68	329	45	0	696	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	504	41	45	567	64	68	329	45	0	696	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	504	41	45	567	64	68	329	45	0	696	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.13	0.72	0.71	0.20	0.72	0.70	0.63	0.63	0.63	1.00	0.72	0.71
Lanes:	1.00	0.92	0.08	1.00	0.90	0.10	0.31	1.48	0.21	0.00	0.88	0.12
Final Sat.:	251	1269	103	383	1226	139	372	1789	246	0	1207	157
Capacity Analysis Module:												
Vol/Sat:	0.14	0.40	0.40	0.12	0.46	0.46	0.18	0.18	0.18	0.00	0.58	0.58
Crit Moves:					****						****	
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.43	0.43	0.43	0.00	0.43	0.43
Volume/Cap:	0.29	0.99	0.99	0.30	1.16	1.16	0.42	0.42	0.42	0.00	1.33	1.33
Uniform Del:	12.2	17.9	17.9	12.2	18.0	18.0	11.8	11.8	11.8	0.0	17.0	17.0
IncremntDel:	6.0	36.7	36.7	4.8	89.9	89.9	1.3	1.3	1.3	0.0	160	159.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	18.2	54.7	54.7	17.1	108	107.9	13.1	13.1	13.1	0.0	177	176.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.2	54.7	54.7	17.1	108	107.9	13.1	13.1	13.1	0.0	177	176.8
LOS by Move:	B	D	D	B	F	F	B	B	B	A	F	F
HCM2kAvgQ:	1	17	17	1	25	24	3	3	3	0	38	37

Note: Queue reported is the number of cars per lane.

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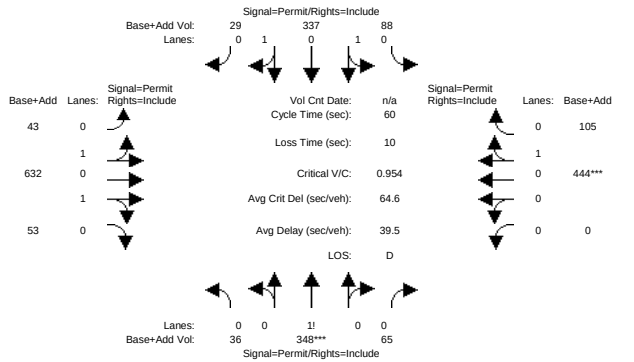
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #74: 16th St / Harrison



Street Name:	Harrison Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	19	19	19	19	0	19	31	31	0	0	31	31
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	36	348	65	88	337	29	43	632	53	0	444	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	348	65	88	337	29	43	632	53	0	444	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	348	65	88	337	29	43	632	53	0	444	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	38	366	68	93	355	31	45	665	56	0	467	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	366	68	93	355	31	45	665	56	0	467	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	366	68	93	355	31	45	665	56	0	467	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.68	0.66	0.50	0.51	0.49	0.67	0.67	0.67	1.00	0.71	0.70
Lanes:	0.08	0.77	0.15	0.39	1.48	0.13	0.12	1.73	0.15	0.00	0.81	0.19
Final Sat.:	103	1000	187	373	1429	123	150	2198	184	0	1091	258
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.25	0.25	0.25	0.30	0.30	0.30	0.00	0.43	0.43
Crit Moves:		****									****	
Green/Cycle:	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.52	0.52	0.00	0.52	0.52
Volume/Cap:	1.16	1.16	1.16	0.78	0.78	0.78	0.59	0.59	0.59	0.00	0.83	0.83
Uniform Del:	20.5	20.5	20.5	18.6	18.6	18.6	10.1	10.1	10.1	0.0	12.3	12.3
IncremntDel:	94.8	94.8	94.8	9.7	9.7	9.7	1.9	1.9	1.9	0.0	11.0	11.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	115.3	115	115.3	28.4	28.4	28.4	12.0	12.0	12.0	0.0	23.2	23.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	115.3	115	115.3	28.4	28.4	28.4	12.0	12.0	12.0	0.0	23.2	23.2
LOS by Move:	F	F	F	C	C	C	B	B	B	A	C	C
HCM2kAvgQ:	20	21	20	7	7	6	5	5	5	0	10	9

Note: Queue reported is the number of cars per lane.

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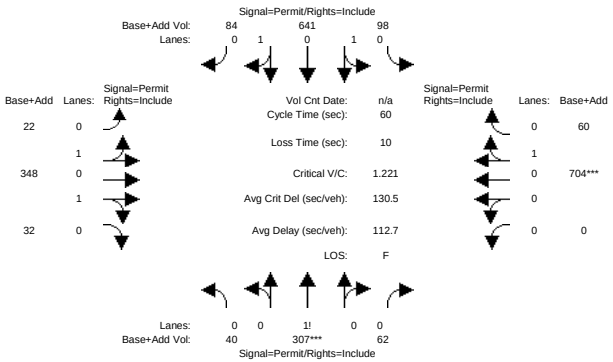
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #74: 16th St / Harrison



Street Name:	Harrison Street									16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	0	20	30	30	0	0	30	30
Y+R:	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	40	307	62	98	641	84	22	348	32	0	704	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	307	62	98	641	84	22	348	32	0	704	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	307	62	98	641	84	22	348	32	0	704	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	43	327	66	104	682	89	23	370	34	0	749	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	327	66	104	682	89	23	370	34	0	749	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	327	66	104	682	89	23	370	34	0	749	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.54	0.54	0.52	0.52	0.55	0.56	0.53	0.66	0.66	0.67	1.00	0.72	0.72
Lanes:	0.10	0.74	0.16	0.24	1.55	0.21	0.11	1.73	0.16	0.00	0.92	0.08
Final Sat.:	100	768	155	253	1657	217	138	2188	201	0	1265	108
Capacity Analysis Module:												
Vol/Sat:	0.43	0.43	0.43	0.41	0.41	0.41	0.17	0.17	0.17	0.00	0.59	0.59
Crit Moves:		****									****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.50	0.50	0.50	0.00	0.50	0.50
Volume/Cap:	1.28	1.28	1.28	1.23	1.23	1.23	0.34	0.34	0.34	0.00	1.18	1.18
Uniform Del:	20.0	20.0	20.0	20.0	20.0	20.0	9.0	9.0	9.0	0.0	15.0	15.0
IncremntDel:	145.0	145	145.0	117.4	117	117.4	0.7	0.7	0.7	0.0	97.1	97.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	165.0	165	165.0	137.4	137	137.4	9.8	9.8	9.8	0.0	112	112.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	165.0	165	165.0	137.4	137	137.4	9.8	9.8	9.8	0.0	112	112.1
LOS by Move:	F	F	F	F	F	F	A	A	A	A	F	F
HCM2kAvgQ:	23	23	22	22	23	22	3	3	3	0	30	29

Note: Queue reported is the number of cars per lane.

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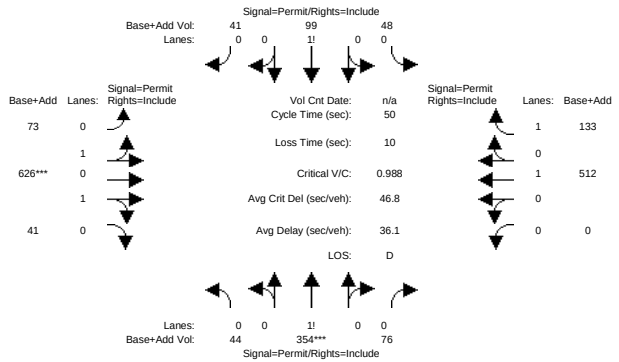
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #75: 16th St / Bryant



Street Name:	Bryant Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	20	20	20	20	20	20
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	44	354	76	48	99	41	73	626	41	0	512	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	354	76	48	99	41	73	626	41	0	512	133
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	354	76	48	99	41	73	626	41	0	512	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	45	365	78	49	102	42	75	645	42	0	528	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	365	78	49	102	42	75	645	42	0	528	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	365	78	49	102	42	75	645	42	0	528	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.63	0.61	0.54	0.55	0.53	0.53	0.53	0.53	1.00	0.85	0.44
Lanes:	0.09	0.75	0.16	0.25	0.53	0.22	0.20	1.69	0.11	0.00	1.00	1.00
Final Sat.:	110	884	190	262	541	224	199	1709	112	0	1620	844
Capacity Analysis Module:												
Vol/Sat:	0.41	0.41	0.41	0.19	0.19	0.19	0.38	0.38	0.38	0.00	0.33	0.16
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40
Volume/Cap:	1.03	1.03	1.03	0.47	0.47	0.47	0.94	0.94	0.94	0.00	0.81	0.41
Uniform Del:	15.0	15.0	15.0	11.1	11.1	11.1	14.5	14.5	14.5	0.0	13.3	10.7
IncremntDel:	50.0	50.0	50.0	3.8	3.8	3.8	20.7	20.7	20.7	0.0	10.8	3.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	65.0	65.0	65.0	14.9	14.9	14.9	35.2	35.2	35.2	0.0	24.1	14.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.0	65.0	65.0	14.9	14.9	14.9	35.2	35.2	35.2	0.0	24.1	14.3
LOS by Move:	E	E	E	B	B	B	D	D	D	A	C	B
HCM2kAvgQ:	16	16	15	2	2	2	8	8	8	0	10	2

Note: Queue reported is the number of cars per lane.

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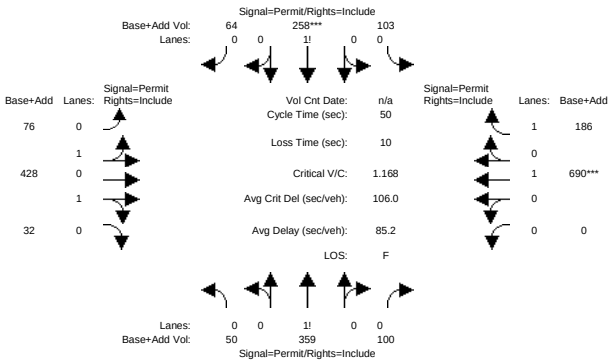
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #75: 16th St / Bryant



Street Name:	Bryant Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	20	20	20	20	20	20	20	20	20	20	20	20
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	50	359	100	103	258	64	76	428	32	0	690	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	359	100	103	258	64	76	428	32	0	690	186
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	359	100	103	258	64	76	428	32	0	690	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	53	378	105	108	272	67	80	451	34	0	726	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	378	105	108	272	67	80	451	34	0	726	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	378	105	108	272	67	80	451	34	0	726	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	0.61	0.58	0.48	0.49	0.47	0.40	0.40	0.40	1.00	0.85	0.43
Lanes:	0.10	0.70	0.20	0.24	0.61	0.15	0.28	1.60	0.12	0.00	1.00	1.00
Final Sat.:	112	805	224	223	558	138	215	1212	91	0	1620	812
Capacity Analysis Module:												
Vol/Sat:	0.47	0.47	0.47	0.49	0.49	0.49	0.37	0.37	0.37	0.00	0.45	0.24
Crit Moves:					****						****	
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.40	0.40
Volume/Cap:	1.17	1.17	1.17	1.22	1.22	1.22	0.93	0.93	0.93	0.00	1.12	0.60
Uniform Del:	15.0	15.0	15.0	15.0	15.0	15.0	14.3	14.3	14.3	0.0	15.0	11.9
IncremntDel:	99.1	99.1	99.1	119.7	120	119.7	22.8	22.8	22.8	0.0	73.3	8.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	114.1	114	114.1	134.7	135	134.7	37.1	37.1	37.1	0.0	88.3	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	114.1	114	114.1	134.7	135	134.7	37.1	37.1	37.1	0.0	88.3	19.9
LOS by Move:	F	F	F	F	F	F	D	D	D	A	F	B
HCM2kAvgQ:	22	22	21	18	18	18	6	6	6	0	26	4

Note: Queue reported is the number of cars per lane.

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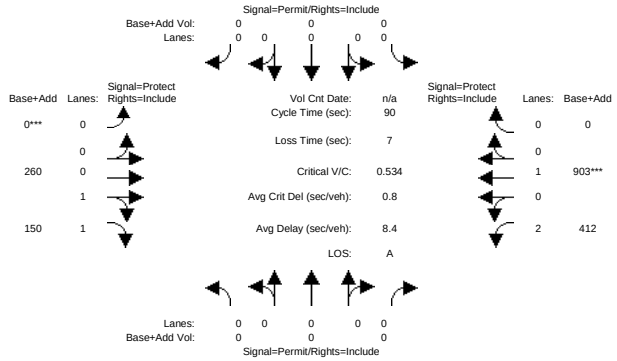
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 AM (2-lane 16th)

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	31	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	260	150	412	903	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	260	150	412	903	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	260	150	412	903	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	0	0	0	271	156	429	941	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	271	156	429	941	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	271	156	429	941	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.94	0.90	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	1796	1786	3432	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.09	0.13	0.50	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.26	0.21	0.53	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	23.1	9.0	0.5	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.1	0.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.1	0.8	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	6	3	3	5	0

Note: Queue reported is the number of cars per lane.

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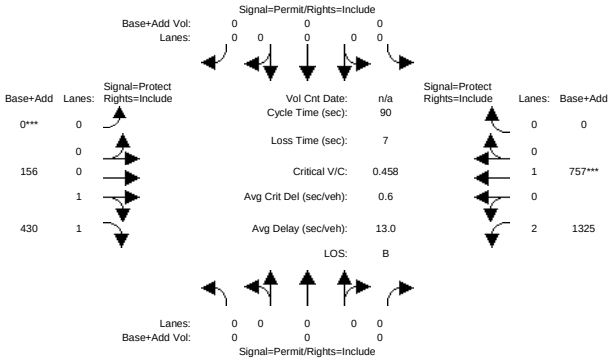
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 PM (2-lane 16th)

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	156	430	1325	757	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	156	430	1325	757	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	156	430	1325	757	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	166	457	1410	805	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	166	457	1410	805	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	166	457	1410	805	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.47	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	900	2482	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18	0.40	0.42	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.55	0.68	0.46	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.8	25.8	13.2	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.9	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.1	0.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.1	0.6	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	8	8	14	3	0

Note: Queue reported is the number of cars per lane.

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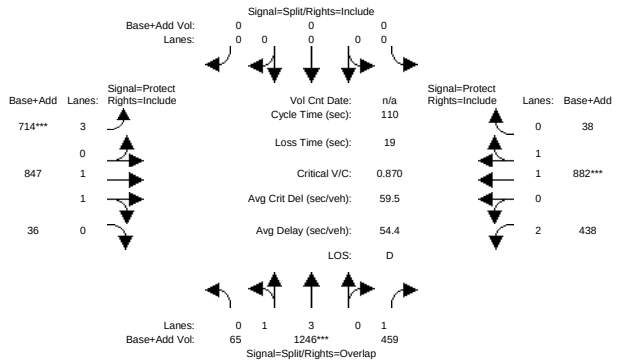
Year 2040 Plus LRDP (Mission Bay Variant; 2-Lane 16th Street; Mission Bay Only)

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	25	25	25	0	0	0	18	34	34	31	47	47
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	65	1246	459	0	0	0	714	847	36	438	882	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1246	459	0	0	0	714	847	36	438	882	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	1246	459	0	0	0	714	847	36	438	882	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	68	1312	483	0	0	0	752	892	38	461	928	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1312	483	0	0	0	752	892	38	461	928	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1312	483	0	0	0	752	892	38	461	928	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.72	1.00	1.00	1.00	0.79	0.81	0.81	0.79	0.81	0.81
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.92	0.08	2.00	1.92	0.08
Final Sat.:	291	5573	1377	0	0	0	4480	2936	125	2987	2934	126
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.35	0.00	0.00	0.00	0.17	0.30	0.30	0.15	0.32	0.32
Crit Moves:		****					****				****	
Green/Cycle:	0.23	0.23	0.52	0.00	0.00	0.00	0.17	0.31	0.31	0.28	0.43	0.43
Volume/Cap:	1.01	1.01	0.68	0.00	0.00	0.00	1.01	0.98	0.98	0.55	0.74	0.74
Uniform Del:	42.2	42.2	19.8	0.0	0.0	0.0	45.8	37.5	37.5	33.4	26.4	26.4
IncremntDel:	26.2	26.2	5.2	0.0	0.0	0.0	34.9	24.3	24.3	2.5	3.8	3.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.4	68.4	24.9	0.0	0.0	0.0	80.7	61.9	61.9	35.9	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.4	68.4	24.9	0.0	0.0	0.0	80.7	61.9	61.9	35.9	30.2	30.2
LOS by Move:	E	E	C	A	A	A	F	E	E	D	C	C
HCM2kAvgQ:	13	13	11	0	0	0	9	16	16	7	16	16

Note: Queue reported is the number of cars per lane.

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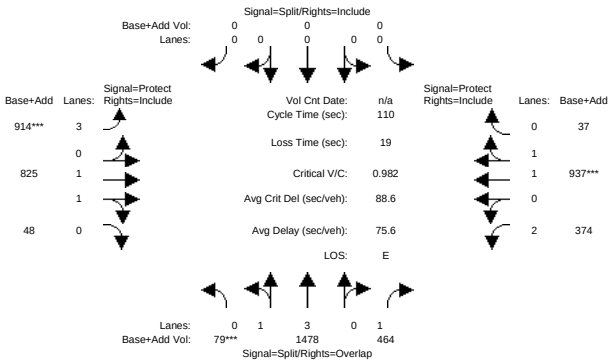
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #24: King/3rd



Street Name:	3rd Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	39	39	39	0	0	0	18	37	37	13	34	34
Y+R:	7.0	7.0	7.0	4.0	4.0	4.0	7.0	7.0	7.0	5.5	5.0	5.0
Volume Module:												
Base Vol:	79	1478	464	0	0	0	914	825	48	374	937	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1478	464	0	0	0	914	825	48	374	937	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	1478	464	0	0	0	914	825	48	374	937	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	81	1524	478	0	0	0	942	851	49	386	966	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	1524	478	0	0	0	942	851	49	386	966	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	1524	478	0	0	0	942	851	49	386	966	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.77	0.72	1.00	1.00	1.00	0.79	0.80	0.80	0.79	0.81	0.81
Lanes:	0.20	3.80	1.00	0.00	0.00	0.00	3.00	1.89	0.11	2.00	1.92	0.08
Final Sat.:	297	5566	1377	0	0	0	4480	2886	168	2987	2944	116
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.35	0.00	0.00	0.00	0.21	0.29	0.29	0.13	0.33	0.33
Crit Moves:	****						****				****	
Green/Cycle:	0.35	0.35	0.49	0.00	0.00	0.00	0.16	0.34	0.34	0.13	0.31	0.31
Volume/Cap:	0.77	0.77	0.72	0.00	0.00	0.00	1.29	0.86	0.86	0.98	1.06	1.06
Uniform Del:	31.6	31.6	22.3	0.0	0.0	0.0	46.0	33.8	33.8	47.7	38.0	38.0
IncremntDel:	2.9	2.9	6.4	0.0	0.0	0.0	138.7	9.4	9.4	41.8	47.0	47.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.4	34.4	28.7	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.0	85.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	34.4	28.7	0.0	0.0	0.0	184.7	43.2	43.2	89.5	85.0	85.0
LOS by Move:	C	C	C	A	A	A	F	D	D	F	F	F
HCM2kAvgQ:	12	12	12	0	0	0	19	14	14	11	26	26

Note: Queue reported is the number of cars per lane.

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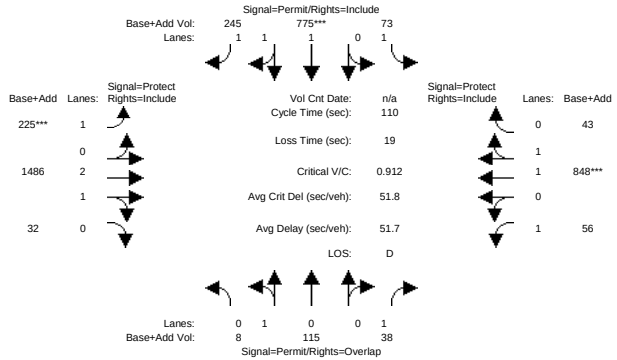
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	35	35	35	35	35	35	19	41	41	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	115	38	73	775	245	225	1486	32	56	848	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	115	38	73	775	245	225	1486	32	56	848	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	115	38	73	775	245	225	1486	32	56	848	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	9	124	41	78	833	263	242	1598	34	60	912	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	124	41	78	833	263	242	1598	34	60	912	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	124	41	78	833	263	242	1598	34	60	912	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.72	0.57	0.78	0.78	0.81	0.77	0.77	0.81	0.80	0.80
Lanes:	0.07	0.93	1.00	1.00	2.00	1.00	1.00	2.94	0.06	1.00	1.90	0.10
Final Sat.:	99	1421	1377	1074	2968	1484	1539	4275	92	1539	2882	146
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.03	0.07	0.28	0.18	0.16	0.37	0.37	0.04	0.32	0.32
Crit Moves:					****		****				****	
Green/Cycle:	0.32	0.32	0.45	0.32	0.32	0.32	0.17	0.37	0.37	0.14	0.34	0.34
Volume/Cap:	0.27	0.27	0.07	0.23	0.88	0.56	0.91	1.00	1.00	0.29	0.94	0.94
Uniform Del:	28.0	28.0	16.9	27.6	35.5	31.1	44.7	34.5	34.5	42.7	35.4	35.4
IncremntDel:	1.4	1.4	0.2	1.6	9.2	1.1	36.1	22.9	22.9	3.4	17.1	17.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	29.4	29.4	17.1	29.1	44.8	32.2	80.8	57.4	57.4	46.1	52.5	52.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	29.4	17.1	29.1	44.8	32.2	80.8	57.4	57.4	46.1	52.5	52.5
LOS by Move:	C	C	B	C	D	C	F	E	E	D	D	D
HCM2kAvgQ:	3	3	1	2	17	8	11	27	27	2	19	19

Note: Queue reported is the number of cars per lane.

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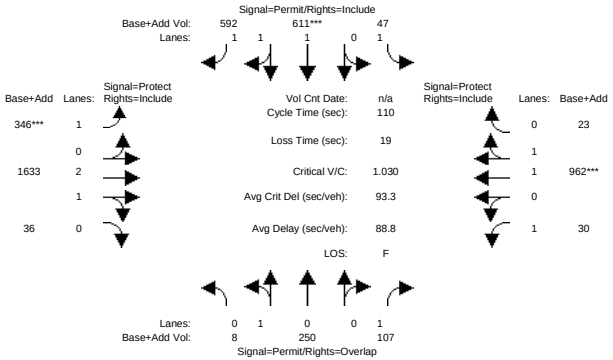
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #25: King/4th



Street Name:	4th Street						King Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	39	39	39	39	39	39	15	37	37	15	37	37
Y+R:	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Volume Module:												
Base Vol:	8	250	107	47	611	592	346	1633	36	30	962	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	250	107	47	611	592	346	1633	36	30	962	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	250	107	47	611	592	346	1633	36	30	962	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	8	258	110	48	630	610	357	1684	37	31	992	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	258	110	48	630	610	357	1684	37	31	992	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	258	110	48	630	610	357	1684	37	31	992	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.84	0.72	0.41	0.75	0.75	0.81	0.80	0.77	0.81	0.81	0.81
Lanes:	0.03	0.97	1.00	1.00	1.52	1.48	1.00	2.93	0.07	1.00	1.95	0.05
Final Sat.:	49	1539	1377	779	2172	2105	1539	4484	99	1539	2998	72
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.08	0.06	0.29	0.29	0.23	0.38	0.38	0.02	0.33	0.33
Crit Moves:					****		****				****	
Green/Cycle:	0.35	0.35	0.49	0.35	0.35	0.35	0.14	0.34	0.34	0.14	0.34	0.34
Volume/Cap:	0.47	0.47	0.16	0.18	0.82	0.82	1.70	1.12	1.12	0.15	0.98	0.98
Uniform Del:	27.5	27.5	15.5	24.4	32.3	32.3	47.5	36.5	36.5	41.9	36.2	36.2
IncremntDel:	2.8	2.8	0.5	1.4	5.0	5.0	334.2	61.8	61.8	1.5	24.3	24.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.4	30.4	16.0	25.8	37.3	37.3	381.7	98.3	98.3	43.3	60.5	60.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	30.4	16.0	25.8	37.3	37.3	381.7	98.3	98.3	43.3	60.5	60.5
LOS by Move:	C	C	B	C	D	D	F	F	F	D	E	E
HCM2kAvgQ:	7	7	2	1	16	16	31	33	32	1	18	18

Note: Queue reported is the number of cars per lane.

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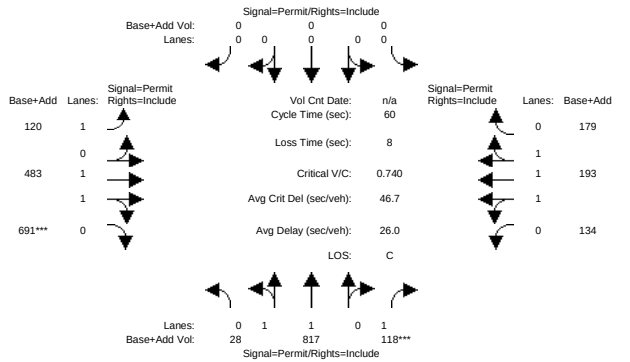
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	21	0	21	0	0	31	31	31	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	817	118	0	0	0	120	483	691	134	193	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	817	118	0	0	0	120	483	691	134	193	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	817	118	0	0	0	120	483	691	134	193	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	888	128	0	0	0	130	525	751	146	210	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	888	128	0	0	0	130	525	751	146	210	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	888	128	0	0	0	130	525	751	146	210	195
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.63	1.00	1.00	1.00	0.38	0.74	0.74	0.47	0.47	0.47
Lanes:	0.07	1.93	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.82	1.18	1.00
Final Sat.:	102	2965	1205	0	0	0	718	1404	1404	738	1063	901
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.11	0.00	0.00	0.00	0.18	0.37	0.53	0.20	0.20	0.22
Crit Moves:			****						****			
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.00	0.52	0.52	0.52	0.52	0.52	0.52
Volume/Cap:	0.86	0.86	0.30	0.00	0.00	0.00	0.35	0.72	1.04	0.38	0.38	0.42
Uniform Del:	18.1	18.1	14.2	0.0	0.0	0.0	8.6	11.2	14.5	8.7	8.7	8.9
IncremntDel:	8.8	8.8	1.9	0.0	0.0	0.0	2.6	2.6	35.2	0.8	0.8	1.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.9	26.9	16.0	0.0	0.0	0.0	11.2	13.8	49.7	9.5	9.5	9.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.9	26.9	16.0	0.0	0.0	0.0	11.2	13.8	49.7	9.5	9.5	9.9
LOS by Move:	C	C	B	A	A	A	B	B	D	A	A	A
HCM2kAvgQ:	12	12	2	0	0	0	2	10	25	3	3	3

Note: Queue reported is the number of cars per lane.

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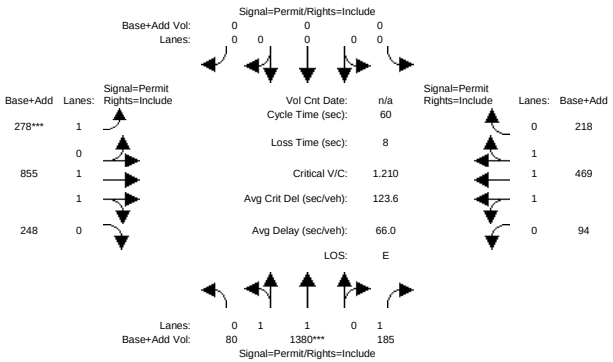
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #26: 7th St/Brannan



Street Name:	7th Street						Brannan Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	24	0	24	0	0	28	28	28	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	80	1380	185	0	0	0	278	855	248	94	469	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	1380	185	0	0	0	278	855	248	94	469	218
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	1380	185	0	0	0	278	855	248	94	469	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	1423	191	0	0	0	287	881	256	97	484	225
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	1423	191	0	0	0	287	881	256	97	484	225
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	1423	191	0	0	0	287	881	256	97	484	225
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.63	1.00	1.00	1.00	0.27	0.78	0.78	0.50	0.50	0.50
Lanes:	0.11	1.89	1.00	0.00	0.00	0.00	1.00	1.55	0.45	0.36	1.80	0.84
Final Sat.:	168	2890	1205	0	0	0	515	2306	669	343	1712	796
Capacity Analysis Module:												
Vol/Sat:	0.49	0.49	0.16	0.00	0.00	0.00	0.56	0.38	0.38	0.28	0.28	0.28
Crit Moves:		****						****				
Green/Cycle:	0.41	0.41	0.41	0.00	0.00	0.00	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	1.21	1.21	0.39	0.00	0.00	0.00	1.21	0.83	0.83	0.61	0.61	0.61
Uniform Del:	17.8	17.8	12.5	0.0	0.0	0.0	16.2	14.2	14.2	12.2	12.2	12.2
IncremntDel:	102.1	102	2.3	0.0	0.0	0.0	127.0	6.0	6.0	2.2	2.2	2.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	119.9	120	14.9	0.0	0.0	0.0	143.2	20.2	20.2	14.4	14.4	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	119.9	120	14.9	0.0	0.0	0.0	143.2	20.2	20.2	14.4	14.4	14.4
LOS by Move:	F	F	B	A	A	A	F	C	C	B	B	B
HCM2kAvgQ:	35	35	3	0	0	0	15	13	13	5	5	5

Note: Queue reported is the number of cars per lane.

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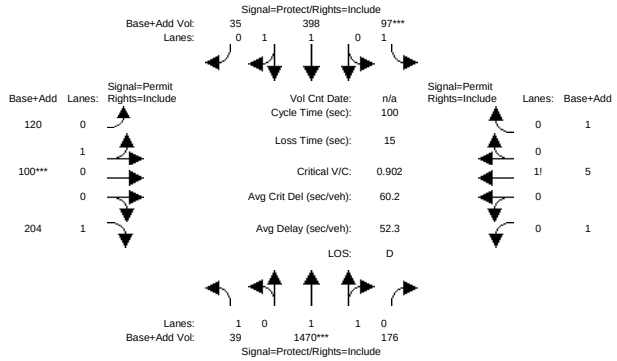
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	22	50	50	10	38	38	25	25	25	25	25	25
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	39	1470	176	97	398	35	120	100	204	1	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	1470	176	97	398	35	120	100	204	1	5	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	1470	176	97	398	35	120	100	204	1	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	41	1547	185	102	419	37	126	105	215	1	5	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	1547	185	102	419	37	126	105	215	1	5	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	1547	185	102	419	37	126	105	215	1	5	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.88	0.80	0.81	0.80	0.80	0.70	0.70	0.72	0.81	0.81	0.81
Lanes:	1.00	1.77	0.23	1.00	1.84	0.16	0.55	0.45	1.00	0.14	0.72	0.14
Final Sat.:	1539	2945	353	1539	2796	246	721	601	1377	221	1104	221
Capacity Analysis Module:												
Vol/Sat:	0.03	0.53	0.53	0.07	0.15	0.15	0.18	0.18	0.16	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.22	0.50	0.50	0.10	0.38	0.38	0.25	0.25	0.25	0.25	0.25	0.25
Volume/Cap:	0.12	1.05	1.05	0.66	0.39	0.39	0.70	0.70	0.62	0.02	0.02	0.02
Uniform Del:	31.3	25.0	25.0	43.4	22.6	22.6	34.1	34.1	33.3	28.3	28.3	28.3
IncremntDel:	0.7	36.9	36.9	20.3	1.0	1.0	11.7	11.7	8.3	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.0	61.9	61.9	63.7	23.6	23.6	45.8	45.8	41.6	28.4	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.0	61.9	61.9	63.7	23.6	23.6	45.8	45.8	41.6	28.4	28.4	28.4
LOS by Move:	C	E	E	E	C	C	D	D	D	C	C	C
HCM2kAvgQ:	1	33	30	3	5	5	7	7	6	0	0	0

Note: Queue reported is the number of cars per lane.

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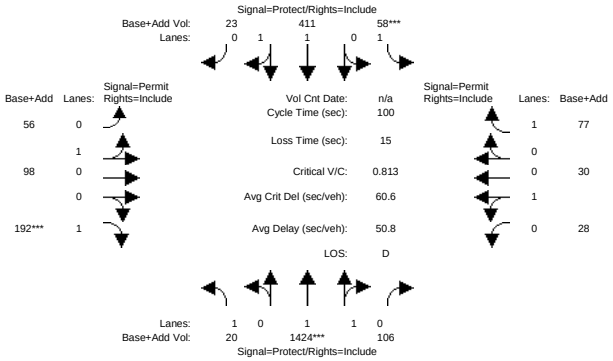
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #27: Channel/3rd



Street Name:	3rd Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	48	48	8	35	35	29	29	29	29	29	29
Y+R:	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	20	1424	106	58	411	23	56	98	192	28	30	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	1424	106	58	411	23	56	98	192	28	30	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1424	106	58	411	23	56	98	192	28	30	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	21	1499	112	61	433	24	59	103	202	29	32	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1499	112	61	433	24	59	103	202	29	32	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	1499	112	61	433	24	59	103	202	29	32	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.84	0.80	0.81	0.80	0.80	0.74	0.74	0.72	0.71	0.71	0.72
Lanes:	1.00	1.86	0.14	1.00	1.89	0.11	0.36	0.64	1.00	0.48	0.52	1.00
Final Sat.:	1539	2969	221	1539	2892	162	511	894	1377	652	698	1377
Capacity Analysis Module:												
Vol/Sat:	0.01	0.50	0.50	0.04	0.15	0.15	0.12	0.12	0.15	0.05	0.05	0.06
Crit Moves:		****		****					****			
Green/Cycle:	0.20	0.48	0.48	0.08	0.36	0.36	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.07	1.05	1.05	0.50	0.42	0.42	0.40	0.40	0.51	0.16	0.16	0.20
Uniform Del:	32.1	26.0	26.0	44.1	24.4	24.4	28.5	28.5	29.5	26.4	26.4	26.8
IncremntDel:	0.4	38.0	38.0	13.6	1.2	1.2	2.9	2.9	4.5	0.8	0.8	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.6	64.0	64.0	57.6	25.5	25.5	31.4	31.4	34.1	27.2	27.2	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	64.0	64.0	57.6	25.5	25.5	31.4	31.4	34.1	27.2	27.2	27.9
LOS by Move:	C	E	E	E	C	C	C	C	C	C	C	C
HCM2kAvgQ:	0	30	29	2	6	6	4	4	5	1	1	2

Note: Queue reported is the number of cars per lane.

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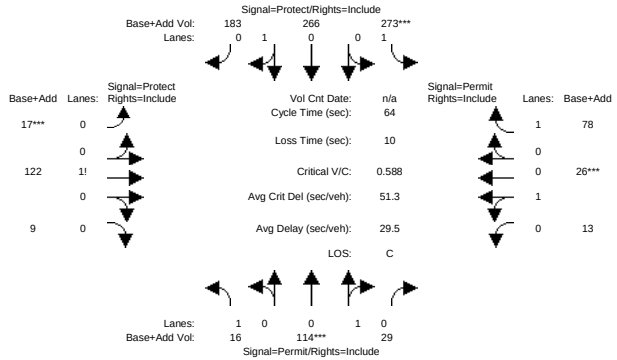
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	21	21	14	35	0	9	19	0	0	10	0
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	16	114	29	273	266	183	17	122	9	13	26	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	114	29	273	266	183	17	122	9	13	26	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	114	29	273	266	183	17	122	9	13	26	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	19	134	34	321	313	215	20	144	11	15	31	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	134	34	321	313	215	20	144	11	15	31	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	134	34	321	313	215	20	144	11	15	31	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.22	0.66	0.66	0.81	0.80	0.80	0.74	0.74	0.74	0.84	0.84	0.72
Lanes:	1.00	0.80	0.20	1.00	0.59	0.41	0.11	0.83	0.06	0.33	0.67	1.00
Final Sat.:	410	1002	255	1539	901	620	161	1153	85	531	1062	1377
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.13	0.21	0.35	0.35	0.12	0.12	0.12	0.03	0.03	0.07
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.14	0.41	0.41	0.95	0.63	0.63	0.89	0.42	0.42	0.18	0.18	0.43
Uniform Del:	15.1	16.7	16.7	24.7	10.1	10.1	27.0	18.1	18.1	23.5	23.5	24.4
IncremntDel:	2.2	3.0	3.0	38.6	3.7	3.7	39.9	3.1	3.1	1.6	1.6	6.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	17.3	19.6	19.6	63.2	13.7	13.7	66.9	21.2	21.2	25.1	25.1	30.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.3	19.6	19.6	63.2	13.7	13.7	66.9	21.2	21.2	25.1	25.1	30.5
LOS by Move:	B	B	B	E	B	B	E	C	C	C	C	C
HCM2kAvgQ:	0	3	3	7	7	7	2	3	1	1	1	2

Note: Queue reported is the number of cars per lane.

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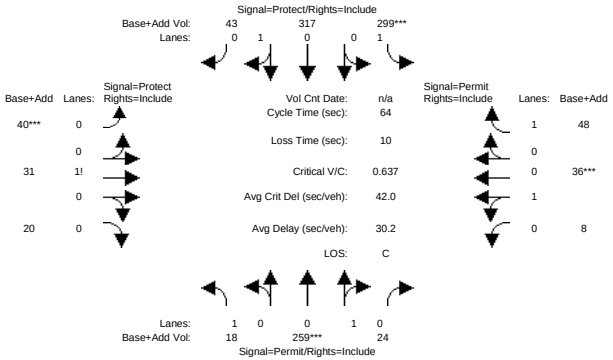
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #28: Channel/4th



Street Name:	4th Street						Channel Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	21	21	21	14	35	35	9	19	19	10	10	10
Y+R:	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0
Volume Module:												
Base Vol:	18	259	24	299	317	43	40	31	20	8	36	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	259	24	299	317	43	40	31	20	8	36	48
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	259	24	299	317	43	40	31	20	8	36	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	19	273	25	315	334	45	42	33	21	8	38	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	273	25	315	334	45	42	33	21	8	38	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	273	25	315	334	45	42	33	21	8	38	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.34	0.67	0.67	0.81	0.84	0.84	0.71	0.71	0.71	0.84	0.84	0.72
Lanes:	1.00	0.92	0.08	1.00	0.88	0.12	0.44	0.34	0.22	0.18	0.82	1.00
Final Sat.:	651	1171	109	1539	1401	190	591	458	296	291	1309	1377
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.23	0.20	0.24	0.24	0.07	0.07	0.07	0.03	0.03	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.33	0.33	0.33	0.22	0.55	0.55	0.14	0.30	0.30	0.16	0.16	0.16
Volume/Cap:	0.09	0.71	0.71	0.93	0.44	0.44	0.51	0.24	0.24	0.19	0.19	0.23
Uniform Del:	14.9	18.8	18.8	24.5	8.6	8.6	25.4	17.0	17.0	23.5	23.5	23.6
IncremntDel:	0.8	9.7	9.7	34.9	1.6	1.6	9.4	1.4	1.4	1.6	1.6	2.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.7	28.6	28.6	59.4	10.2	10.2	34.8	18.4	18.4	25.1	25.1	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.7	28.6	28.6	59.4	10.2	10.2	34.8	18.4	18.4	25.1	25.1	26.2
LOS by Move:	B	C	C	E	B	B	C	B	B	C	C	C
HCM2kAvgQ:	0	7	7	7	4	4	2	1	1	1	1	1

Note: Queue reported is the number of cars per lane.

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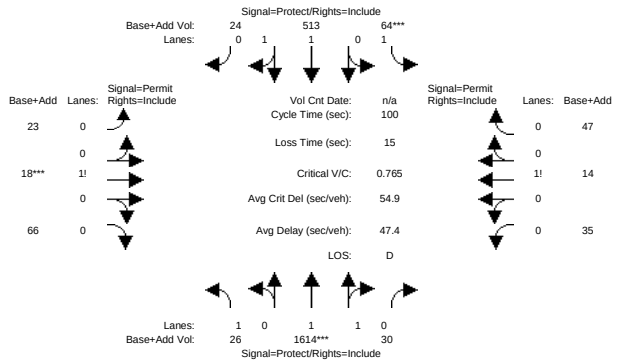
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	18	50	50	5	37	37	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	26	1614	30	64	513	24	23	18	66	35	14	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	1614	30	64	513	24	23	18	66	35	14	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	1614	30	64	513	24	23	18	66	35	14	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	27	1699	32	67	540	25	24	19	69	37	15	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1699	32	67	540	25	24	19	69	37	15	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1699	32	67	540	25	24	19	69	37	15	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.89	0.81	0.81	0.80	0.80	0.64	0.64	0.64	0.69	0.69	0.69
Lanes:	1.00	1.96	0.04	1.00	1.91	0.09	0.21	0.17	0.62	0.36	0.15	0.49
Final Sat.:	1539	3309	62	1539	2921	137	260	204	747	481	192	645
Capacity Analysis Module:												
Vol/Sat:	0.02	0.51	0.51	0.04	0.18	0.18	0.09	0.09	0.09	0.08	0.08	0.08
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.50	0.50	0.05	0.37	0.37	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.10	1.03	1.03	0.88	0.50	0.50	0.31	0.31	0.31	0.26	0.26	0.26
Uniform Del:	34.2	25.0	25.0	47.2	24.3	24.3	27.0	27.0	27.0	26.5	26.5	26.5
IncremntDel:	0.7	29.1	29.1	71.9	1.6	1.6	2.2	2.2	2.2	1.6	1.6	1.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.9	54.1	54.1	119.1	25.9	25.9	29.2	29.2	29.2	28.1	28.1	28.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	54.1	54.1	119.1	25.9	25.9	29.2	29.2	29.2	28.1	28.1	28.1
LOS by Move:	C	D	D	F	C	C	C	C	C	C	C	C
HCM2kAvgQ:	1	38	35	3	7	7	3	3	3	2	2	2

Note: Queue reported is the number of cars per lane.

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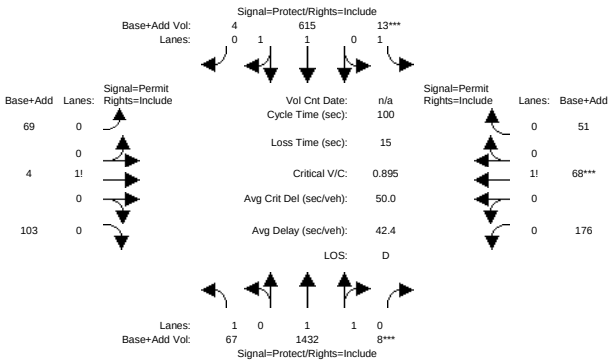
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #29: Mission Rock/3rd



Street Name:	3rd Street						Mission Rock					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	9	47	47	5	43	43	33	33	33	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	67	1432	8	13	615	4	69	4	103	176	68	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	1432	8	13	615	4	69	4	103	176	68	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	1432	8	13	615	4	69	4	103	176	68	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	71	1507	8	14	647	4	73	4	108	185	72	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	1507	8	14	647	4	73	4	108	185	72	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	1507	8	14	647	4	73	4	108	185	72	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	0.81	0.81	0.81	0.81	0.54	0.54	0.54	0.58	0.58	0.58
Lanes:	1.00	1.99	0.01	1.00	1.99	0.01	0.39	0.02	0.59	0.60	0.23	0.17
Final Sat.:	1539	3211	18	1539	3056	20	399	23	596	656	254	190
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.47	0.01	0.21	0.21	0.18	0.18	0.18	0.28	0.28	0.28
Crit Moves:			****	****							****	
Green/Cycle:	0.09	0.47	0.47	0.05	0.43	0.43	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.51	1.00	1.00	0.18	0.49	0.49	0.55	0.55	0.55	0.86	0.86	0.86
Uniform Del:	43.4	26.5	26.5	45.5	20.6	20.6	27.4	27.4	27.4	31.3	31.3	31.3
IncremntDel:	12.7	22.8	22.8	5.0	1.3	1.3	6.4	6.4	6.4	21.9	21.9	21.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.1	49.3	49.3	50.5	21.9	21.9	33.8	33.8	33.8	53.2	53.2	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.1	49.3	49.3	50.5	21.9	21.9	33.8	33.8	33.8	53.2	53.2	53.2
LOS by Move:	E	D	D	D	C	C	C	C	C	D	D	D
HCM2kAvgQ:	3	32	31	0	8	8	5	5	5	12	12	12

Note: Queue reported is the number of cars per lane.

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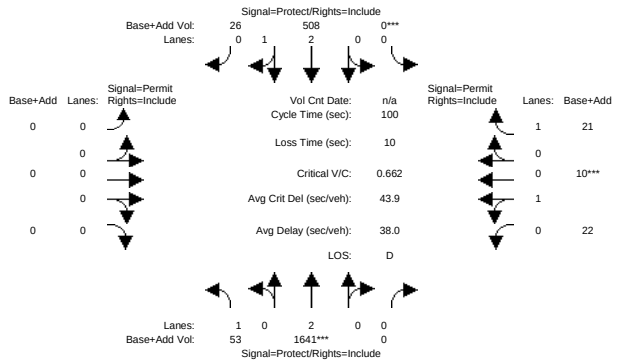
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	53	1641	0	0	508	26	0	0	0	22	10	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	1641	0	0	508	26	0	0	0	22	10	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	1641	0	0	508	26	0	0	0	22	10	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	57	1765	0	0	546	28	0	0	0	24	11	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	1765	0	0	546	28	0	0	0	24	11	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	1765	0	0	546	28	0	0	0	24	11	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.80	0.80	0.63
Lanes:	1.00	2.00	0.00	0.00	2.85	0.15	0.00	0.00	0.00	0.69	0.31	1.00
Final Sat.:	1539	3079	0	0	4179	214	0	0	0	1045	475	1205
Capacity Analysis Module:												
Vol/Sat:	0.04	0.57	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.02	0.02	0.02
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	0.24	1.01	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.07	0.07	0.06
Uniform Del:	37.2	21.5	0.0	0.0	19.6	19.6	0.0	0.0	0.0	23.0	23.0	22.9
IncremntDel:	2.4	22.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Delay/Veh:	39.6	44.3	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.2	23.2	23.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.6	44.3	0.0	0.0	20.0	20.0	0.0	0.0	0.0	23.2	23.2	23.1
LOS by Move:	D	D	A	A	C	C	A	A	A	C	C	C
HCM2kAvgQ:	1	30	0	0	4	4	0	0	0	1	1	0

Note: Queue reported is the number of cars per lane.

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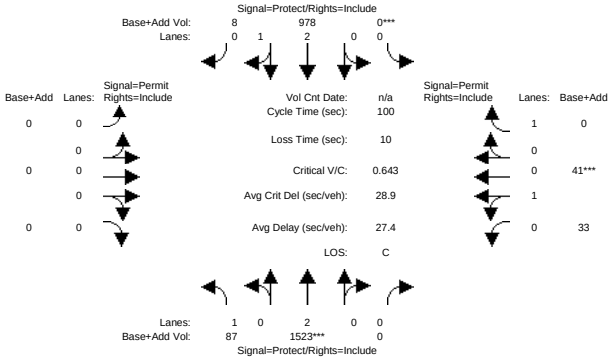
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #30: Mission Bay North/3rd



Street Name:	3rd Street						Mission Bay North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	57	57	15	38	38	0	0	0	33	33	33
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	87	1523	0	0	978	8	0	0	0	33	41	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	1523	0	0	978	8	0	0	0	33	41	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	1523	0	0	978	8	0	0	0	33	41	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	93	1620	0	0	1040	9	0	0	0	35	44	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	1620	0	0	1040	9	0	0	0	35	44	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	1620	0	0	1040	9	0	0	0	35	44	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	1.00	1.00	0.78	0.78	1.00	1.00	1.00	0.80	0.80	1.00
Lanes:	1.00	2.00	0.00	0.00	2.98	0.02	0.00	0.00	0.00	0.45	0.55	1.00
Final Sat.:	1539	3079	0	0	4384	36	0	0	0	674	838	1900
Capacity Analysis Module:												
Vol/Sat:	0.06	0.53	0.00	0.00	0.24	0.24	0.00	0.00	0.00	0.05	0.05	0.00
Crit Moves:		****		****							****	
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.33	0.33	0.00
Volume/Cap:	0.39	0.92	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.16	0.16	0.00
Uniform Del:	38.1	19.5	0.0	0.0	22.3	22.3	0.0	0.0	0.0	23.7	23.7	0.0
IncremntDel:	4.8	9.6	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
Delay/Veh:	42.9	29.2	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.9	29.2	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.4	24.4	0.0
LOS by Move:	D	C	A	A	C	C	A	A	A	C	C	A
HCM2kAvgQ:	2	24	0	0	9	9	0	0	0	2	2	0

Note: Queue reported is the number of cars per lane.

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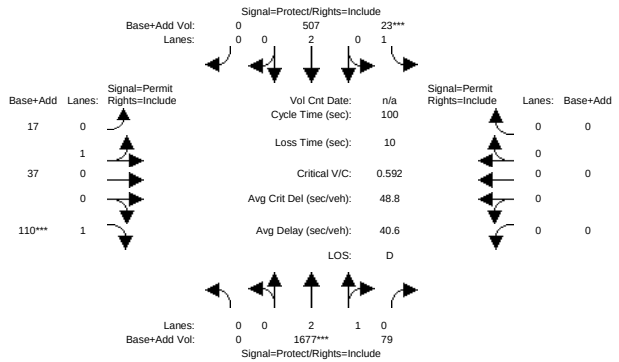
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1677	79	23	507	0	17	37	110	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1677	79	23	507	0	17	37	110	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1677	79	23	507	0	17	37	110	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1765	83	24	534	0	18	39	116	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1765	83	24	534	0	18	39	116	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1765	83	24	534	0	18	39	116	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.84	0.84	0.63	1.00	1.00	1.00
Lanes:	0.00	2.87	0.13	1.00	2.00	0.00	0.31	0.69	1.00	0.00	0.00	0.00
Final Sat.:	0	4195	198	1539	3079	0	502	1093	1205	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.42	0.42	0.02	0.17	0.00	0.04	0.04	0.10	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.42	0.42	0.15	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	1.00	1.00	0.10	0.30	0.00	0.11	0.11	0.29	0.00	0.00	0.00
Uniform Del:	0.0	29.0	29.0	36.7	11.2	0.0	23.3	23.3	24.8	0.0	0.0	0.0
IncremntDel:	0.0	21.4	21.4	0.9	0.4	0.0	0.4	0.4	1.8	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	50.4	50.4	37.6	11.6	0.0	23.7	23.7	26.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	50.4	50.4	37.6	11.6	0.0	23.7	23.7	26.7	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	28	28	1	5	0	1	1	3	0	0	0

Note: Queue reported is the number of cars per lane.

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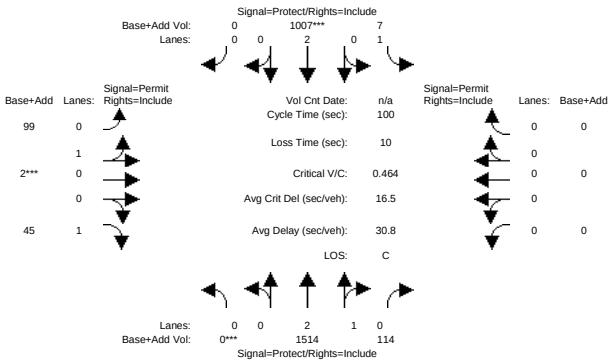
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #31: Mission Bay South/3rd



Street Name:	3rd Street						Mission Bay South					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	34	34	34	15	57	57	33	33	33	0	0	0
Y+R:	8.0	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1514	114	7	1007	0	99	2	45	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1514	114	7	1007	0	99	2	45	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1514	114	7	1007	0	99	2	45	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1594	120	7	1060	0	104	2	47	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1594	120	7	1060	0	104	2	47	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1594	120	7	1060	0	104	2	47	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.81	0.81	1.00	0.77	0.77	0.63	1.00	1.00	1.00
Lanes:	0.00	2.79	0.21	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	4073	307	1539	3079	0	1426	29	1205	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.00	0.34	0.00	0.07	0.07	0.04	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.00	0.41	0.41	0.16	0.57	0.00	0.33	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.95	0.95	0.03	0.60	0.00	0.22	0.22	0.12	0.00	0.00	0.00
Uniform Del:	0.0	28.4	28.4	35.6	14.1	0.0	24.2	24.2	23.4	0.0	0.0	0.0
IncremntDel:	0.0	12.2	12.2	0.2	1.6	0.0	1.1	1.1	0.6	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	40.6	40.6	35.9	15.6	0.0	25.3	25.3	24.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.6	40.6	35.9	15.6	0.0	25.3	25.3	24.0	0.0	0.0	0.0
LOS by Move:	A	D	D	D	B	A	C	C	C	A	A	A
HCM2kAvgQ:	0	24	24	0	12	0	2	2	1	0	0	0

Note: Queue reported is the number of cars per lane.

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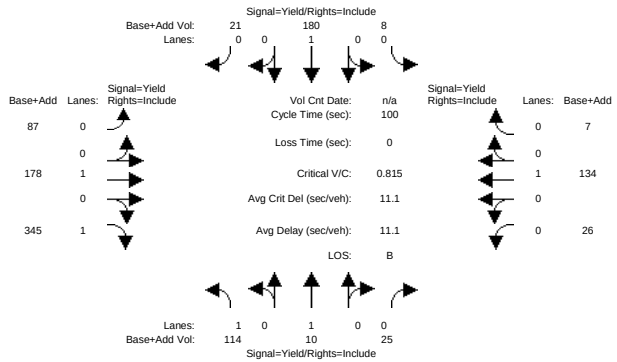
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	114	10	25	8	180	21	87	178	345	26	134	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	10	25	8	180	21	87	178	345	26	134	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	10	25	8	180	21	87	178	345	26	134	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	158	14	35	11	250	29	121	247	479	36	186	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	14	35	11	250	29	121	247	479	36	186	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	14	35	11	250	29	121	247	479	36	186	10
PCE Module:												
AutoPCE:	158	14	35	11	250	29	121	247	479	36	186	10
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	158	14	35	11	250	29	121	247	479	36	186	10
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	379			381			297			293		
MaxVolume:	995			995			1040			1042		
PedVolume:	0			0			0			0		
AdjMaxVol:	995			995			1040			1042		
ApproachVol:	207			290			847			232		
ApproachV/C:	0.21			0.29			0.82			0.22		
ApproachDel:	4.6			5.1			16.6			4.4		
ApproachLOS:	A			A			C			A		
Queue:	0.8			1.2			9.5			0.9		

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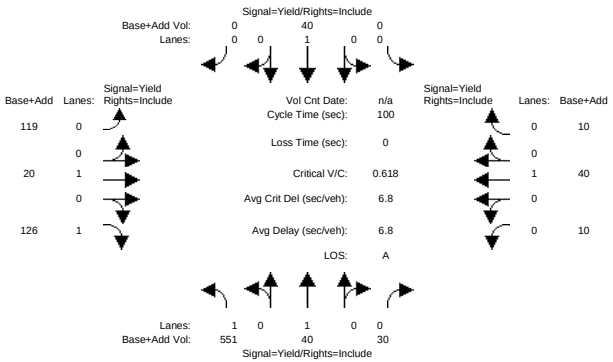
Level Of Service Computation Report
FHWA Roundabout (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #32: Mission Bay/Owens



Street Name:	Owens Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	551	40	30	0	40	0	119	20	126	10	40	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	40	30	0	40	0	119	20	126	10	40	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	551	40	30	0	40	0	119	20	126	10	40	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	612	44	33	0	44	0	132	22	140	11	44	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	612	44	33	0	44	0	132	22	140	11	44	11
PCE Module:												
AutoPCE:	612	44	33	0	44	0	132	22	140	11	44	11
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	612	44	33	0	44	0	132	22	140	11	44	11
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	154			668			56			789		
MaxVolume:	1117			839			1170			774		
PedVolume:	0			0			0			0		
AdjMaxVol:	1117			839			1170			774		
ApproachVol:	690			44			294			67		
ApproachV/C:	0.62			0.05			0.25			0.09		
ApproachDel:	8.3			4.5			4.1			5.1		
ApproachLOS:	A			A			A			A		
Queue:	4.5			0.2			1.0			0.3		

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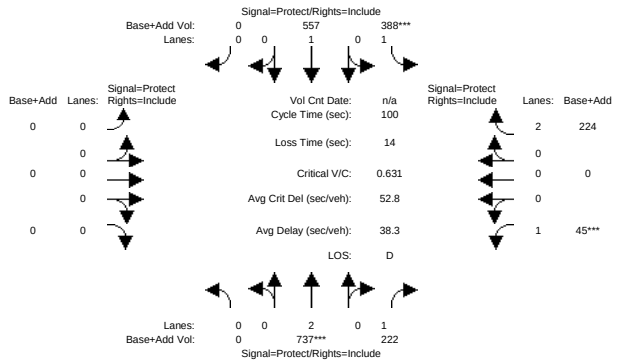
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	36	36	14	61	0	0	0	0	25	0	25
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	737	222	388	557	0	0	0	0	45	0	224
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	737	222	388	557	0	0	0	0	45	0	224
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	737	222	388	557	0	0	0	0	45	0	224
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	768	231	404	580	0	0	0	0	47	0	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	768	231	404	580	0	0	0	0	47	0	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	768	231	404	580	0	0	0	0	47	0	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.72	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.64
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	1377	1539	1620	0	0	0	0	1539	0	2424
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.17	0.26	0.36	0.00	0.00	0.00	0.00	0.03	0.00	0.10
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.36	0.36	0.25	0.61	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.69	0.47	1.05	0.59	0.00	0.00	0.00	0.00	0.12	0.00	0.38
Uniform Del:	0.0	27.3	24.6	37.5	11.8	0.0	0.0	0.0	0.0	29.0	0.0	31.1
IncremntDel:	0.0	3.6	3.1	59.6	2.6	0.0	0.0	0.0	0.0	0.6	0.0	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	30.8	27.7	97.1	14.4	0.0	0.0	0.0	0.0	29.7	0.0	33.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	30.8	27.7	97.1	14.4	0.0	0.0	0.0	0.0	29.7	0.0	33.0
LOS by Move:	A	C	C	F	B	A	A	A	A	C	A	C
HCM2kAvgQ:	0	12	6	20	11	0	0	0	0	1	0	4

Note: Queue reported is the number of cars per lane.

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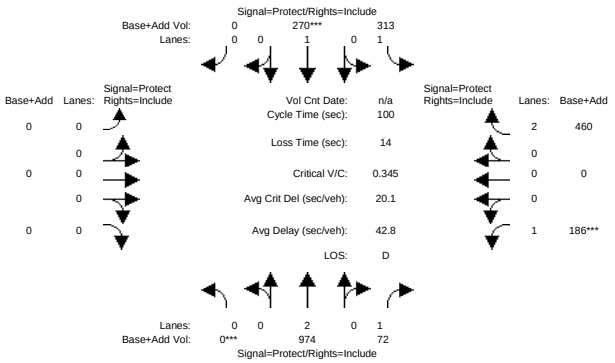
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #33: Mission Bay/7th



Street Name:	7th Street						Mission Bay					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	32	32	14	57	0	0	0	0	29	0	29
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	974	72	313	270	0	0	0	0	186	0	460
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	974	72	313	270	0	0	0	0	186	0	460
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	974	72	313	270	0	0	0	0	186	0	460
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	1004	74	323	278	0	0	0	0	192	0	474
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1004	74	323	278	0	0	0	0	192	0	474
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1004	74	323	278	0	0	0	0	192	0	474
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.81	0.72	0.81	0.85	1.00	1.00	1.00	1.00	0.81	1.00	0.64
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3079	1377	1539	1620	0	0	0	0	1539	0	2424
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.05	0.21	0.17	0.00	0.00	0.00	0.00	0.12	0.00	0.20
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.35	0.35	0.22	0.57	0.00	0.00	0.00	0.00	0.29	0.00	0.29
Volume/Cap:	0.00	0.94	0.16	0.94	0.30	0.00	0.00	0.00	0.00	0.43	0.00	0.67
Uniform Del:	0.0	31.6	22.5	38.2	11.2	0.0	0.0	0.0	0.0	28.8	0.0	31.3
IncremntDel:	0.0	16.4	0.7	35.5	0.8	0.0	0.0	0.0	0.0	3.0	0.0	5.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	48.0	23.2	73.7	12.0	0.0	0.0	0.0	0.0	31.8	0.0	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	48.0	23.2	73.7	12.0	0.0	0.0	0.0	0.0	31.8	0.0	36.5
LOS by Move:	A	D	C	E	B	A	A	A	A	C	A	D
HCM2kAvgQ:	0	21	2	14	4	0	0	0	0	5	0	8

Note: Queue reported is the number of cars per lane.

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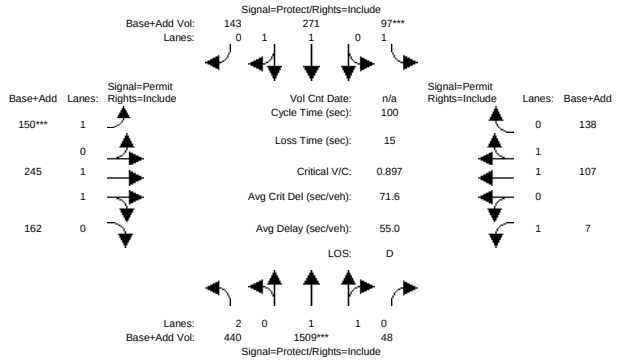
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	19	50	50	9	36	36	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	440	1509	48	97	271	143	150	245	162	7	107	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	440	1509	48	97	271	143	150	245	162	7	107	138
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	440	1509	48	97	271	143	150	245	162	7	107	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	458	1572	50	101	282	149	156	255	169	7	111	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	458	1572	50	101	282	149	156	255	169	7	111	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	458	1572	50	101	282	149	156	255	169	7	111	144
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.77	0.77	0.48	0.71	0.71	0.34	0.70	0.70
Lanes:	2.00	1.94	0.06	1.00	1.31	0.69	1.00	1.20	0.80	1.00	1.00	1.00
Final Sat.:	2987	2969	94	1539	1911	1008	919	1633	1080	655	1322	1322
Capacity Analysis Module:												
Vol/Sat:	0.15	0.53	0.53	0.07	0.15	0.15	0.17	0.16	0.16	0.01	0.08	0.11
Crit Moves:		****		****			****					
Green/Cycle:	0.20	0.49	0.49	0.09	0.38	0.38	0.27	0.27	0.27	0.27	0.27	0.27
Volume/Cap:	0.77	1.08	1.08	0.74	0.39	0.39	0.62	0.57	0.57	0.04	0.31	0.40
Uniform Del:	38.6	26.0	26.0	45.4	23.1	23.1	32.3	31.8	31.8	27.1	29.3	30.1
IncremntDel:	9.2	48.1	48.1	30.4	1.0	1.0	10.9	3.1	3.1	0.4	1.0	1.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.8	74.1	74.1	75.8	24.1	24.1	43.3	35.0	35.0	27.6	30.3	31.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.8	74.1	74.1	75.8	24.1	24.1	43.3	35.0	35.0	27.6	30.3	31.9
LOS by Move:	D	E	E	E	C	C	D	C	C	C	C	C
HCM2kAvgQ:	6	33	33	5	5	5	4	6	6	0	3	4

Note: Queue reported is the number of cars per lane.

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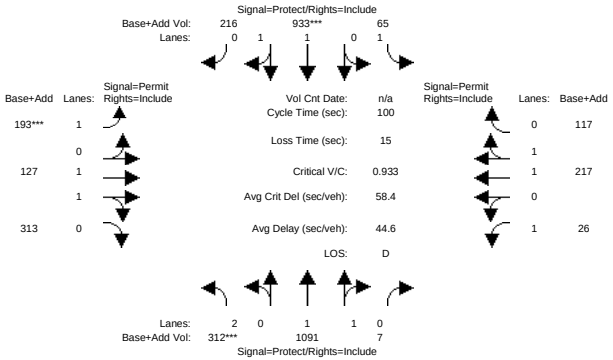
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #34: 16th/3rd



Street Name:	3rd Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	14	50	50	5	41	41	30	30	30	30	30	30
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
Volume Module:												
Base Vol:	312	1091	7	65	933	216	193	127	313	26	217	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	312	1091	7	65	933	216	193	127	313	26	217	117
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	312	1091	7	65	933	216	193	127	313	26	217	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	335	1173	8	70	1003	232	208	137	337	28	233	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	335	1173	8	70	1003	232	208	137	337	28	233	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	335	1173	8	70	1003	232	208	137	337	28	233	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.81	0.81	0.81	0.79	0.79	0.41	0.68	0.68	0.32	0.72	0.72
Lanes:	2.00	1.99	0.01	1.00	1.62	0.38	1.00	1.00	1.00	1.00	1.30	0.70
Final Sat.:	2987	3056	20	1539	2430	563	775	1289	1289	613	1778	959
Capacity Analysis Module:												
Vol/Sat:	0.11	0.38	0.38	0.05	0.41	0.41	0.27	0.11	0.26	0.05	0.13	0.13
Crit Moves:	****				****		****					
Green/Cycle:	0.14	0.50	0.50	0.05	0.41	0.41	0.30	0.30	0.30	0.30	0.30	0.30
Volume/Cap:	0.80	0.77	0.77	0.91	1.01	1.01	0.89	0.35	0.87	0.15	0.44	0.44
Uniform Del:	41.7	20.3	20.3	47.3	29.5	29.5	33.5	27.4	33.2	25.7	28.2	28.2
IncremntDel:	15.0	3.7	3.7	79.2	27.4	27.4	36.7	0.7	17.2	1.7	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	56.6	24.0	24.0	126.5	56.9	56.9	70.2	28.1	50.3	27.4	29.9	29.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.6	24.0	24.0	126.5	56.9	56.9	70.2	28.1	50.3	27.4	29.9	29.9
LOS by Move:	E	C	C	F	E	E	E	C	D	C	C	C
HCM2kAvgQ:	5	16	16	4	27	27	7	3	11	1	5	5

Note: Queue reported is the number of cars per lane.

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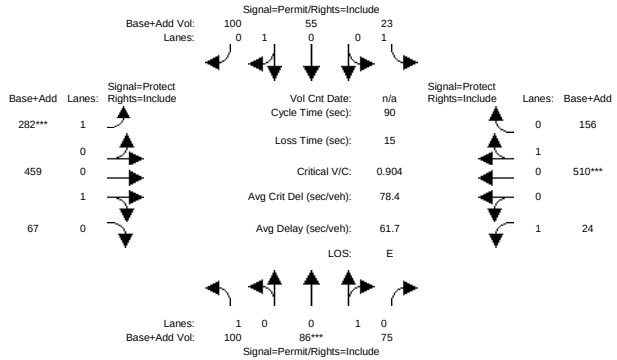
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #35: 16th/4th




```
Street Name:            4th Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20    20   20   20    15   40   40    15   40   40
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     100   86   75    23   55  100   282  459   67    24  510  156
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  100   86   75    23   55  100   282  459   67    24  510  156
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  100   86   75    23   55  100   282  459   67    24  510  156
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:   105   91   79    24   58  105   297  483   71    25  537  164
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  105   91   79    24   58  105   297  483   71    25  537  164
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  105   91   79    24   58  105   297  483   71    25  537  164
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.50 0.79 0.79  0.49 0.77 0.77  0.81 0.73 0.73  0.81 0.82 0.82
Lanes:       1.00 0.53 0.47  1.00 0.35 0.65  1.00 0.87 0.13  1.00 0.77 0.23
Final Sat.:   946  805  702   925  519  944  1539 1214  177  1539 1197  366
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.11 0.11  0.03 0.11 0.11  0.19 0.40 0.40  0.02 0.45 0.45
Crit Moves:       ****                       ****                 ****
Green/Cycle: 0.22 0.22 0.22  0.22 0.22 0.22  0.17 0.44 0.44  0.17 0.44 0.44
Volume/Cap:  0.50 0.51 0.51  0.12 0.50 0.50  1.16 0.90 0.90  0.10 1.01 1.01
Uniform Del: 30.6 30.7 30.7  28.0 30.6 30.6  37.5 23.1 23.1  31.8 25.0 25.0
IncremntDel:  8.3  5.4  5.4   1.2  5.4  5.4 105.3 18.0 18.0   0.8 36.3 36.3
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   38.9 36.0 36.0  29.1 36.1 36.1 142.8 41.1 41.1  32.5 61.3 61.3
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  38.9 36.0 36.0  29.1 36.1 36.1 142.8 41.1 41.1  32.5 61.3 61.3
LOS by Move:    D    D    D     C    D    D     F    D    D     C    E    E
HCM2kAvgQ:      3    5    5     1    5    5    13   13   13     1   27   27
Note: Queue reported is the number of cars per lane.
```

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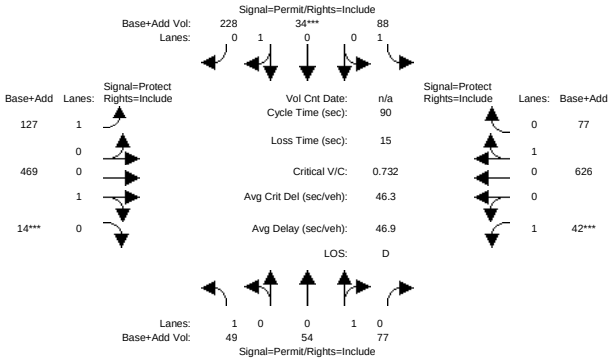
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #35: 16th/4th




```
Street Name:            4th Street                      16th Street
Approach:       North Bound     South Bound     East Bound      West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:   20   20   20    20   20   20    20   40   40    15   45   45
Y+R:         5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0   5.0  5.0  5.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      49   54   77    88   34  228   127  469   14    42  626   77
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   49   54   77    88   34  228   127  469   14    42  626   77
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   49   54   77    88   34  228   127  469   14    42  626   77
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91  0.91 0.91 0.91
PHF Volume:    54   59   85    97   37  251   140  515   15    46  688   85
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   54   59   85    97   37  251   140  515   15    46  688   85
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   54   59   85    97   37  251   140  515   15    46  688   85
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.29 0.78 0.78  0.53 0.74 0.74  0.81 0.74 0.74  0.81 0.84 0.84
Lanes:       1.00 0.41 0.59  1.00 0.13 0.87  1.00 0.97 0.03  1.00 0.89 0.11
Final Sat.:   546  609  869  1011  183 1225  1539 1371   41  1539 1420  175
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.10 0.10  0.10 0.20 0.20  0.09 0.38 0.38  0.03 0.48 0.48
Crit Moves:                       ****                 ****  ****
Green/Cycle: 0.22 0.22 0.22  0.22 0.22 0.22  0.11 0.44 0.44  0.17 0.50 0.50
Volume/Cap:  0.44 0.44 0.44  0.43 0.92 0.92  0.82 0.85 0.85  0.18 0.97 0.97
Uniform Del: 30.2 30.2 30.2  30.1 34.2 34.2  39.1 22.3 22.3  32.2 21.8 21.8
IncremntDel: 11.3  4.2  4.2   5.9 34.0 34.0  33.3 13.2 13.2   1.5 25.2 25.2
InitQueuDel:  0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0   0.0  0.0  0.0
Delay Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Delay/Veh:   41.5 34.4 34.4  36.0 68.2 68.2  72.4 35.5 35.5  33.7 47.0 47.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  41.5 34.4 34.4  36.0 68.2 68.2  72.4 35.5 35.5  33.7 47.0 47.0
LOS by Move:    D    C    C     D    E    E     E    D    D     C    D    D
HCM2kAvgQ:      2    4    4     3   12   12     4   13   13     1   27   27
Note: Queue reported is the number of cars per lane.
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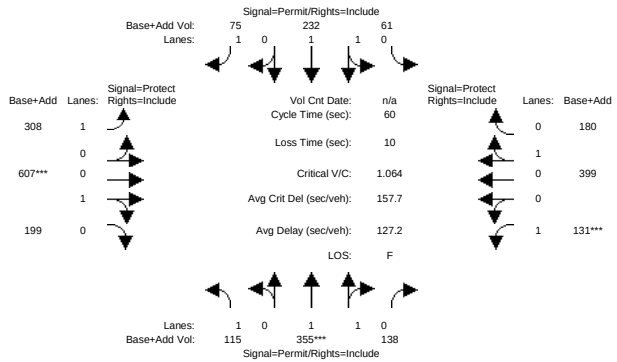
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #36: 16th/Owens



Street Name:	Owens St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	20	20	10	25	25	5	18	18
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	115	355	138	61	232	75	308	607	199	131	399	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	355	138	61	232	75	308	607	199	131	399	180
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	355	138	61	232	75	308	607	199	131	399	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	121	374	145	64	244	79	324	639	209	138	420	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	374	145	64	244	79	324	639	209	138	420	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	374	145	64	244	79	324	639	209	138	420	189
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.46	0.78	0.78	0.64	0.64	0.72	0.81	0.72	0.72	0.81	0.81	0.81
Lanes:	1.00	1.44	0.56	0.42	1.58	1.00	1.00	0.75	0.25	1.00	0.69	0.31
Final Sat.:	878	2124	826	508	1931	1377	1539	1028	337	1539	1064	480
Capacity Analysis Module:												
Vol/Sat:	0.14	0.18	0.18	0.13	0.13	0.06	0.21	0.62	0.62	0.09	0.39	0.39
Crit Moves:		****						****			****	
Green/Cycle:	0.33	0.33	0.33	0.33	0.33	0.33	0.17	0.42	0.42	0.08	0.33	0.33
Volume/Cap:	0.41	0.53	0.53	0.38	0.38	0.17	1.21	1.49	1.49	1.07	1.21	1.21
Uniform Del:	15.5	16.2	16.2	15.3	15.3	14.1	24.8	17.5	17.5	27.5	20.2	20.2
IncremntDel:	4.3	2.0	2.0	1.3	1.3	0.8	124.2	230	230.3	100.9	112	112.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	19.7	18.2	18.2	16.6	16.6	15.0	149.0	248	247.8	128.4	132	132.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.7	18.2	18.2	16.6	16.6	15.0	149.0	248	247.8	128.4	132	132.3
LOS by Move:	B	B	B	B	B	B	F	F	F	F	F	F
HCM2kAvgQ:	2	5	5	3	3	1	13	49	49	4	24	24

Note: Queue reported is the number of cars per lane.

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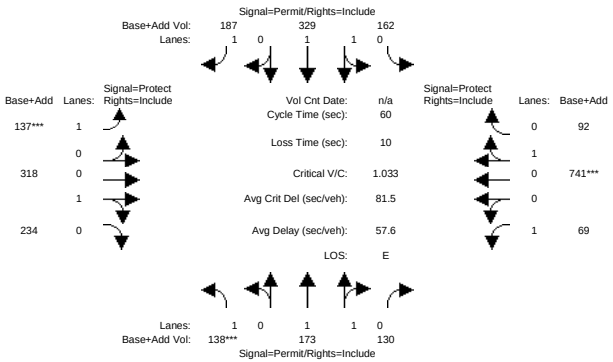
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #36: 16th/Owens



Street Name:	Owens St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	20	20	20	20	20	20	10	20	20	10	20	20
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	138	173	130	162	329	187	137	318	234	69	741	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	173	130	162	329	187	137	318	234	69	741	92
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	173	130	162	329	187	137	318	234	69	741	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	145	182	137	171	346	197	144	335	246	73	780	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	182	137	171	346	197	144	335	246	73	780	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	182	137	171	346	197	144	335	246	73	780	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.26	0.76	0.76	0.55	0.55	0.72	0.81	0.70	0.70	0.81	0.84	0.84
Lanes:	1.00	1.14	0.86	0.66	1.34	1.00	1.00	0.58	0.42	1.00	0.89	0.11
Final Sat.:	491	1645	1236	691	1403	1377	1539	765	563	1539	1418	176
Capacity Analysis Module:												
Vol/Sat:	0.30	0.11	0.11	0.25	0.25	0.14	0.09	0.44	0.44	0.05	0.55	0.55
Crit Moves:	****						****				****	
Green/Cycle:	0.29	0.29	0.29	0.29	0.29	0.29	0.09	0.52	0.52	0.11	0.53	0.53
Volume/Cap:	1.03	0.39	0.39	0.86	0.86	0.50	1.03	0.85	0.85	0.44	1.03	1.03
Uniform Del:	39.3	31.5	31.5	37.2	37.2	32.7	50.0	22.9	22.9	46.0	25.7	25.7
IncremntDel:	85.1	1.4	1.4	15.1	15.1	4.5	84.4	12.5	12.5	8.3	39.9	39.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	124.4	32.9	32.9	52.3	52.3	37.2	134.4	35.4	35.4	54.3	65.6	65.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	124.4	32.9	32.9	52.3	52.3	37.2	134.4	35.4	35.4	54.3	65.6	65.6
LOS by Move:	F	C	C	D	D	D	F	D	D	D	E	E
HCM2kAvgQ:	9	5	5	12	12	6	5	16	16	2	33	33

Note: Queue reported is the number of cars per lane.

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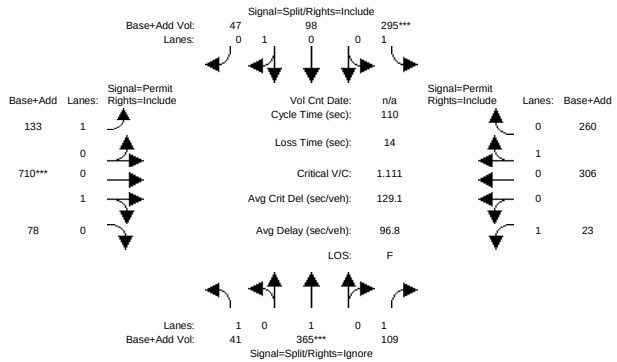
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #37: 16th/7th



Street Name:	7th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	30	30	30	30	30	30	36	36	36	36	36	67
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	41	365	109	295	98	47	133	710	78	23	306	260
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	365	109	295	98	47	133	710	78	23	306	260
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	365	109	295	98	47	133	710	78	23	306	260
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	42	372	0	301	100	48	136	724	80	23	312	265
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	372	0	301	100	48	136	724	80	23	312	265
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	372	0	301	100	48	136	724	80	23	312	265
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.71	0.71	0.21	0.74	0.74	0.05	0.79	0.79
Lanes:	1.00	1.00	1.00	1.00	0.68	0.32	1.00	0.90	0.10	1.00	0.54	0.46
Final Sat.:	1539	1620	1900	1539	911	437	394	1258	138	102	816	693
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.00	0.20	0.11	0.11	0.34	0.58	0.58	0.23	0.38	0.38
Crit Moves:		****		****				****				
Green/Cycle:	0.21	0.21	0.00	0.21	0.21	0.21	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.13	1.08	0.00	0.92	0.52	0.52	0.73	1.21	1.21	0.46	0.81	0.81
Uniform Del:	44.9	55.5	0.0	54.3	49.1	49.1	29.6	37.0	37.0	24.8	31.5	31.5
IncremntDel:	0.8	71.6	0.0	32.8	6.5	6.5	21.6	109	108.8	27.0	9.4	9.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.7	127	0.0	87.1	55.6	55.6	51.2	146	145.8	51.8	40.9	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	127	0.0	87.1	55.6	55.6	51.2	146	145.8	51.8	40.9	40.9
LOS by Move:	D	F	A	F	E	E	D	F	F	D	D	D
HCM2kAvgQ:	1	23	0	16	6	6	6	54	54	1	20	20

Note: Queue reported is the number of cars per lane.

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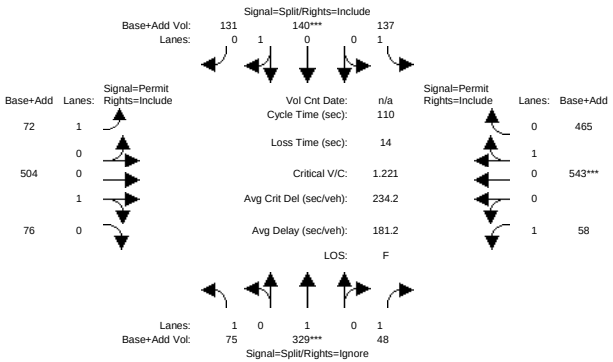
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #37: 16th/7th



Street Name:	7th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	37	37	37	30	30	30	29	29	29	29	29	59
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	75	329	48	137	140	131	72	504	76	58	543	465
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	329	48	137	140	131	72	504	76	58	543	465
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	329	48	137	140	131	72	504	76	58	543	465
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	77	336	0	140	143	134	73	514	78	59	554	474
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	336	0	140	143	134	73	514	78	59	554	474
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	336	0	140	143	134	73	514	78	59	554	474
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.69	0.69	0.06	0.73	0.73	0.15	0.79	0.79
Lanes:	1.00	1.00	1.00	1.00	0.52	0.48	1.00	0.87	0.13	1.00	0.54	0.46
Final Sat.:	1539	1620	1900	1539	680	636	110	1207	182	288	813	696
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.00	0.09	0.21	0.21	0.67	0.43	0.43	0.21	0.68	0.68
Crit Moves:		****			****						****	
Green/Cycle:	0.26	0.26	0.00	0.21	0.21	0.21	0.42	0.42	0.42	0.42	0.42	0.42
Volume/Cap:	0.19	0.78	0.00	0.42	0.98	0.98	1.43	1.01	1.01	0.49	1.62	1.62
Uniform Del:	39.9	47.8	0.0	47.5	54.7	54.7	40.5	40.5	40.5	29.5	40.5	40.5
IncremntDel:	1.0	13.4	0.0	4.0	48.9	48.9	274.7	39.9	39.9	13.3	285	285.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.9	61.2	0.0	51.5	104	103.6	315.2	80.4	80.4	42.8	326	325.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.9	61.2	0.0	51.5	104	103.6	315.2	80.4	80.4	42.8	326	325.7
LOS by Move:	D	E	A	D	F	F	F	F	F	D	F	F
HCM2kAvgQ:	3	15	0	5	16	16	8	32	32	2	89	89

Note: Queue reported is the number of cars per lane.

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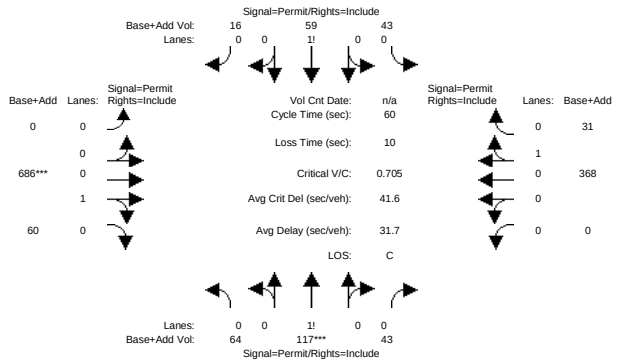
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street								16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	24	24	24	24	24	24	26	26	26	26	26	26
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	64	117	43	43	59	16	0	686	60	0	368	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	117	43	43	59	16	0	686	60	0	368	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	117	43	43	59	16	0	686	60	0	368	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	70	129	47	47	65	18	0	754	66	0	404	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	129	47	47	65	18	0	754	66	0	404	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	129	47	47	65	18	0	754	66	0	404	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.82	0.82	0.82	1.00	0.99	0.99	1.00	0.99	0.99
Lanes:	0.29	0.52	0.19	0.36	0.50	0.14	0.00	0.92	0.08	0.00	0.92	0.08
Final Sat.:	466	852	313	568	780	211	0	1728	151	0	1733	146
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.08	0.08	0.08	0.00	0.44	0.44	0.00	0.23	0.23
Crit Moves:		****						****				
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.43	0.43	0.00	0.43	0.43
Volume/Cap:	0.38	0.38	0.38	0.21	0.21	0.21	0.00	1.01	1.01	0.00	0.54	0.54
Uniform Del:	12.7	12.7	12.7	11.8	11.8	11.8	0.0	17.0	17.0	0.0	12.6	12.6
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	0.0	33.2	33.2	0.0	0.7	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	0.0	50.2	50.2	0.0	13.3	13.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	13.1	13.1	11.9	11.9	11.9	0.0	50.2	50.2	0.0	13.3	13.3
LOS by Move:	B	B	B	B	B	B	A	D	D	A	B	B
HCM2kAvgQ:	3	3	3	2	2	2	0	16	16	0	7	7

Note: Queue reported is the number of cars per lane.

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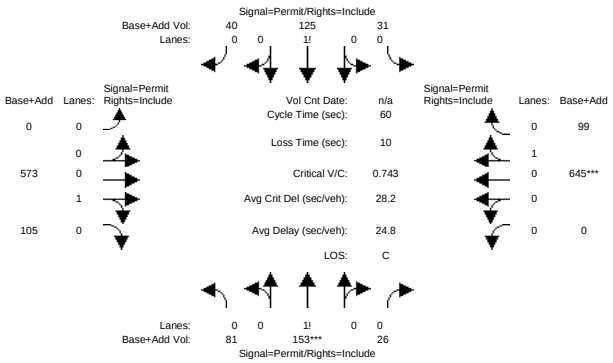
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #38: 16th St/Rhode Island



Street Name:	Rhode Island Street								16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	22	22	22	22	22	22	28	28	28	28	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	81	153	26	31	125	40	0	573	105	0	645	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	153	26	31	125	40	0	573	105	0	645	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	81	153	26	31	125	40	0	573	105	0	645	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	89	168	29	34	137	44	0	630	115	0	709	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	168	29	34	137	44	0	630	115	0	709	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	168	29	34	137	44	0	630	115	0	709	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	0.83	0.89	0.89	0.89	1.00	0.98	0.98	1.00	0.98	0.98
Lanes:	0.31	0.59	0.10	0.16	0.64	0.20	0.00	0.85	0.15	0.00	0.87	0.13
Final Sat.:	491	927	158	268	1081	346	0	1572	288	0	1618	248
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.13	0.13	0.13	0.00	0.40	0.40	0.00	0.44	0.44
Crit Moves:		****									****	
Green/Cycle:	0.37	0.37	0.37	0.37	0.37	0.37	0.00	0.47	0.47	0.00	0.47	0.47
Volume/Cap:	0.49	0.49	0.49	0.35	0.35	0.35	0.00	0.86	0.86	0.00	0.94	0.94
Uniform Del:	14.7	14.7	14.7	13.8	13.8	13.8	0.0	14.2	14.2	0.0	15.2	15.2
IncremntDel:	0.7	0.7	0.7	0.3	0.3	0.3	0.0	8.6	8.6	0.0	17.5	17.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	0.0	22.8	22.8	0.0	32.7	32.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	15.4	15.4	14.1	14.1	14.1	0.0	22.8	22.8	0.0	32.7	32.7
LOS by Move:	B	B	B	B	B	B	A	C	C	A	C	C
HCM2kAvgQ:	5	5	5	3	3	3	0	12	12	0	20	20

Note: Queue reported is the number of cars per lane.

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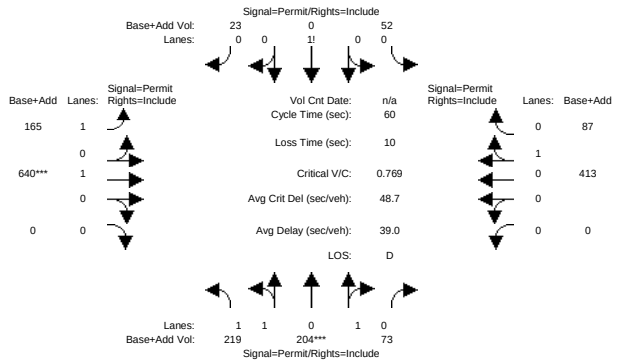
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	23	23	23	23	23	23	27	27	27	27	27	27
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	219	204	73	52	0	23	165	640	0	0	413	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	219	204	73	52	0	23	165	640	0	0	413	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	219	204	73	52	0	23	165	640	0	0	413	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	235	219	78	56	0	25	177	688	0	0	444	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	219	78	56	0	25	177	688	0	0	444	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	219	78	56	0	25	177	688	0	0	444	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	0.60	0.60	0.50	1.00	0.50	0.54	0.75	1.00	1.00	0.73	0.73
Lanes:	1.33	1.23	0.44	0.69	0.00	0.31	1.00	1.00	0.00	0.00	0.83	0.17
Final Sat.:	1516	1412	505	663	0	293	1035	1418	0	0	1144	241
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.08	0.00	0.08	0.17	0.49	0.00	0.00	0.39	0.39
Crit Moves:		****						****				
Green/Cycle:	0.38	0.38	0.38	0.38	0.00	0.38	0.45	0.45	0.00	0.00	0.45	0.45
Volume/Cap:	0.41	0.41	0.41	0.22	0.00	0.22	0.38	1.08	0.00	0.00	0.86	0.86
Uniform Del:	13.5	13.5	13.5	12.5	0.0	12.5	11.0	16.5	0.0	0.0	14.8	14.8
IncremntDel:	0.9	0.9	0.9	1.4	0.0	1.4	2.4	58.7	0.0	0.0	14.6	14.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	14.4	14.4	14.4	13.8	0.0	13.8	13.3	75.2	0.0	0.0	29.5	29.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.4	14.4	14.4	13.8	0.0	13.8	13.3	75.2	0.0	0.0	29.5	29.5
LOS by Move:	B	B	B	B	A	B	B	E	A	A	C	C
HCM2kAvgQ:	3	3	3	1	0	1	2	18	0	0	11	11

Note: Queue reported is the number of cars per lane.

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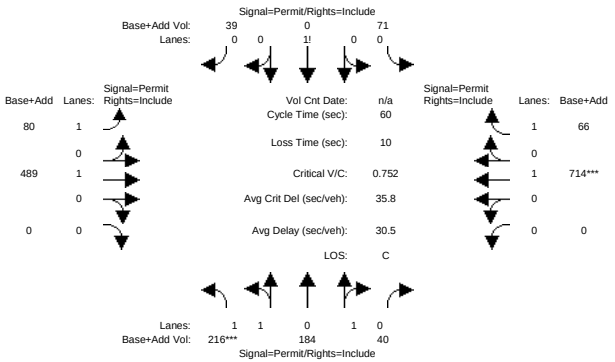
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #39: 16th/Vermont



Street Name:	Vermont St						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	21	0	21	21	0	21	0	29	0	0	29	0
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	216	184	40	71	0	39	80	489	0	0	714	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	184	40	71	0	39	80	489	0	0	714	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	184	40	71	0	39	80	489	0	0	714	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	237	202	44	78	0	43	88	537	0	0	785	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	202	44	78	0	43	88	537	0	0	785	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	202	44	78	0	43	88	537	0	0	785	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	0.59	0.59	0.50	1.00	0.50	0.12	0.75	1.00	1.00	0.85	0.63
Lanes:	1.48	1.25	0.27	0.65	0.00	0.35	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	1665	1418	308	612	0	336	224	1418	0	0	1620	1205
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.13	0.00	0.13	0.39	0.38	0.00	0.00	0.48	0.06
Crit Moves:	****										****	
Green/Cycle:	0.35	0.35	0.35	0.35	0.00	0.35	0.48	0.48	0.00	0.00	0.48	0.48
Volume/Cap:	0.41	0.41	0.41	0.36	0.00	0.36	0.73	0.78	0.00	0.00	1.00	0.12
Uniform Del:	14.8	14.8	14.8	14.5	0.0	14.5	12.4	12.9	0.0	0.0	15.5	8.5
IncremntDel:	1.0	1.0	1.0	3.1	0.0	3.1	32.4	8.7	0.0	0.0	32.6	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.8	15.8	15.8	17.6	0.0	17.6	44.8	21.6	0.0	0.0	48.1	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.8	15.8	15.8	17.6	0.0	17.6	44.8	21.6	0.0	0.0	48.1	9.0
LOS by Move:	B	B	B	B	A	B	D	C	A	A	D	A
HCM2kAvgQ:	3	3	3	2	0	2	1	8	0	0	17	1

Note: Queue reported is the number of cars per lane.

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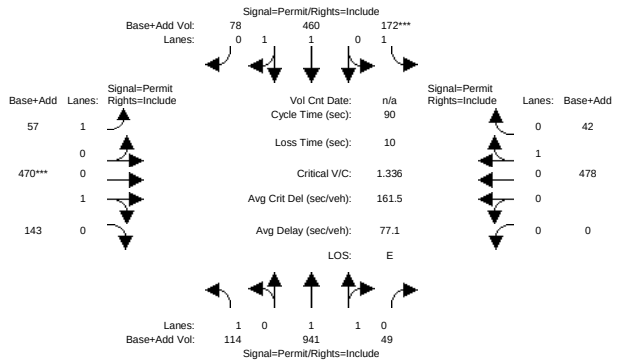
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	114	941	49	172	460	78	57	470	143	0	478	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	941	49	172	460	78	57	470	143	0	478	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	941	49	172	460	78	57	470	143	0	478	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	118	970	51	177	474	80	59	485	147	0	493	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	970	51	177	474	80	59	485	147	0	493	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	970	51	177	474	80	59	485	147	0	493	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.33	0.59	0.74	0.14	0.58	0.72	0.56	0.61	0.68	1.00	0.63	0.70
Lanes:	1.00	1.92	0.08	1.00	1.76	0.24	1.00	0.79	0.21	0.00	0.93	0.07
Final Sat.:	630	2146	112	269	1939	329	1055	917	279	0	1109	97
Capacity Analysis Module:												
Vol/Sat:	0.19	0.45	0.45	0.66	0.24	0.24	0.06	0.53	0.53	0.00	0.44	0.44
Crit Moves:				****				****				
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.00	0.44	0.44
Volume/Cap:	0.42	1.02	1.02	1.48	0.55	0.55	0.13	1.19	1.19	0.00	1.00	1.00
Uniform Del:	17.1	25.0	25.0	25.0	18.4	18.4	14.7	25.0	25.0	0.0	25.0	25.0
IncremntDel:	4.6	32.8	32.8	256.6	2.2	2.2	0.5	103	102.9	0.0	38.8	38.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	21.6	57.8	57.8	281.6	20.6	20.6	15.3	128	127.9	0.0	63.8	63.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.6	57.8	57.8	281.6	20.6	20.6	15.3	128	127.9	0.0	63.8	63.8
LOS by Move:	C	E	E	F	C	C	B	F	F	A	E	E
HCM2kAvgQ:	3	22	26	14	6	8	1	32	35	0	18	20

Note: Queue reported is the number of cars per lane.

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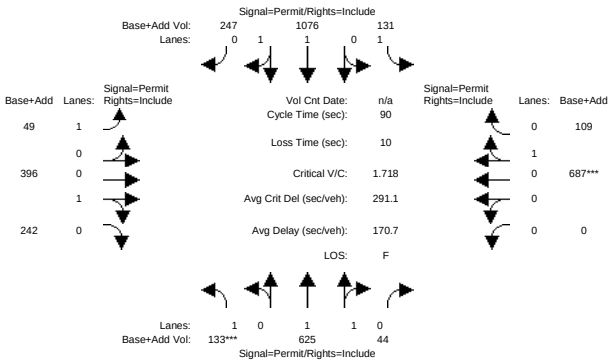
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #40: 16th/Potrero



Street Name:	Potrero Ave						16th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	40	40	40	40	40	40	40	40	40	40	40	40
Y+R:	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0
Volume Module:												
Base Vol:	133	625	44	131	1076	247	49	396	242	0	687	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	625	44	131	1076	247	49	396	242	0	687	109
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	625	44	131	1076	247	49	396	242	0	687	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	137	644	45	135	1109	255	51	408	249	0	708	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	644	45	135	1109	255	51	408	249	0	708	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	137	644	45	135	1109	255	51	408	249	0	708	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.09	0.59	0.73	0.26	0.58	0.72	0.60	0.60	0.67	1.00	0.63	0.69
Lanes:	1.00	1.89	0.11	1.00	1.69	0.31	1.00	0.65	0.35	0.00	0.88	0.12
Final Sat.:	162	2110	149	501	1849	424	1133	736	450	0	1040	165
Capacity Analysis Module:												
Vol/Sat:	0.85	0.31	0.31	0.27	0.60	0.60	0.04	0.55	0.55	0.00	0.68	0.68
Crit Moves:	****										****	
Green/Cycle:	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.00	0.44	0.44
Volume/Cap:	1.71	0.69	0.69	0.61	1.35	1.35	0.10	1.25	1.25	0.00	1.53	1.53
Uniform Del:	25.0	20.0	20.0	19.0	25.0	25.0	14.5	25.0	25.0	0.0	25.0	25.0
IncremntDel:	368.4	3.8	3.8	11.7	164	164.2	0.4	127	126.7	0.0	249	249.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	393.4	23.8	23.8	30.7	189	189.2	14.9	152	151.7	0.0	274	274.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	393.4	23.8	23.8	30.7	189	189.2	14.9	152	151.7	0.0	274	274.0
LOS by Move:	F	C	C	C	F	F	B	F	F	A	F	F
HCM2kAvgQ:	12	9	11	4	43	53	1	36	39	0	56	62

Note: Queue reported is the number of cars per lane.

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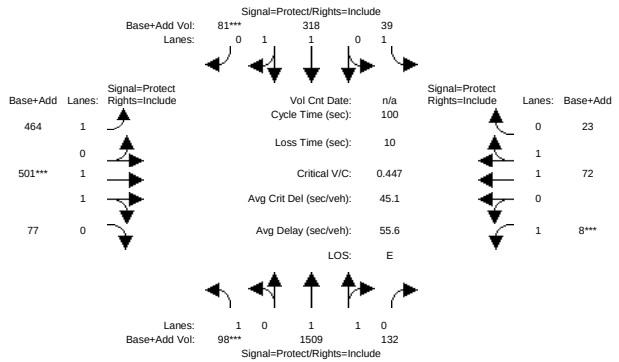
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	23	51	51	4	32	44	31	27	27	12	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	98	1509	132	39	318	81	464	501	77	8	72	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	1509	132	39	318	81	464	501	77	8	72	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	1509	132	39	318	81	464	501	77	8	72	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	1509	132	39	318	81	464	501	77	8	72	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	1509	132	39	318	81	464	501	77	8	72	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	1509	132	39	318	81	464	501	77	8	72	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.79	0.79	0.81	0.78	0.78	0.81	0.74	0.74	0.81	0.78	0.78
Lanes:	1.00	1.84	0.16	1.00	1.59	0.41	1.00	1.73	0.27	1.00	1.52	0.48
Final Sat.:	1539	2769	242	1539	2356	600	1539	2452	377	1539	2250	719
Capacity Analysis Module:												
Vol/Sat:	0.06	0.54	0.54	0.03	0.13	0.13	0.30	0.20	0.20	0.01	0.03	0.03
Crit Moves:	****					****		****		****		
Green/Cycle:	0.20	0.54	0.54	0.03	0.38	0.38	0.30	0.23	0.23	0.10	0.03	0.03
Volume/Cap:	0.32	1.00	1.00	0.73	0.36	0.36	1.00	0.88	0.88	0.05	0.93	0.93
Uniform Del:	39.8	26.5	26.5	55.5	25.8	25.8	40.5	42.9	42.9	46.9	55.9	55.9
IncremntDel:	2.8	23.0	23.0	61.8	0.9	0.9	41.5	15.4	15.4	0.6	70.8	70.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.6	49.5	49.5	117.3	26.7	26.7	82.0	58.3	58.3	47.5	127	126.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	49.5	49.5	117.3	26.7	26.7	82.0	58.3	58.3	47.5	127	126.7
LOS by Move:	D	D	D	F	C	C	F	E	E	D	F	F
HCM2kAvgQ:	3	38	38	2	5	5	20	11	11	0	4	4

Note: Queue reported is the number of cars per lane.

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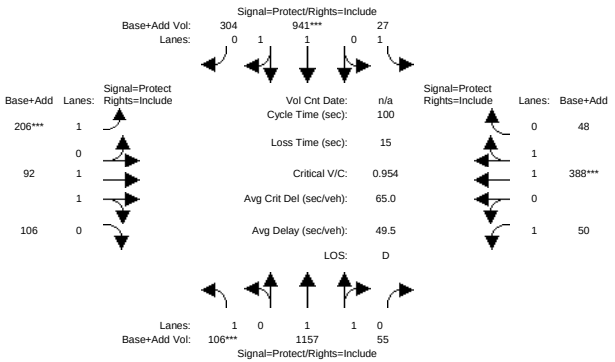
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Min. Green:	5	50	50	5	50	50	15	15	15	10	10	10
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	106	1157	55	27	941	304	206	92	106	50	388	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	1157	55	27	941	304	206	92	106	50	388	48
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	1157	55	27	941	304	206	92	106	50	388	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	112	1218	58	28	991	320	217	97	112	53	408	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	1218	58	28	991	320	217	97	112	53	408	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	1218	58	28	991	320	217	97	112	53	408	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.80	0.80	0.81	0.77	0.77	0.81	0.70	0.70	0.81	0.80	0.80
Lanes:	1.00	1.91	0.09	1.00	1.51	0.49	1.00	1.00	1.00	1.00	1.78	0.22
Final Sat.:	1539	2889	137	1539	2219	717	1539	1328	1328	1539	2696	334
Capacity Analysis Module:												
Vol/Sat:	0.07	0.42	0.42	0.02	0.45	0.45	0.14	0.07	0.08	0.03	0.15	0.15
Crit Moves:	****					****		****				****
Green/Cycle:	0.06	0.51	0.51	0.05	0.50	0.50	0.15	0.17	0.17	0.11	0.14	0.14
Volume/Cap:	1.12	0.82	0.82	0.36	0.89	0.89	0.94	0.43	0.49	0.30	1.12	1.12
Uniform Del:	46.8	20.5	20.5	45.8	22.6	22.6	42.0	37.1	37.5	40.6	43.2	43.2
IncremntDel:	126.1	5.0	5.0	12.3	8.7	8.7	45.3	2.7	4.0	4.3	81.2	81.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	172.9	25.5	25.5	58.1	31.2	31.2	87.3	39.8	41.5	45.0	124	124.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	172.9	25.5	25.5	58.1	31.2	31.2	87.3	39.8	41.5	45.0	124	124.4
LOS by Move:	F	C	C	E	C	C	F	D	D	D	F	F
HCM2kAvgQ:	8	19	19	1	18	18	8	3	3	2	14	14

Note: Queue reported is the number of cars per lane.

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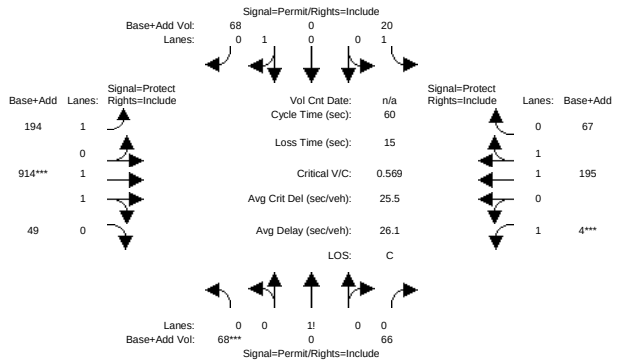
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	17	17	17	17	17	17	15	28	28	15	28	28
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	68	0	66	20	0	68	194	914	49	4	195	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	0	66	20	0	68	194	914	49	4	195	67
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	0	66	20	0	68	194	914	49	4	195	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	72	0	69	21	0	72	204	962	52	4	205	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	0	69	21	0	72	204	962	52	4	205	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	0	69	21	0	72	204	962	52	4	205	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	1.00	0.63	0.66	1.00	0.72	0.81	0.75	0.75	0.81	0.73	0.73
Lanes:	0.51	0.00	0.49	1.00	0.00	1.00	1.00	1.90	0.10	1.00	1.49	0.51
Final Sat.:	609	0	591	1245	0	1377	1539	2718	146	1539	2067	710
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.02	0.00	0.05	0.13	0.35	0.35	0.00	0.10	0.10
Crit Moves:	****							****		****		
Green/Cycle:	0.19	0.00	0.19	0.19	0.00	0.19	0.22	0.48	0.48	0.17	0.42	0.42
Volume/Cap:	0.62	0.00	0.62	0.09	0.00	0.28	0.59	0.74	0.74	0.02	0.24	0.24
Uniform Del:	33.5	0.0	33.5	30.1	0.0	31.2	31.2	19.0	19.0	31.3	16.8	16.8
IncremntDel:	12.2	0.0	12.2	0.8	0.0	2.6	7.2	3.6	3.6	0.1	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.7	0.0	45.7	30.9	0.0	33.8	38.4	22.6	22.6	31.5	17.3	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	0.0	45.7	30.9	0.0	33.8	38.4	22.6	22.6	31.5	17.3	17.3
LOS by Move:	D		A	D		A	C	D	C	C	C	B	B
HCM2kAvgQ:	5		0	5		1	0	2	6	13	13	0	2	2

Note: Queue reported is the number of cars per lane.

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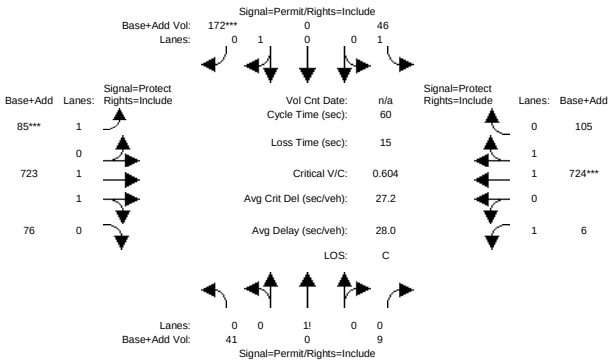
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #42: Mariposa/4th



Street Name:	4th Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	20	20	20	20	20	20	15	25	25	15	25	25
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	41	0	9	46	0	172	85	723	76	6	724	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	0	9	46	0	172	85	723	76	6	724	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	0	9	46	0	172	85	723	76	6	724	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	43	0	9	48	0	181	89	761	80	6	762	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	0	9	48	0	181	89	761	80	6	762	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	0	9	48	0	181	89	761	80	6	762	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	1.00	0.58	0.64	1.00	0.72	0.81	0.73	0.75	0.81	0.73	0.75
Lanes:	0.82	0.00	0.18	1.00	0.00	1.00	1.00	1.81	0.19	1.00	1.75	0.25
Final Sat.:	908	0	199	1225	0	1377	1539	2529	266	1539	2430	352
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.04	0.00	0.13	0.06	0.30	0.30	0.00	0.31	0.31
Crit Moves:						****	****				****	
Green/Cycle:	0.22	0.00	0.22	0.22	0.00	0.22	0.17	0.39	0.39	0.22	0.44	0.44
Volume/Cap:	0.21	0.00	0.21	0.18	0.00	0.59	0.35	0.77	0.77	0.02	0.71	0.71
Uniform Del:	28.6	0.0	28.6	28.3	0.0	31.3	33.2	23.7	23.7	27.6	20.2	20.2
IncremntDel:	2.0	0.0	2.0	1.4	0.0	8.2	3.7	5.1	5.1	0.1	3.4	3.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.6	0.0	30.6	29.8	0.0	39.5	36.9	28.8	28.8	27.7	23.6	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.6	0.0	30.6	29.8	0.0	39.5	36.9	28.8	28.8	27.7	23.6	23.6
LOS by Move:	C		A	C		A	D	D	C	C	C	C
HCM2kAvgQ:	1		0	1		1	0	5	3	12	13	0	9	10

Note: Queue reported is the number of cars per lane.

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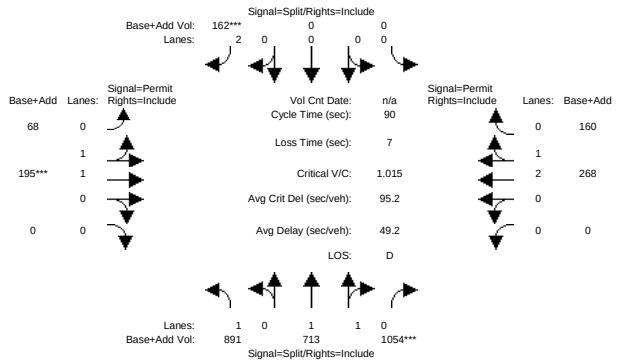
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	57	57	57	11	11	11	15	15	15	15	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	891	713	1054	0	0	162	68	195	0	0	268	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	891	713	1054	0	0	162	68	195	0	0	268	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	891	713	1054	0	0	162	68	195	0	0	268	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	928	743	1098	0	0	169	71	203	0	0	279	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	928	743	1098	0	0	169	71	203	0	0	279	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	928	743	1098	0	0	169	71	203	0	0	279	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.77	0.77	1.00	1.00	0.66	0.61	0.61	1.00	1.00	0.81	0.81
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.52	1.48	0.00	0.00	2.00	1.00
Final Sat.:	2018	1461	1461	0	0	2525	604	1732	0	0	3093	1547
Capacity Analysis Module:												
Vol/Sat:	0.46	0.51	0.75	0.00	0.00	0.07	0.12	0.12	0.00	0.00	0.09	0.11
Crit Moves:			****			****		****				
Green/Cycle:	0.63	0.63	0.63	0.00	0.00	0.12	0.17	0.17	0.00	0.00	0.17	0.17
Volume/Cap:	0.73	0.80	1.19	0.00	0.00	0.55	0.70	0.70	0.00	0.00	0.54	0.65
Uniform Del:	11.2	12.3	16.5	0.0	0.0	37.2	35.4	35.4	0.0	0.0	34.3	35.0
IncremntDel:	3.6	3.1	90.8	0.0	0.0	6.8	10.2	10.2	0.0	0.0	2.5	4.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	14.8	15.4	107.3	0.0	0.0	44.0	45.6	45.6	0.0	0.0	36.9	39.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.8	15.4	107.3	0.0	0.0	44.0	45.6	45.6	0.0	0.0	36.9	39.7
LOS by Move:	B	B	F	A	A	D	D	D	A	A	D	D
HCM2kAvgQ:	18	18	57	0	0	3	4	4	0	0	5	6

Note: Queue reported is the number of cars per lane.

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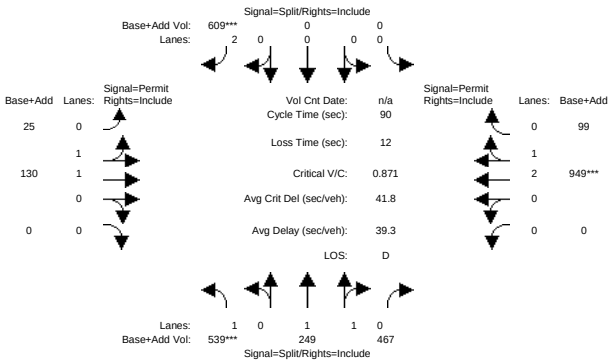
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #43: Mariposa/I-280NB



Street Name:	I-280NB						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	29	29	29	27	27	27	22	22	22	22	22	22
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	539	249	467	0	0	609	25	130	0	0	949	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	539	249	467	0	0	609	25	130	0	0	949	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	539	249	467	0	0	609	25	130	0	0	949	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	561	259	486	0	0	634	26	135	0	0	989	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	561	259	486	0	0	634	26	135	0	0	989	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	561	259	486	0	0	634	26	135	0	0	989	103
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.06	0.76	0.84	1.00	1.00	0.66	0.63	0.63	1.00	1.00	0.85	0.85
Lanes:	1.00	1.00	1.00	0.00	0.00	2.00	0.32	1.68	0.00	0.00	2.72	0.28
Final Sat.:	2018	1446	1591	0	0	2525	385	2003	0	0	4389	458
Capacity Analysis Module:												
Vol/Sat:	0.28	0.18	0.31	0.00	0.00	0.25	0.07	0.07	0.00	0.00	0.23	0.23
Crit Moves:	****					****					****	
Green/Cycle:	0.35	0.35	0.35	0.00	0.00	0.30	0.24	0.24	0.00	0.00	0.24	0.24
Volume/Cap:	0.79	0.51	0.87	0.00	0.00	0.84	0.28	0.28	0.00	0.00	0.92	0.92
Uniform Del:	26.2	23.1	27.3	0.0	0.0	29.4	27.6	27.6	0.0	0.0	33.2	33.2
IncremntDel:	8.8	1.3	11.8	0.0	0.0	10.7	1.2	1.2	0.0	0.0	13.0	13.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	35.1	24.4	39.1	0.0	0.0	40.1	28.7	28.7	0.0	0.0	46.2	46.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.1	24.4	39.1	0.0	0.0	40.1	28.7	28.7	0.0	0.0	46.2	46.2
LOS by Move:	D	C	D	A	A	D	C	C	A	A	D	D
HCM2kAvgQ:	16	6	17	0	0	12	2	2	0	0	15	15

Note: Queue reported is the number of cars per lane.

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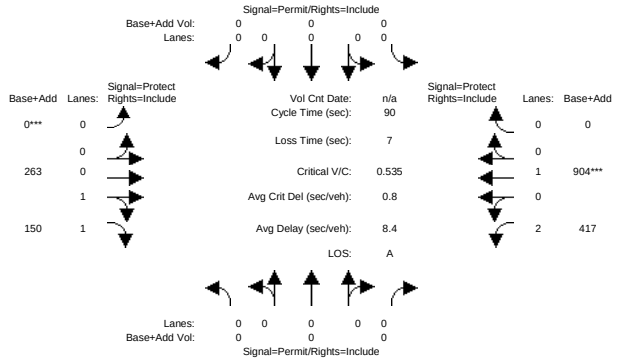
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM (2-lane 16th)

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	31	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	263	150	417	904	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	263	150	417	904	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	263	150	417	904	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	0	0	0	0	274	156	434	942	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	274	156	434	942	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	274	156	434	942	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.90	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	1797	1797	3432	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.09	0.13	0.50	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.26	0.21	0.54	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9	23.1	9.0	0.5	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.1	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.1	0.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	23.2	9.1	0.8	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	7	3	3	5	0

Note: Queue reported is the number of cars per lane.

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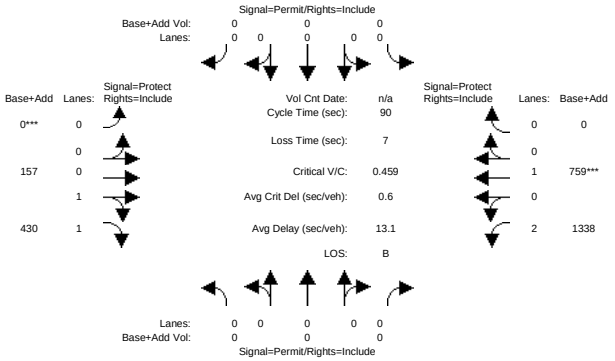
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B PM (2-lane 16th)

Intersection #440: Mariposa/I-280SB



Street Name:	I-280 Southbound Ramp						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	31	31	55	88	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	157	430	1338	759	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	157	430	1338	759	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	157	430	1338	759	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	167	457	1423	807	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	167	457	1423	807	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	167	457	1423	807	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.92	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.47	2.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	905	2477	3502	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18	0.41	0.42	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.59	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.55	0.69	0.46	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.8	25.8	13.3	0.4	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	1.0	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.3	0.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4	14.3	0.6	0.0
LOS by Move:	A	A	A	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	8	8	14	3	0

Note: Queue reported is the number of cars per lane.

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Cumulative Physical Options/LRDP Assumed

UCSF Affiliate Approximate Drive-Alone Commute Vehicle Trip Reduction via Travel Demand Management Measures Exercise - DRAFT Four

Approximate Drive-Alone Commute Vehicle Trips	Campus		UCSF Shuttle *Shuttle Enhancements (wi-fi, Nextbus, etc.)*	Enhance Existing Car Share	More Robust Carpool Matching	Expand Vanpool Program	Flexible Work Schedules	Total Approx. Drive-Alone Commute Vehicle Trip Reduction	Total Approx. Drive-Alone Commute Vehicle Trip Percentage Reduction
	Mission Bay (4500)	4500	15	20	35	35	50	**155**	**-3%**

FEHR PEERS

Assumptions:

This exercise is for drive-alone commuters that travel during the AM and PM peak commute hours (7-9 AM, 4-6 PM) i.e., it is somewhat conservative as it doesn't look at other time periods

This exercise is for drive-alone commuters only, thus it doesn't include patients, visitors, vendors, etc.

This exercise is for drive-alone commuters, thus it does not take into account how carpoolers/ transit users may change their behavior if all/some of the proposed measures were implemented

The last-mile shuttle is assumed to run to the specified destinations with 20-minute headways

The park and ride is assumed to be a leased parking lot i.e. not on-street parking near a pick-up location

It is assumed there would be four shuttle buses from each park and ride lot. One each at 7 AM and 8 AM for Parnassus/Mount Zion…

...and one each at 7 AM and 8 AM for Mission Bay/Mission Center (vice versa during the PM peak period)

Enhance existing car share assumes additioanal paring spaces in UCSF garages and on-street

More robust carpool matchingg assumes preferential parking spaces

Expand vanpool program assumes purchase of additional vans and preferential parking

Flexible work schedule assumes limited working from home or commuting outside peak AM and PM peak periods e.g. 10 AM to 7 PM shift

This exercise assumes that 2012 and cumulative mode splits will be the same

This exercise assumes that 2012 and cumulative TDM efficacy will remain the same

This exercise assumes that 2012 and cumulative commuters will travel from the same regions by campus

This exercise assumes that the Project as identified in the Physical Options Study is in place at the Mission Bay campus

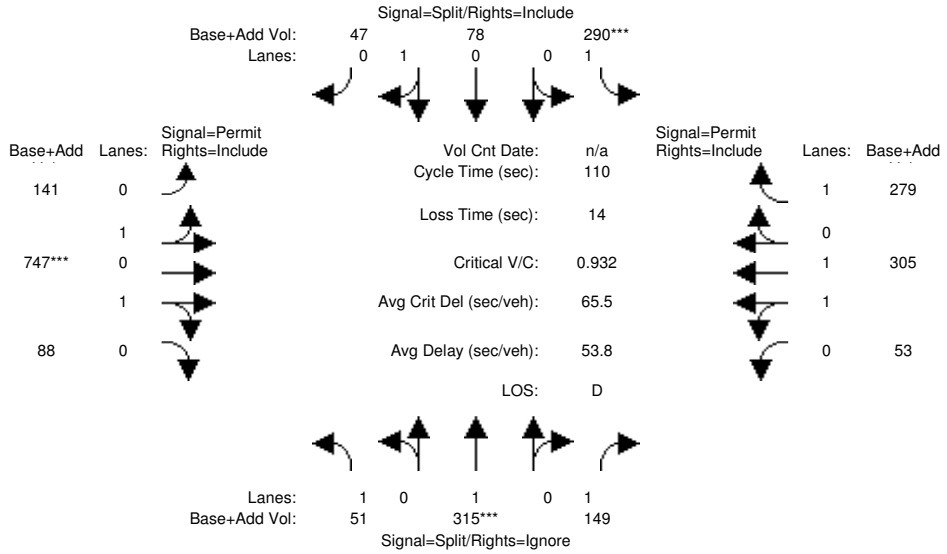
This exercise assumes that the Project (Options B1 or B3) as identified in the Physical Options Study is in place at the Mount Zion campus

This exercise assumes that the Project (No LPPI/Opth.) as identified in the Physical Options Study is in place at the Parnassus campus

This exercise assumes that the Project (Option A at 52 feet) as identified in the Physical Options Study is in place at the Mission Center campus

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #37: 16th/7th



Street Name:	7th Street						16th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	30	30	30	30	30	30	36	36	36	36	36	67
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	9.0	9.0	4.0
Volume Module:												
Base Vol:	51	315	149	290	78	47	141	747	88	53	305	279
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	315	149	290	78	47	141	747	88	53	305	279
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	315	149	290	78	47	141	747	88	53	305	279
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	52	321	0	296	80	48	144	762	90	54	311	285
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	321	0	296	80	48	144	762	90	54	311	285
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	321	0	296	80	48	144	762	90	54	311	285
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.85	1.00	0.81	0.70	0.70	0.58	0.58	0.58	0.52	0.52	0.72
Lanes:	1.00	1.00	1.00	1.00	0.62	0.38	0.29	1.53	0.18	0.30	1.70	1.00
Final Sat.:	1539	1620	1900	1539	835	503	321	1699	200	292	1681	1377
Capacity Analysis Module:												
Vol/Sat:	0.03	0.20	0.00	0.19	0.10	0.10	0.45	0.45	0.45	0.19	0.19	0.21
Crit Moves:		****		****				****				
Green/Cycle:	0.21	0.21	0.00	0.21	0.21	0.21	0.48	0.48	0.48	0.48	0.48	0.48
Volume/Cap:	0.16	0.93	0.00	0.90	0.45	0.45	0.94	0.94	0.94	0.39	0.39	0.43
Uniform Del:	45.2	54.5	0.0	54.1	48.3	48.3	35.2	35.2	35.2	23.8	23.8	24.5
IncremntDel:	1.0	34.0	0.0	30.3	5.0	5.0	17.2	17.2	17.2	1.2	1.2	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.3	88.5	0.0	84.4	53.3	53.3	52.4	52.4	52.4	25.0	25.0	26.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.3	88.5	0.0	84.4	53.3	53.3	52.4	52.4	52.4	25.0	25.0	26.6
LOS by Move:	D	F	A	F	D	D	D	D	D	C	C	C
HCM2kAvgQ:	2	17	0	16	5	5	26	26	26	5	5	8

Note: Queue reported is the number of cars per lane.

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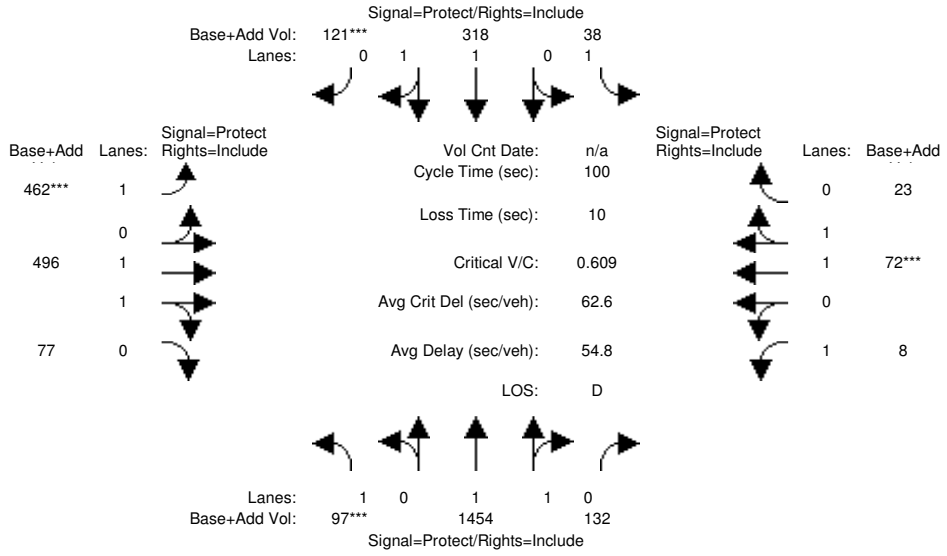
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
2040 Var S2B AM

Intersection #41: Mariposa/3rd



Street Name:	3rd Street						Mariposa Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	23	51	51	4	32	44	31	27	27	12	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Volume Module:												
Base Vol:	97	1454	132	38	318	121	462	496	77	8	72	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	1454	132	38	318	121	462	496	77	8	72	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	1454	132	38	318	121	462	496	77	8	72	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	99	1484	135	39	324	123	471	506	79	8	73	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	1484	135	39	324	123	471	506	79	8	73	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	1484	135	39	324	123	471	506	79	8	73	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.79	0.79	0.81	0.77	0.77	0.81	0.74	0.74	0.81	0.78	0.78
Lanes:	1.00	1.83	0.17	1.00	1.45	0.55	1.00	1.73	0.27	1.00	1.52	0.48
Final Sat.:	1539	2761	251	1539	2117	806	1539	2449	380	1539	2250	719
Capacity Analysis Module:												
Vol/Sat:	0.06	0.54	0.54	0.03	0.15	0.15	0.31	0.21	0.21	0.01	0.03	0.03
Crit Moves:	****					****	****				****	
Green/Cycle:	0.20	0.54	0.54	0.03	0.38	0.38	0.30	0.23	0.23	0.10	0.03	0.03
Volume/Cap:	0.32	0.99	0.99	0.72	0.40	0.40	1.01	0.89	0.89	0.05	0.95	0.95
Uniform Del:	39.8	26.2	26.2	55.4	26.4	26.4	40.5	43.0	43.0	46.9	55.9	55.9
IncremntDel:	2.8	20.0	20.0	59.4	1.1	1.1	45.6	16.4	16.4	0.6	75.5	75.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.6	46.2	46.2	114.8	27.5	27.5	86.1	59.4	59.4	47.5	131	131.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	46.2	46.2	114.8	27.5	27.5	86.1	59.4	59.4	47.5	131	131.4
LOS by Move:	D	D	D	F	C	C	F	E	E	D	F	F
HCM2kAvgQ:	3	37	37	2	6	6	21	12	12	0	4	4

Note: Queue reported is the number of cars per lane.

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APPENDIX D: TRAFFIC VOLUME AND INTERSECTION TURNING MOVEMENT COUNTS

MARKS TRAFFIC DATA

mietekm@comcast.net
916.806.0250

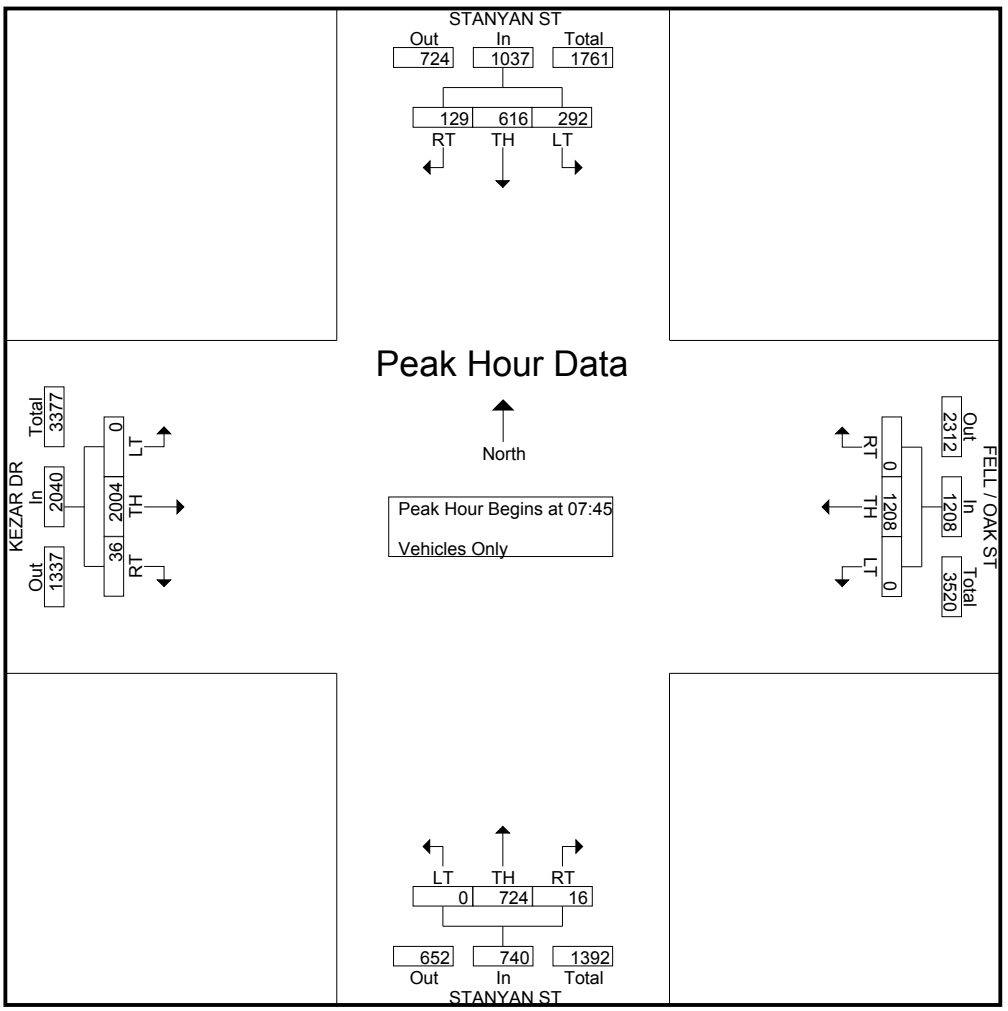
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : stanyan-kezar-a
Site Code : 23
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	STANYAN ST Southbound				FELL / OAK ST Westbound				STANYAN ST Northbound				KEZAR DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	23	96	77	196	0	169	0	169	0	103	0	103	3	457	0	460	928
07:15	27	105	80	212	0	185	0	185	1	110	0	111	5	488	0	493	1001
07:30	21	141	76	238	0	222	0	222	2	139	0	141	10	485	0	495	1096
07:45	38	160	70	268	0	303	0	303	4	174	0	178	11	502	0	513	1262
Total	109	502	303	914	0	879	0	879	7	526	0	533	29	1932	0	1961	4287
08:00	37	157	80	274	0	324	0	324	3	175	0	178	7	483	0	490	1266
08:15	30	167	77	274	0	293	0	293	5	179	0	184	10	504	0	514	1265
08:30	24	132	65	221	0	288	0	288	4	196	0	200	8	515	0	523	1232
08:45	30	169	75	274	0	226	0	226	0	198	0	198	9	504	0	513	1211
Total	121	625	297	1043	0	1131	0	1131	12	748	0	760	34	2006	0	2040	4974
Grand Total	230	1127	600	1957	0	2010	0	2010	19	1274	0	1293	63	3938	0	4001	9261
Apprch %	11.8	57.6	30.7		0	100	0		1.5	98.5	0		1.6	98.4	0		
Total %	2.5	12.2	6.5	21.1	0	21.7	0	21.7	0.2	13.8	0	14	0.7	42.5	0	43.2	

	STANYAN ST Southbound				FELL / OAK ST Westbound				STANYAN ST Northbound				KEZAR DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	**38**	160	70	268	0	303	0	303	4	174	0	178	**11**	502	0	513	1262
08:00	37	157	**80**	**274**	0	**324**	0	**324**	3	175	0	178	7	483	0	490	**1266**
08:15	30	**167**	77	274	0	293	0	293	**5**	179	0	184	10	504	0	514	1265
08:30	24	132	65	221	0	288	0	288	4	**196**	0	**200**	8	**515**	0	**523**	1232
Total Volume	129	616	292	1037	0	1208	0	1208	16	724	0	740	36	2004	0	2040	5025
% App. Total	12.4	59.4	28.2		0	100	0		2.2	97.8	0		1.8	98.2	0		
PHF	.849	.922	.913	.946	.000	.932	.000	.932	.800	.923	.000	.925	.818	.973	.000	.975	.992



MARKS TRAFFIC DATA

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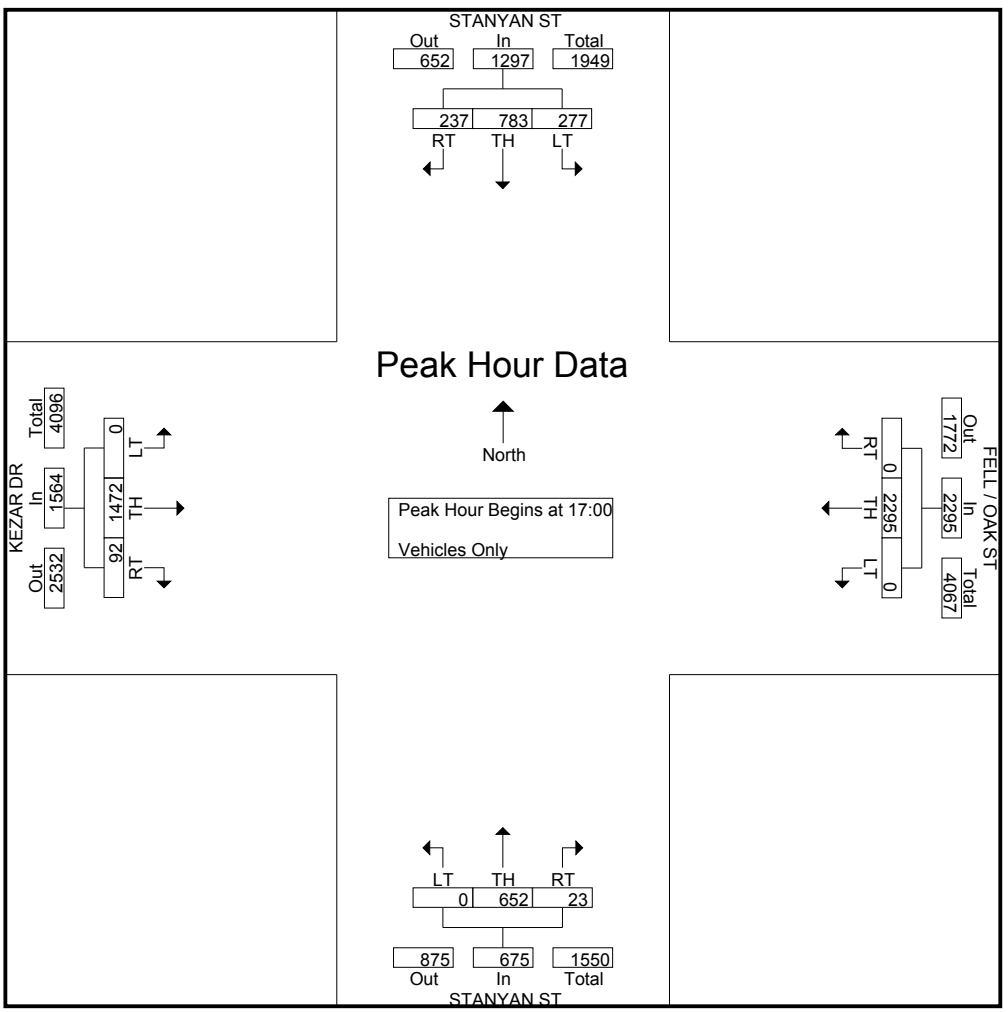
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : stanyan-kezar-p
Site Code : 23
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	STANYAN ST Southbound				FELL / OAK ST Westbound				STANYAN ST Northbound				KEZAR DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	44	153	52	249	0	471	0	471	8	139	0	147	24	328	0	352	1219
16:15	63	152	69	284	0	487	0	487	13	130	0	143	30	350	0	380	1294
16:30	58	197	67	322	0	498	0	498	5	162	0	167	31	346	0	377	1364
16:45	60	153	68	281	0	515	0	515	6	171	0	177	15	345	0	360	1333
Total	225	655	256	1136	0	1971	0	1971	32	602	0	634	100	1369	0	1469	5210
17:00	61	169	68	298	0	499	0	499	4	158	0	162	23	366	0	389	1348
17:15	68	208	70	346	0	620	0	620	7	160	0	167	26	377	0	403	1536
17:30	64	205	69	338	0	593	0	593	7	168	0	175	13	375	0	388	1494
17:45	44	201	70	315	0	583	0	583	5	166	0	171	30	354	0	384	1453
Total	237	783	277	1297	0	2295	0	2295	23	652	0	675	92	1472	0	1564	5831
Grand Total	462	1438	533	2433	0	4266	0	4266	55	1254	0	1309	192	2841	0	3033	11041
Apprch %	19	59.1	21.9		0	100	0		4.2	95.8	0		6.3	93.7	0		
Total %	4.2	13	4.8	22	0	38.6	0	38.6	0.5	11.4	0	11.9	1.7	25.7	0	27.5	

	STANYAN ST Southbound				FELL / OAK ST Westbound				STANYAN ST Northbound				KEZAR DR Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	61	169	68	298	0	499	0	499	4	158	0	162	23	366	0	389	1348
17:15	**68**	**208**	**70**	**346**	0	**620**	0	**620**	**7**	160	0	167	26	**377**	0	**403**	**1536**
17:30	64	205	69	338	0	593	0	593	7	**168**	0	**175**	13	375	0	388	1494
17:45	44	201	70	315	0	583	0	583	5	166	0	171	**30**	354	0	384	1453
Total Volume	237	783	277	1297	0	2295	0	2295	23	652	0	675	92	1472	0	1564	5831
% App. Total	18.3	60.4	21.4		0	100	0		3.4	96.6	0		5.9	94.1	0		
PHF	.871	.941	.989	.937	.000	.925	.000	.925	.821	.970	.000	.964	.767	.976	.000	.970	.949



MARKS TRAFFIC DATA

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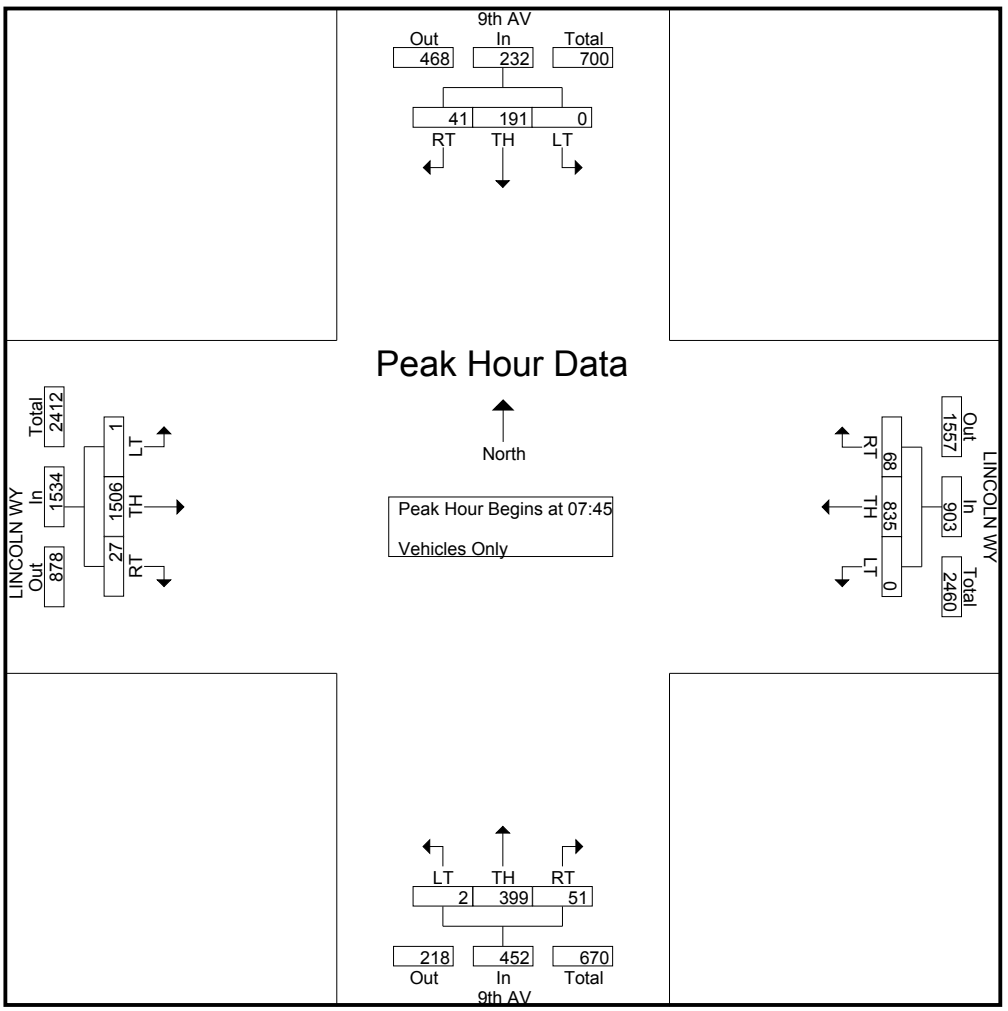
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 9-lincoln-a
Site Code : 18
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	9th AV Southbound				LINCOLN WY Westbound				9th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	6	27	0	33	2	101	0	103	23	41	0	64	3	339	0	342	542
07:15	3	43	0	46	3	119	0	122	20	62	0	82	4	378	0	382	632
07:30	7	35	0	42	13	188	0	201	19	89	3	111	5	394	0	399	753
07:45	4	38	0	42	11	236	0	247	12	97	1	110	5	379	1	385	784
Total	20	143	0	163	29	644	0	673	74	289	4	367	17	1490	1	1508	2711
08:00	19	50	0	69	22	214	0	236	12	101	1	114	5	362	0	367	786
08:15	10	44	0	54	18	203	0	221	15	105	0	120	7	384	0	391	786
08:30	8	59	0	67	17	182	0	199	12	96	0	108	10	381	0	391	765
08:45	13	51	0	64	10	185	0	195	7	92	0	99	11	347	0	358	716
Total	50	204	0	254	67	784	0	851	46	394	1	441	33	1474	0	1507	3053
Grand Total	70	347	0	417	96	1428	0	1524	120	683	5	808	50	2964	1	3015	5764
Apprch %	16.8	83.2	0		6.3	93.7	0		14.9	84.5	0.6		1.7	98.3	0		
Total %	1.2	6	0	7.2	1.7	24.8	0	26.4	2.1	11.8	0.1	14	0.9	51.4	0	52.3	

	9th AV Southbound				LINCOLN WY Westbound				9th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	4	38	0	42	11	**236**	0	**247**	12	97	**1**	110	5	379	**1**	385	784
08:00	**19**	50	0	**69**	**22**	214	0	236	12	101	1	114	5	362	0	367	**786**
08:15	10	44	0	54	18	203	0	221	**15**	**105**	0	**120**	7	**384**	0	**391**	786
08:30	8	**59**	0	67	17	182	0	199	12	96	0	108	**10**	381	0	391	765
Total Volume	41	191	0	232	68	835	0	903	51	399	2	452	27	1506	1	1534	3121
% App. Total	17.7	82.3	0		7.5	92.5	0		11.3	88.3	0.4		1.8	98.2	0.1		
PHF	.539	.809	.000	.841	.773	.885	.000	.914	.850	.950	.500	.942	.675	.980	.250	.981	.993



MARKS TRAFFIC DATA

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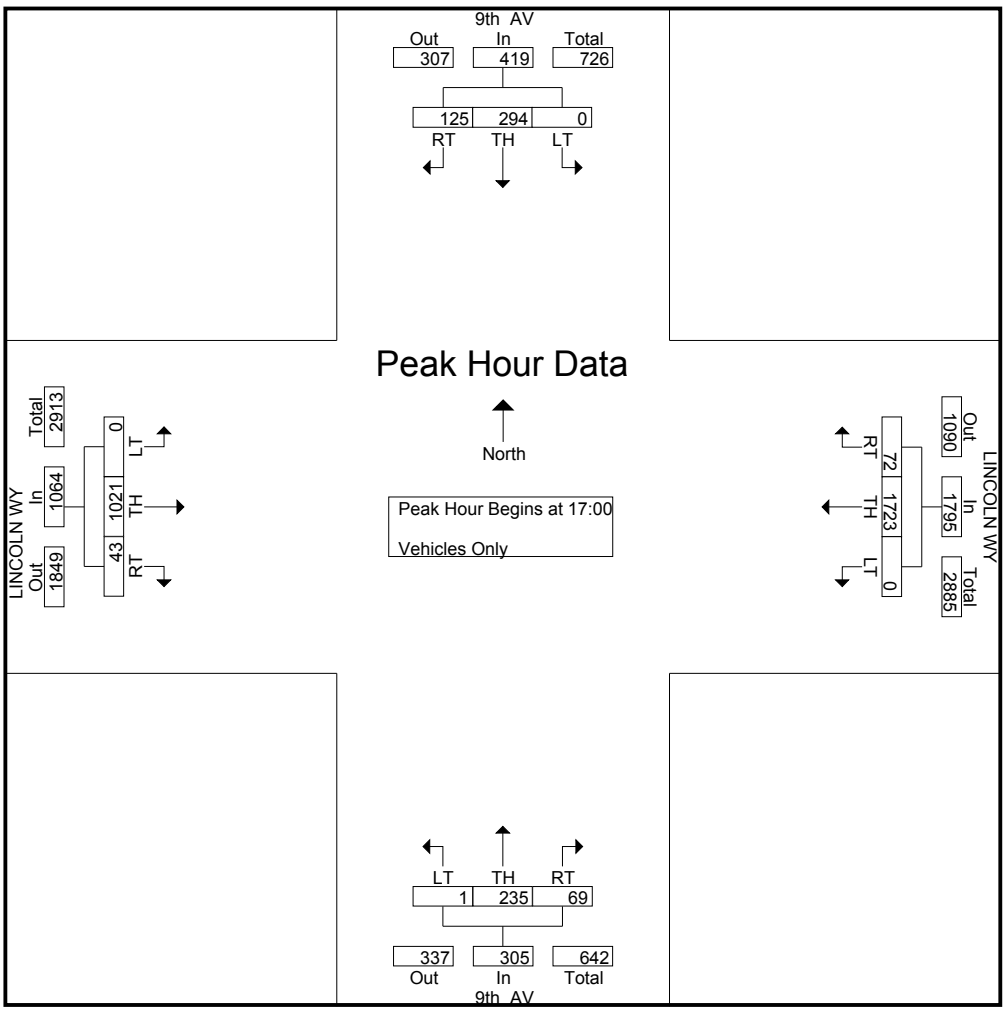
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 9-lincoln-p
Site Code : 18
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	9th AV Southbound				LINCOLN WY Westbound				9th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	20	67	1	88	11	337	0	348	16	71	0	87	13	249	0	262	785
16:15	28	76	0	104	14	347	0	361	9	74	0	83	13	235	0	248	796
16:30	14	71	0	85	12	396	0	408	23	53	2	78	11	257	0	268	839
16:45	28	78	3	109	13	408	0	421	15	69	0	84	11	247	0	258	872
Total	90	292	4	386	50	1488	0	1538	63	267	2	332	48	988	0	1036	3292
17:00	24	68	0	92	21	410	0	431	19	48	0	67	10	260	0	270	860
17:15	36	68	0	104	18	426	0	444	9	60	0	69	17	240	0	257	874
17:30	38	87	0	125	15	439	0	454	25	67	0	92	7	271	0	278	949
17:45	27	71	0	98	18	448	0	466	16	60	1	77	9	250	0	259	900
Total	125	294	0	419	72	1723	0	1795	69	235	1	305	43	1021	0	1064	3583
Grand Total	215	586	4	805	122	3211	0	3333	132	502	3	637	91	2009	0	2100	6875
Apprch %	26.7	72.8	0.5		3.7	96.3	0		20.7	78.8	0.5		4.3	95.7	0		
Total %	3.1	8.5	0.1	11.7	1.8	46.7	0	48.5	1.9	7.3	0	9.3	1.3	29.2	0	30.5	

	9th AV Southbound				LINCOLN WY Westbound				9th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	24	68	0	92	**21**	410	0	431	19	48	0	67	10	260	0	270	860
17:15	36	68	0	104	18	426	0	444	9	60	0	69	**17**	240	0	257	874
17:30	**38**	**87**	0	**125**	15	439	0	454	**25**	**67**	0	**92**	7	**271**	0	**278**	**949**
17:45	27	71	0	98	18	**448**	0	**466**	16	60	**1**	77	9	250	0	259	900
Total Volume	125	294	0	419	72	1723	0	1795	69	235	1	305	43	1021	0	1064	3583
% App. Total	29.8	70.2	0		4	96	0		22.6	77	0.3		4	96	0		
PHF	.822	.845	.000	.838	.857	.961	.000	.963	.690	.877	.250	.829	.632	.942	.000	.957	.944



MARKS TRAFFIC DATA

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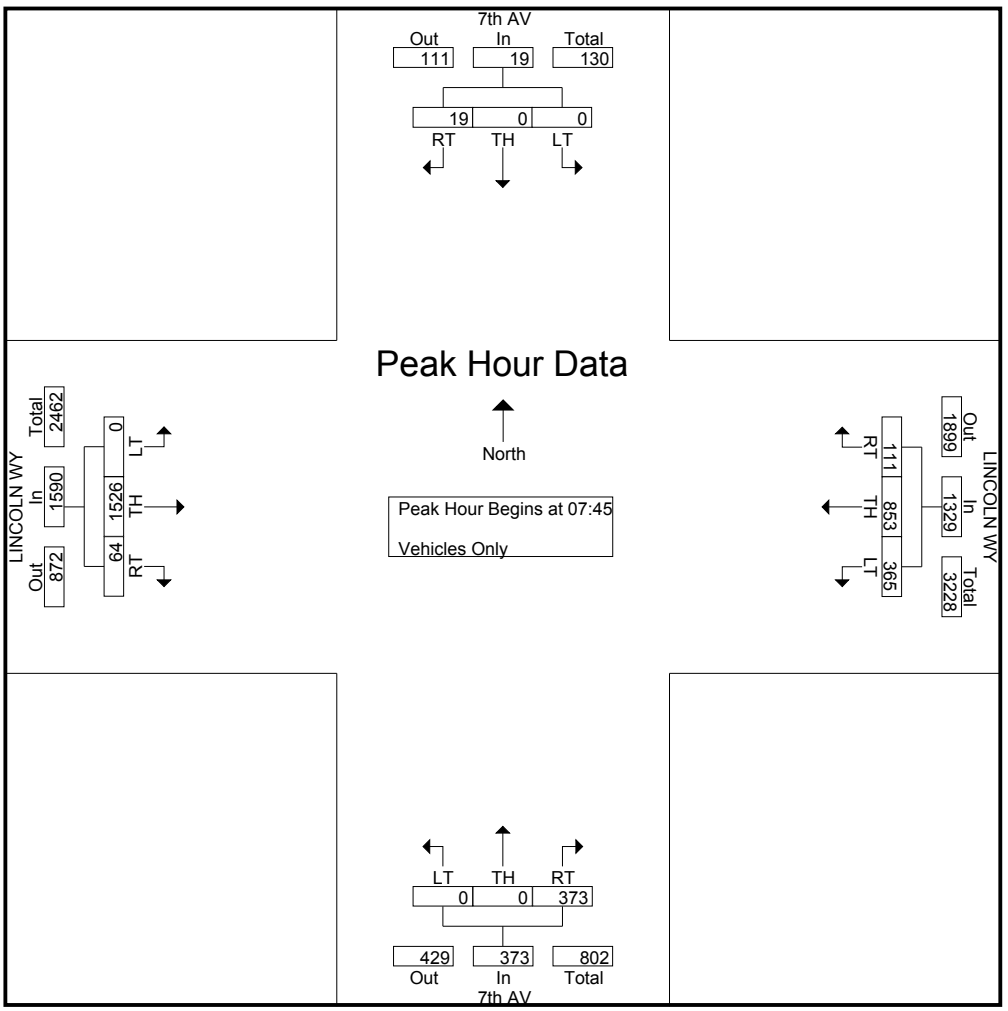
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-lincoln-a
Site Code : 19
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	7th AV Southbound				LINCOLN WY Westbound				7th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	3	0	0	3	11	108	30	149	58	0	0	58	18	319	0	337	547
07:15	1	0	0	1	11	120	43	174	94	0	0	94	15	393	0	408	677
07:30	1	0	0	1	20	194	66	280	96	0	0	96	11	385	0	396	773
07:45	2	0	0	2	31	235	92	358	90	0	0	90	17	387	0	404	854
Total	7	0	0	7	73	657	231	961	338	0	0	338	61	1484	0	1545	2851
08:00	6	0	0	6	26	231	109	366	88	0	0	88	17	388	0	405	865
08:15	6	0	0	6	30	204	84	318	92	0	0	92	17	378	0	395	811
08:30	5	0	0	5	24	183	80	287	103	0	0	103	13	373	0	386	781
08:45	4	0	0	4	32	189	76	297	115	0	0	115	16	343	0	359	775
Total	21	0	0	21	112	807	349	1268	398	0	0	398	63	1482	0	1545	3232
Grand Total	28	0	0	28	185	1464	580	2229	736	0	0	736	124	2966	0	3090	6083
Apprch %	100	0	0		8.3	65.7	26		100	0	0		4	96	0		
Total %	0.5	0	0	0.5	3	24.1	9.5	36.6	12.1	0	0	12.1	2	48.8	0	50.8	

	7th AV Southbound				LINCOLN WY Westbound				7th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	2	0	0	2	**31**	**235**	92	358	90	0	0	90	**17**	387	0	404	854
08:00	**6**	0	0	**6**	26	231	**109**	**366**	88	0	0	88	17	**388**	0	**405**	**865**
08:15	6	0	0	6	30	204	84	318	92	0	0	92	17	378	0	395	811
08:30	5	0	0	5	24	183	80	287	**103**	0	0	**103**	13	373	0	386	781
Total Volume	19	0	0	19	111	853	365	1329	373	0	0	373	64	1526	0	1590	3311
% App. Total	100	0	0		8.4	64.2	27.5		100	0	0		4	96	0		
PHF	.792	.000	.000	.792	.895	.907	.837	.908	.905	.000	.000	.905	.941	.983	.000	.981	.957



MARKS TRAFFIC DATA

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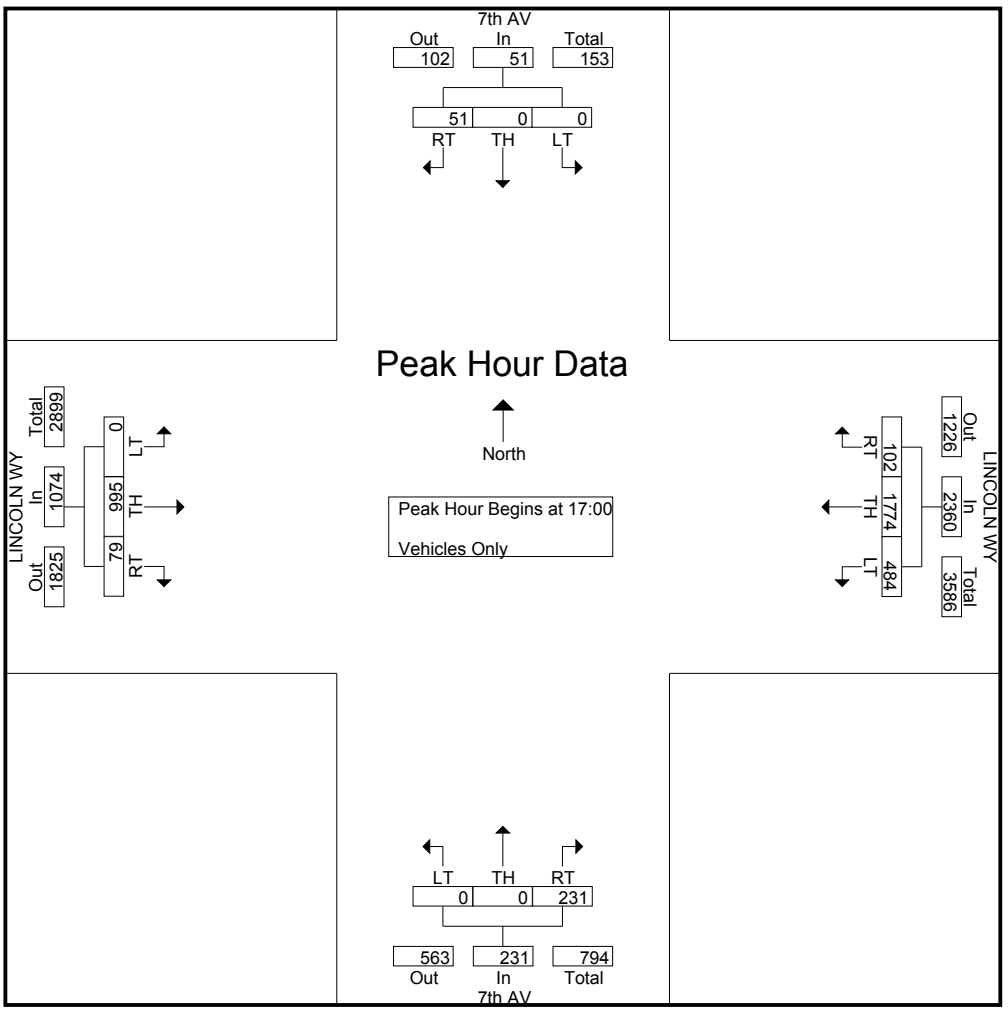
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-lincoln-p
Site Code : 19
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	7th AV Southbound				LINCOLN WY Westbound				7th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	14	0	0	14	14	327	122	463	91	0	0	91	18	245	0	263	831
16:15	4	0	0	4	17	369	127	513	68	0	0	68	18	213	0	231	816
16:30	8	0	0	8	11	397	122	530	73	0	0	73	26	251	0	277	888
16:45	4	0	0	4	27	410	120	557	60	0	0	60	20	247	0	267	888
Total	30	0	0	30	69	1503	491	2063	292	0	0	292	82	956	0	1038	3423
17:00	6	0	0	6	22	428	134	584	63	0	0	63	19	266	0	285	938
17:15	13	0	0	13	28	438	103	569	56	0	0	56	18	224	0	242	880
17:30	15	0	0	15	22	446	131	599	64	0	0	64	22	271	0	293	971
17:45	17	0	0	17	30	462	116	608	48	0	0	48	20	234	0	254	927
Total	51	0	0	51	102	1774	484	2360	231	0	0	231	79	995	0	1074	3716
Grand Total	81	0	0	81	171	3277	975	4423	523	0	0	523	161	1951	0	2112	7139
Apprch %	100	0	0		3.9	74.1	22		100	0	0		7.6	92.4	0		
Total %	1.1	0	0	1.1	2.4	45.9	13.7	62	7.3	0	0	7.3	2.3	27.3	0	29.6	

	7th AV Southbound				LINCOLN WY Westbound				7th AV Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	6	0	0	6	22	428	**134**	584	63	0	0	63	19	266	0	285	938
17:15	13	0	0	13	28	438	103	569	56	0	0	56	18	224	0	242	880
17:30	15	0	0	15	22	446	131	599	**64**	0	0	**64**	**22**	**271**	0	**293**	**971**
17:45	**17**	0	0	**17**	**30**	**462**	116	**608**	48	0	0	48	20	234	0	254	927
Total Volume	51	0	0	51	102	1774	484	2360	231	0	0	231	79	995	0	1074	3716
% App. Total	100	0	0		4.3	75.2	20.5		100	0	0		7.4	92.6	0		
PHF	.750	.000	.000	.750	.850	.960	.903	.970	.902	.000	.000	.902	.898	.918	.000	.916	.957



MARKS TRAFFIC DATA

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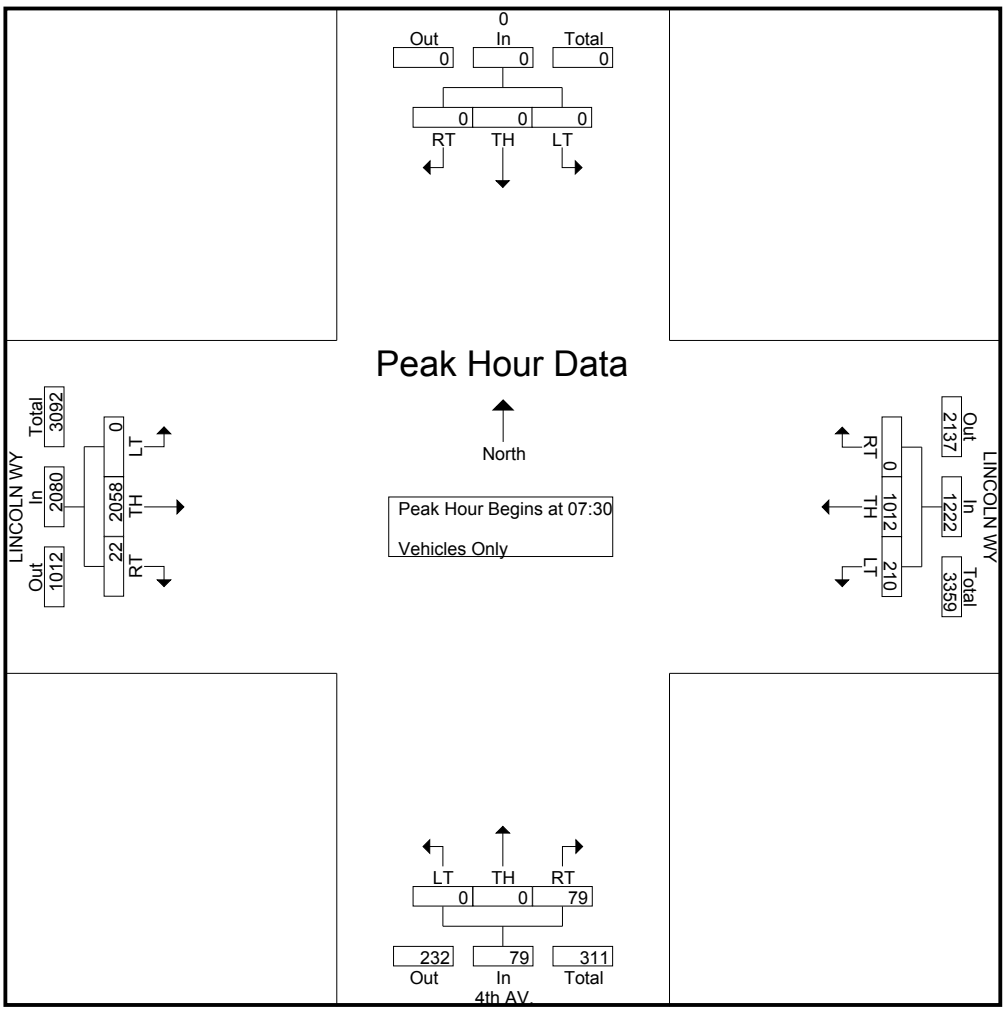
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-lincoln-a
Site Code : 20
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				LINCOLN WY Westbound				4th AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	0	0	0	0	132	31	163	17	0	0	17	0	417	0	417	597
07:15	0	0	0	0	0	169	16	185	23	0	0	23	8	495	0	503	711
07:30	0	0	0	0	0	219	40	259	29	0	0	29	7	526	0	533	821
07:45	0	0	0	0	0	251	55	306	20	0	0	20	5	514	0	519	845
Total	0	0	0	0	0	771	142	913	89	0	0	89	20	1952	0	1972	2974
08:00	0	0	0	0	0	279	57	336	16	0	0	16	6	505	0	511	863
08:15	0	0	0	0	0	263	58	321	14	0	0	14	4	513	0	517	852
08:30	0	0	0	0	0	251	57	308	18	0	0	18	6	469	0	475	801
08:45	0	0	0	0	0	254	51	305	19	0	0	19	8	451	0	459	783
Total	0	0	0	0	0	1047	223	1270	67	0	0	67	24	1938	0	1962	3299
Grand Total	0	0	0	0	0	1818	365	2183	156	0	0	156	44	3890	0	3934	6273
Apprch %	0	0	0		0	83.3	16.7		100	0	0		1.1	98.9	0		
Total %	0	0	0	0	0	29	5.8	34.8	2.5	0	0	2.5	0.7	62	0	62.7	

	0 Southbound				LINCOLN WY Westbound				4th AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	0	0	0	0	0	219	40	259	**29**	0	0	**29**	**7**	**526**	0	**533**	821
07:45	0	0	0	0	0	251	55	306	20	0	0	20	5	514	0	519	845
08:00	0	0	0	0	0	**279**	57	**336**	16	0	0	16	6	505	0	511	**863**
08:15	0	0	0	0	0	263	**58**	321	14	0	0	14	4	513	0	517	852
Total Volume	0	0	0	0	0	1012	210	1222	79	0	0	79	22	2058	0	2080	3381
% App. Total	0	0	0		0	82.8	17.2		100	0	0		1.1	98.9	0		
PHF	.000	.000	.000	.000	.000	.907	.905	.909	.681	.000	.000	.681	.786	.978	.000	.976	.979



MARKS TRAFFIC DATA

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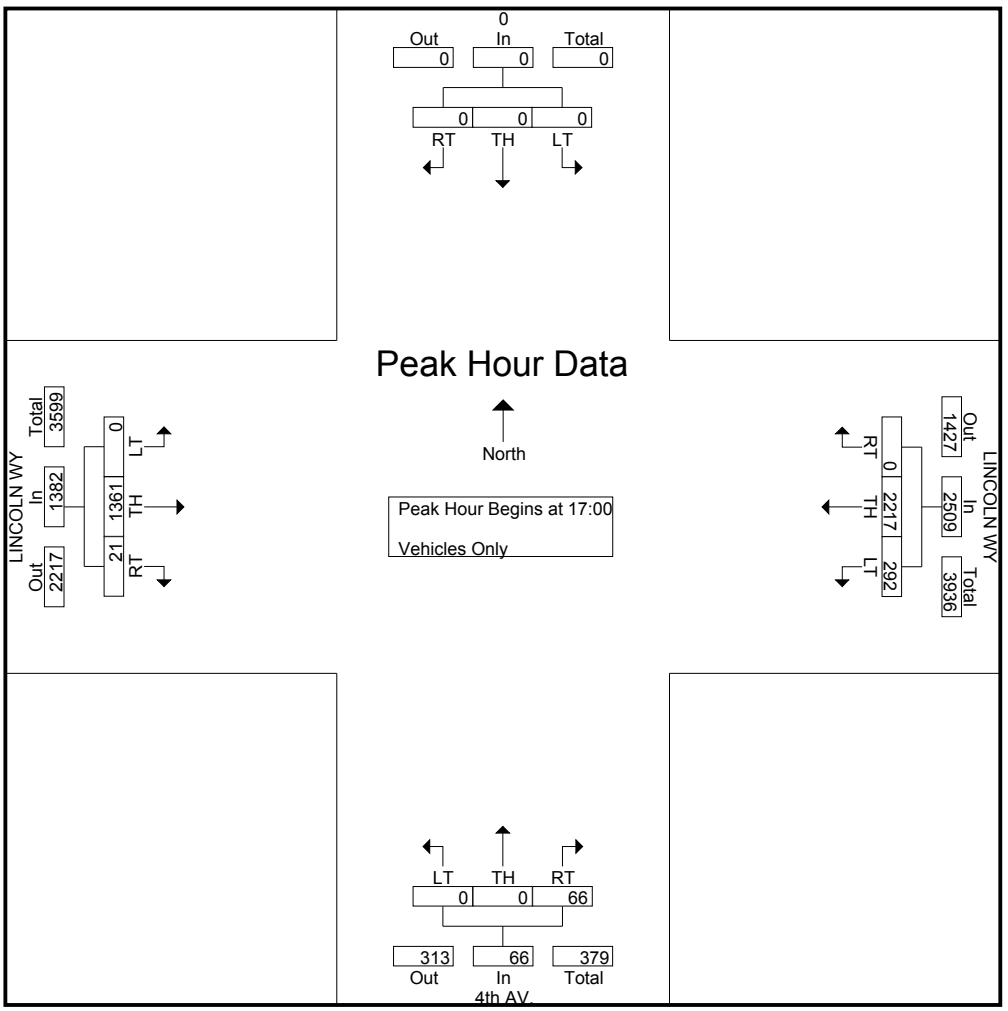
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-lincoln-p
Site Code : 20
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				LINCOLN WY Westbound				4th AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	0	0	0	0	0	450	51	501	15	0	0	15	2	342	0	344	860
16:15	0	0	0	0	0	487	45	532	15	0	0	15	2	320	0	322	869
16:30	0	0	0	0	0	469	48	517	12	0	0	12	6	330	0	336	865
16:45	0	0	0	0	0	533	43	576	10	0	0	10	6	332	0	338	924
Total	0	0	0	0	0	1939	187	2126	52	0	0	52	16	1324	0	1340	3518
17:00	0	0	0	0	0	540	77	617	11	0	0	11	8	324	0	332	960
17:15	0	0	0	0	0	561	64	625	24	0	0	24	2	344	0	346	995
17:30	0	0	0	0	0	546	79	625	17	0	0	17	5	351	0	356	998
17:45	0	0	0	0	0	570	72	642	14	0	0	14	6	342	0	348	1004
Total	0	0	0	0	0	2217	292	2509	66	0	0	66	21	1361	0	1382	3957
Grand Total	0	0	0	0	0	4156	479	4635	118	0	0	118	37	2685	0	2722	7475
Apprch %	0	0	0		0	89.7	10.3		100	0	0		1.4	98.6	0		
Total %	0	0	0	0	0	55.6	6.4	62	1.6	0	0	1.6	0.5	35.9	0	36.4	

	0 Southbound				LINCOLN WY Westbound				4th AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	0	0	0	0	540	77	617	11	0	0	11	**8**	324	0	332	960
17:15	0	0	0	0	0	561	64	625	**24**	0	0	**24**	2	344	0	346	995
17:30	0	0	0	0	0	546	**79**	625	17	0	0	17	5	**351**	0	**356**	998
17:45	0	0	0	0	0	**570**	72	**642**	14	0	0	14	6	342	0	348	**1004**
Total Volume	0	0	0	0	0	2217	292	2509	66	0	0	66	21	1361	0	1382	3957
% App. Total	0	0	0		0	88.4	11.6		100	0	0		1.5	98.5	0		
PHF	.000	.000	.000	.000	.000	.972	.924	.977	.688	.000	.000	.688	.656	.969	.000	.971	.985



MARKS TRAFFIC DATA

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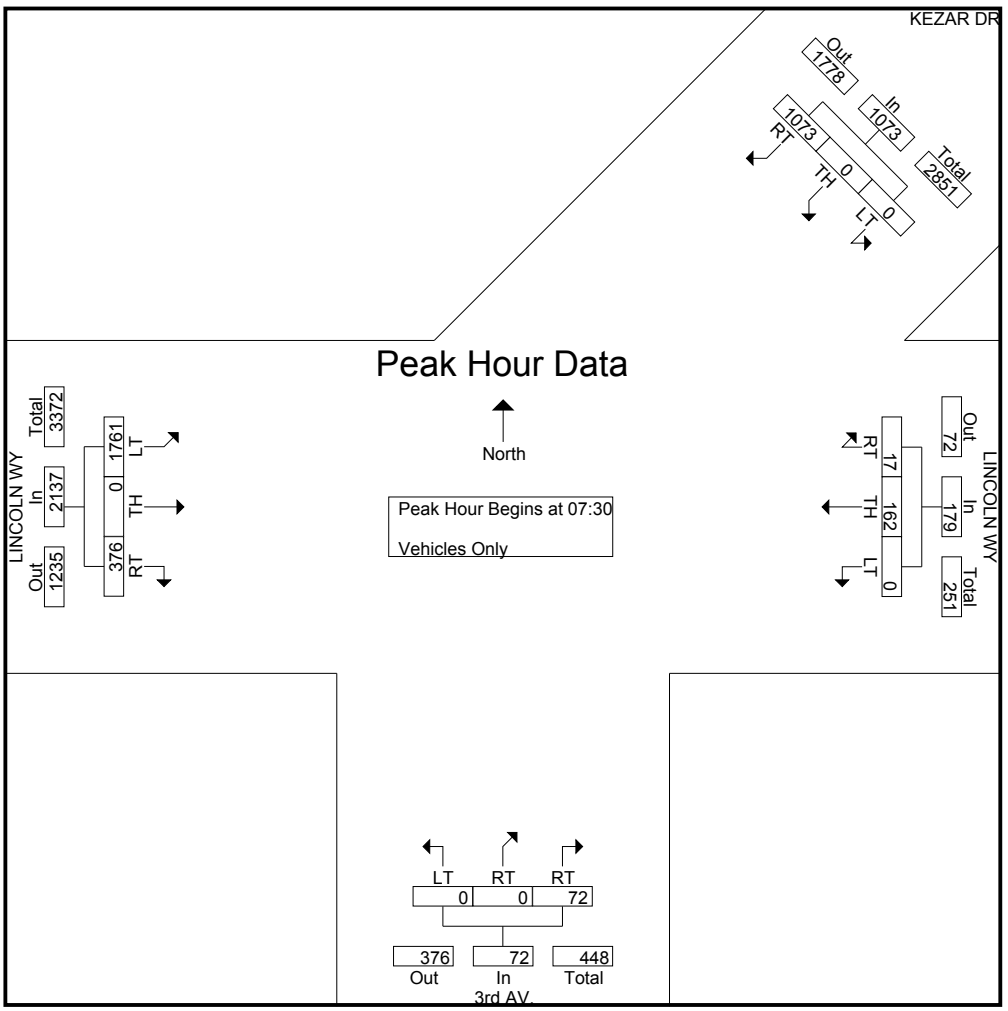
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-lincoln-a
Site Code : 21
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	KEZAR DR Southwestbound				LINCOLN WY Westbound				3rd AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	RT	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	146	0	0	146	3	15	0	18	7	0	0	7	53	0	382	435	606
07:15	167	0	0	167	3	19	0	22	9	0	0	9	68	0	452	520	718
07:30	236	0	0	236	4	29	0	33	27	0	0	27	78	0	480	558	854
07:45	257	0	0	257	2	47	0	49	22	0	0	22	109	0	422	531	859
Total	806	0	0	806	12	110	0	122	65	0	0	65	308	0	1736	2044	3037
08:00	300	0	0	300	7	39	0	46	10	0	0	10	98	0	425	523	879
08:15	280	0	0	280	4	47	0	51	13	0	0	13	91	0	434	525	869
08:30	260	0	0	260	3	45	0	48	20	0	0	20	69	0	419	488	816
08:45	260	0	0	260	5	45	0	50	11	0	0	11	61	0	417	478	799
Total	1100	0	0	1100	19	176	0	195	54	0	0	54	319	0	1695	2014	3363
Grand Total	1906	0	0	1906	31	286	0	317	119	0	0	119	627	0	3431	4058	6400
Apprch %	100	0	0		9.8	90.2	0		100	0	0		15.5	0	84.5		
Total %	29.8	0	0	29.8	0.5	4.5	0	5	1.9	0	0	1.9	9.8	0	53.6	63.4	

	KEZAR DR Southwestbound				LINCOLN WY Westbound				3rd AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	RT	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	236	0	0	236	4	29	0	33	**27**	0	0	**27**	78	0	**480**	**558**	854
07:45	257	0	0	257	2	**47**	0	49	22	0	0	22	**109**	0	422	531	859
08:00	**300**	0	0	**300**	**7**	39	0	46	10	0	0	10	98	0	425	523	**879**
08:15	280	0	0	280	4	47	0	**51**	13	0	0	13	91	0	434	525	869
Total Volume	1073	0	0	1073	17	162	0	179	72	0	0	72	376	0	1761	2137	3461
% App. Total	100	0	0		9.5	90.5	0		100	0	0		17.6	0	82.4		
PHF	.894	.000	.000	.894	.607	.862	.000	.877	.667	.000	.000	.667	.862	.000	.917	.957	.984



MARKS TRAFFIC DATA

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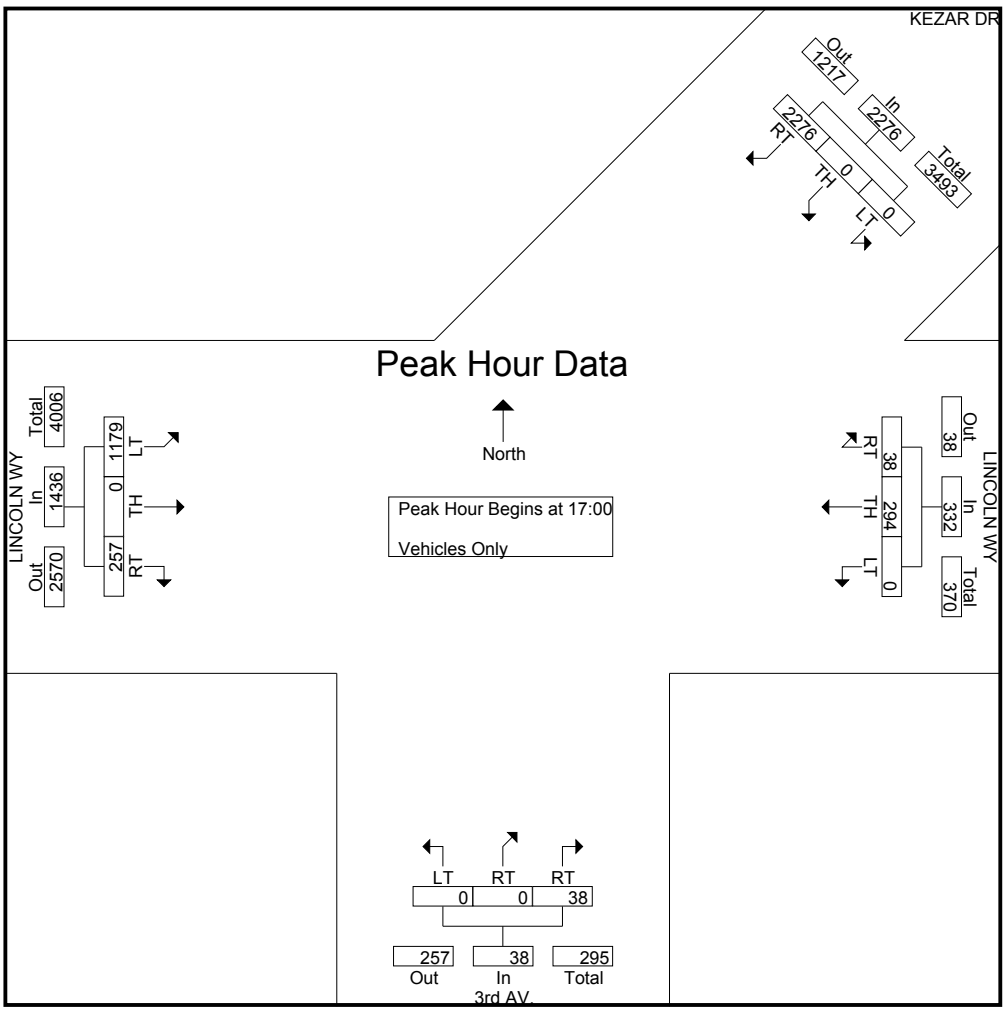
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-lincoln-p
Site Code : 21
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	KEZAR DR Southwestbound				LINCOLN WY Westbound				3rd AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	RT	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	453	0	0	453	10	50	0	60	10	0	0	10	66	0	287	353	876
16:15	457	0	0	457	12	72	0	84	6	0	0	6	59	0	275	334	881
16:30	466	0	0	466	8	58	0	66	14	0	0	14	61	0	280	341	887
16:45	516	0	0	516	12	65	0	77	12	0	0	12	55	0	285	340	945
Total	1892	0	0	1892	42	245	0	287	42	0	0	42	241	0	1127	1368	3589
17:00	553	0	0	553	12	77	0	89	10	0	0	10	63	0	274	337	989
17:15	554	0	0	554	7	71	0	78	11	0	0	11	66	0	301	367	1010
17:30	589	0	0	589	9	75	0	84	8	0	0	8	60	0	311	371	1052
17:45	580	0	0	580	10	71	0	81	9	0	0	9	68	0	293	361	1031
Total	2276	0	0	2276	38	294	0	332	38	0	0	38	257	0	1179	1436	4082
Grand Total	4168	0	0	4168	80	539	0	619	80	0	0	80	498	0	2306	2804	7671
Apprch %	100	0	0		12.9	87.1	0		100	0	0		17.8	0	82.2		
Total %	54.3	0	0	54.3	1	7	0	8.1	1	0	0	1	6.5	0	30.1	36.6	

	KEZAR DR Southwestbound				LINCOLN WY Westbound				3rd AV. Northbound				LINCOLN WY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	RT	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	553	0	0	553	**12**	**77**	0	**89**	10	0	0	10	63	0	274	337	989
17:15	554	0	0	554	7	71	0	78	**11**	0	0	**11**	66	0	301	367	1010
17:30	**589**	0	0	**589**	9	75	0	84	8	0	0	8	60	0	**311**	**371**	**1052**
17:45	580	0	0	580	10	71	0	81	9	0	0	9	**68**	0	293	361	1031
Total Volume	2276	0	0	2276	38	294	0	332	38	0	0	38	257	0	1179	1436	4082
% App. Total	100	0	0		11.4	88.6	0		100	0	0		17.9	0	82.1		
PHF	.966	.000	.000	.966	.792	.955	.000	.933	.864	.000	.000	.864	.945	.000	.948	.968	.970



MARKS TRAFFIC DATA

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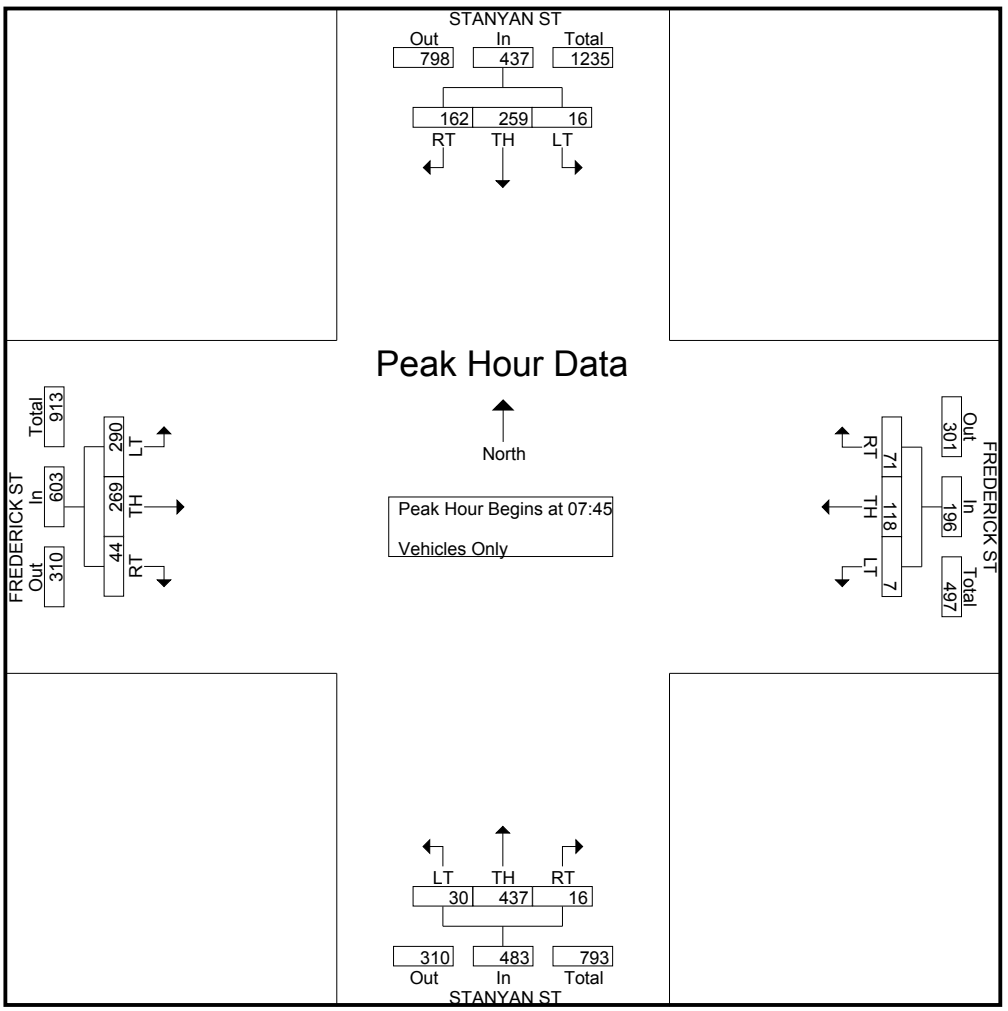
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : stanyan-frederick-a
Site Code : 22
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	STANYAN ST Southbound				FREDERICK ST Westbound				STANYAN ST Northbound				FREDERICK ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	16	38	4	58	17	14	0	31	0	52	3	55	8	9	35	52	196
07:15	31	60	5	96	12	14	3	29	2	82	3	87	13	36	50	99	311
07:30	20	63	5	88	15	26	5	46	4	113	8	125	16	45	71	132	391
07:45	34	62	4	100	23	27	0	50	6	99	6	111	14	75	73	162	423
Total	101	223	18	342	67	81	8	156	12	346	20	378	51	165	229	445	1321
08:00	45	72	2	119	19	23	3	45	4	95	9	108	11	65	67	143	415
08:15	42	61	4	107	14	22	2	38	3	125	10	138	11	64	82	157	440
08:30	41	64	6	111	15	46	2	63	3	118	5	126	8	65	68	141	441
08:45	39	74	7	120	18	39	1	58	0	89	4	93	16	35	65	116	387
Total	167	271	19	457	66	130	8	204	10	427	28	465	46	229	282	557	1683
Grand Total	268	494	37	799	133	211	16	360	22	773	48	843	97	394	511	1002	3004
Apprch %	33.5	61.8	4.6		36.9	58.6	4.4		2.6	91.7	5.7		9.7	39.3	51		
Total %	8.9	16.4	1.2	26.6	4.4	7	0.5	12	0.7	25.7	1.6	28.1	3.2	13.1	17	33.4	

	STANYAN ST Southbound				FREDERICK ST Westbound				STANYAN ST Northbound				FREDERICK ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	34	62	4	100	**23**	27	0	50	**6**	99	6	111	**14**	**75**	73	**162**	423
08:00	**45**	**72**	2	**119**	19	23	**3**	45	4	95	9	108	11	65	67	143	415
08:15	42	61	4	107	14	22	2	38	3	**125**	**10**	**138**	11	64	**82**	157	440
08:30	41	64	**6**	111	15	**46**	2	**63**	3	118	5	126	8	65	68	141	**441**
Total Volume	162	259	16	437	71	118	7	196	16	437	30	483	44	269	290	603	1719
% App. Total	37.1	59.3	3.7		36.2	60.2	3.6		3.3	90.5	6.2		7.3	44.6	48.1		
PHF	.900	.899	.667	.918	.772	.641	.583	.778	.667	.874	.750	.875	.786	.897	.884	.931	.974



MARKS TRAFFIC DATA

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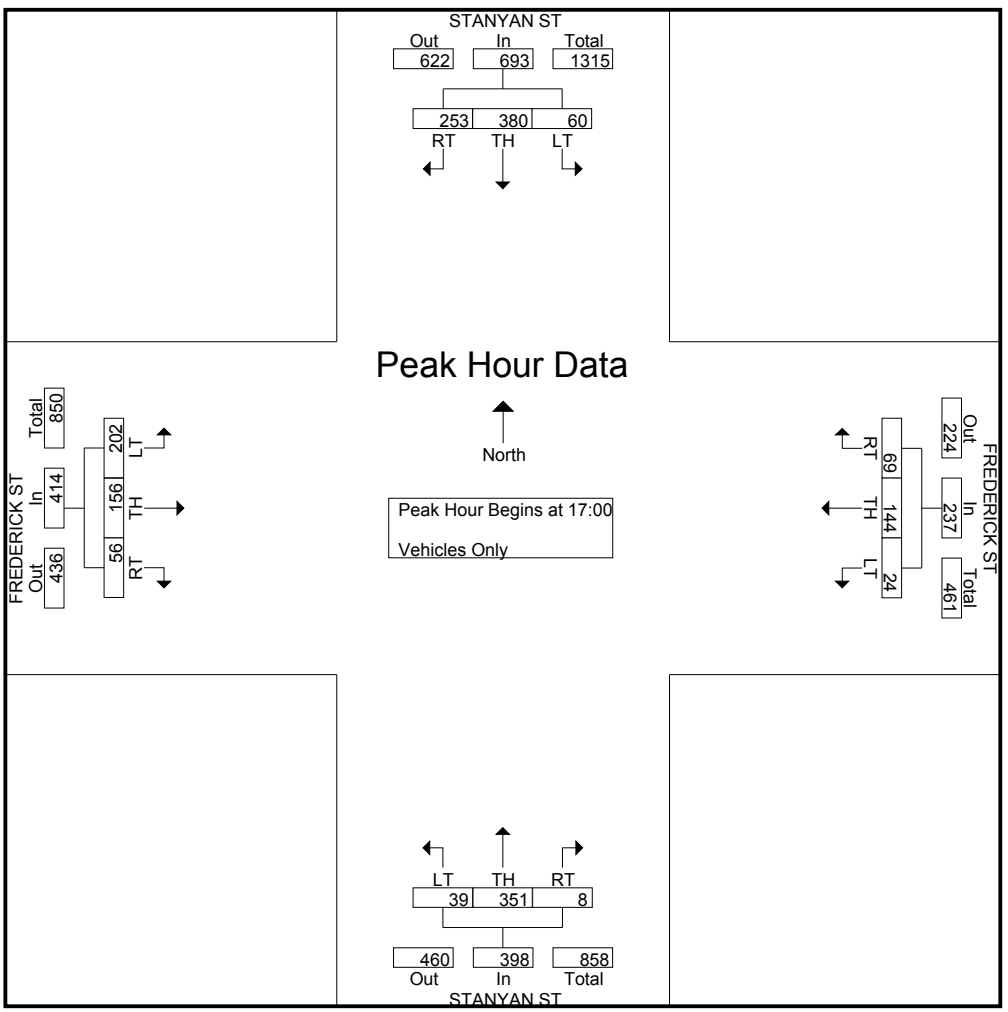
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : stanyan-frederick-p
Site Code : 22
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	STANYAN ST Southbound				FREDERICK ST Westbound				STANYAN ST Northbound				FREDERICK ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	57	70	9	136	14	31	4	49	1	90	12	103	11	23	46	80	368
16:15	47	75	8	130	17	27	2	46	2	88	15	105	9	28	36	73	354
16:30	56	85	14	155	20	29	7	56	0	85	9	94	15	35	59	109	414
16:45	60	95	11	166	16	29	3	48	2	87	10	99	11	38	45	94	407
Total	220	325	42	587	67	116	16	199	5	350	46	401	46	124	186	356	1543
17:00	63	94	15	172	19	29	7	55	2	83	6	91	15	36	47	98	416
17:15	67	88	15	170	14	32	6	52	1	101	10	112	8	37	48	93	427
17:30	60	96	14	170	20	43	8	71	5	82	13	100	14	36	44	94	435
17:45	63	102	16	181	16	40	3	59	0	85	10	95	19	47	63	129	464
Total	253	380	60	693	69	144	24	237	8	351	39	398	56	156	202	414	1742
Grand Total	473	705	102	1280	136	260	40	436	13	701	85	799	102	280	388	770	3285
Apprch %	37	55.1	8		31.2	59.6	9.2		1.6	87.7	10.6		13.2	36.4	50.4		
Total %	14.4	21.5	3.1	39	4.1	7.9	1.2	13.3	0.4	21.3	2.6	24.3	3.1	8.5	11.8	23.4	

	STANYAN ST Southbound				FREDERICK ST Westbound				STANYAN ST Northbound				FREDERICK ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	63	94	15	172	19	29	7	55	2	83	6	91	15	36	47	98	416
17:15	**67**	88	15	170	14	32	6	52	1	**101**	10	**112**	8	37	48	93	427
17:30	60	96	14	170	**20**	**43**	**8**	**71**	**5**	82	**13**	100	14	36	44	94	435
17:45	63	**102**	**16**	**181**	16	40	3	59	0	85	10	95	**19**	**47**	**63**	**129**	**464**
Total Volume	253	380	60	693	69	144	24	237	8	351	39	398	56	156	202	414	1742
% App. Total	36.5	54.8	8.7		29.1	60.8	10.1		2	88.2	9.8		13.5	37.7	48.8		
PHF	.944	.931	.938	.957	.863	.837	.750	.835	.400	.869	.750	.888	.737	.830	.802	.802	.939



MARKS TRAFFIC DATA

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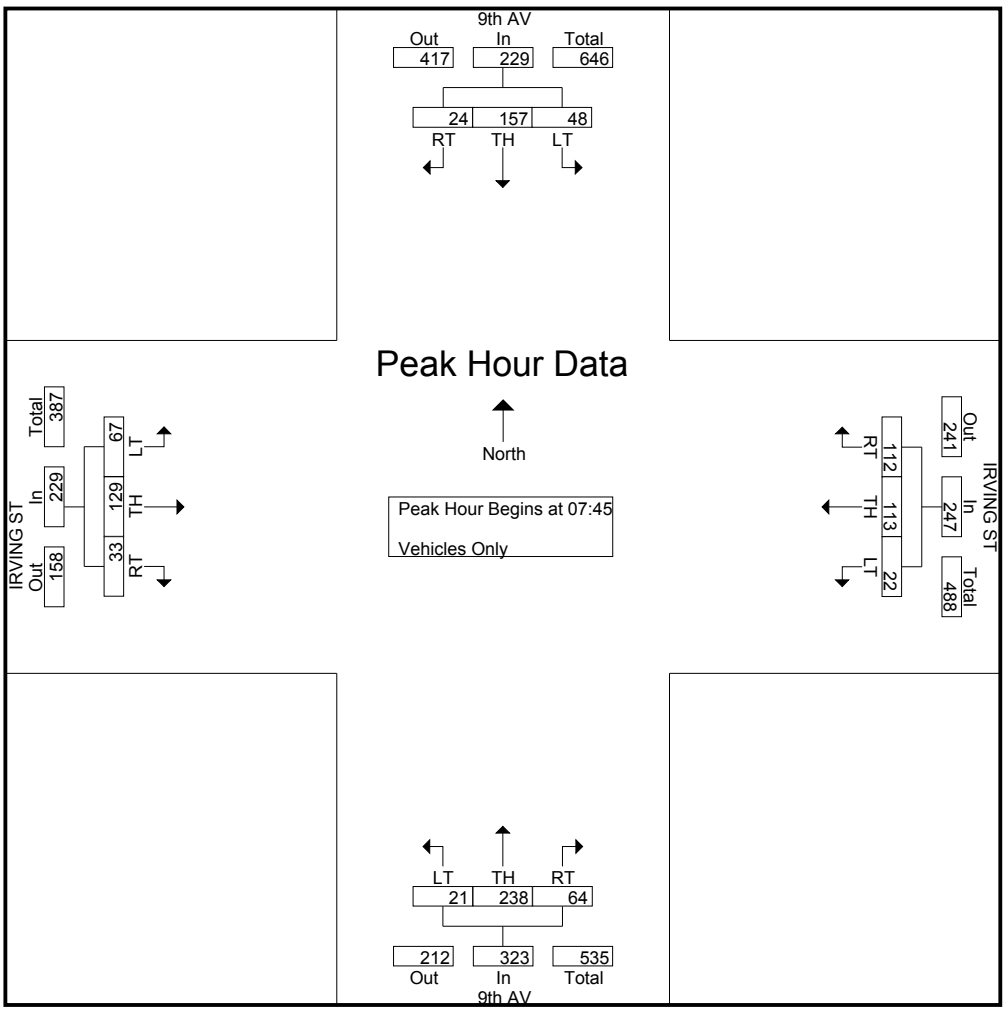
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 9-irving-a
Site Code : 13
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	9th AV Southbound				IRVING ST Westbound				9th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	4	21	6	31	18	10	7	35	8	32	1	41	2	16	8	26	133
07:15	4	24	11	39	20	12	3	35	8	44	4	56	9	20	5	34	164
07:30	5	20	14	39	22	20	5	47	13	63	1	77	4	27	24	55	218
07:45	2	46	16	64	23	30	1	54	19	64	5	88	6	39	15	60	266
Total	15	111	47	173	83	72	16	171	48	203	11	262	21	102	52	175	781
08:00	8	29	10	47	33	26	6	65	18	43	5	66	7	28	14	49	227
08:15	5	35	11	51	27	27	6	60	16	52	6	74	7	35	23	65	250
08:30	9	47	11	67	29	30	9	68	11	79	5	95	13	27	15	55	285
08:45	4	42	12	58	23	33	7	63	11	58	4	73	14	25	18	57	251
Total	26	153	44	223	112	116	28	256	56	232	20	308	41	115	70	226	1013
Grand Total	41	264	91	396	195	188	44	427	104	435	31	570	62	217	122	401	1794
Apprch %	10.4	66.7	23		45.7	44	10.3		18.2	76.3	5.4		15.5	54.1	30.4		
Total %	2.3	14.7	5.1	22.1	10.9	10.5	2.5	23.8	5.8	24.2	1.7	31.8	3.5	12.1	6.8	22.4	

	9th AV Southbound				IRVING ST Westbound				9th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	2	46	**16**	64	23	**30**	1	54	**19**	64	5	88	6	**39**	15	60	266
08:00	8	29	10	47	**33**	26	6	65	18	43	5	66	7	28	14	49	227
08:15	5	35	11	51	27	27	6	60	16	52	**6**	74	7	35	**23**	**65**	250
08:30	**9**	**47**	11	**67**	29	30	**9**	**68**	11	**79**	5	**95**	**13**	27	15	55	**285**
Total Volume	24	157	48	229	112	113	22	247	64	238	21	323	33	129	67	229	1028
% App. Total	10.5	68.6	21		45.3	45.7	8.9		19.8	73.7	6.5		14.4	56.3	29.3		
PHF	.667	.835	.750	.854	.848	.942	.611	.908	.842	.753	.875	.850	.635	.827	.728	.881	.902



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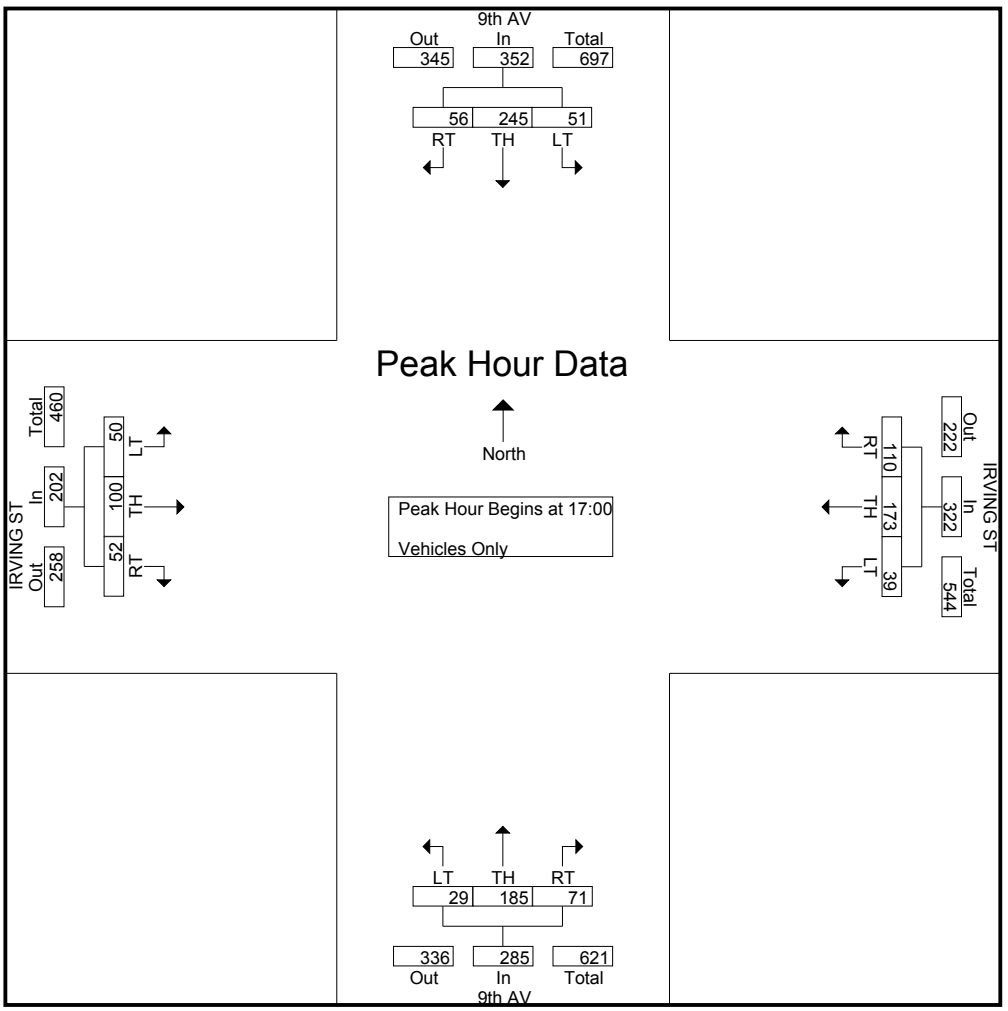
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 9-irving-p
Site Code : 13
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	9th AV Southbound				IRVING ST Westbound				9th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	12	54	13	79	18	43	13	74	9	39	8	56	16	14	14	44	253
16:15	11	43	18	72	21	57	8	86	9	37	7	53	14	30	8	52	263
16:30	14	46	16	76	24	26	6	56	11	62	4	77	7	21	16	44	253
16:45	12	53	15	80	25	34	12	71	12	52	10	74	10	28	16	54	279
Total	49	196	62	307	88	160	39	287	41	190	29	260	47	93	54	194	1048
17:00	14	60	10	84	20	48	7	75	20	41	8	69	10	20	9	39	267
17:15	12	62	15	89	29	46	13	88	13	47	2	62	12	34	10	56	295
17:30	16	65	13	94	27	42	12	81	14	52	14	80	13	21	13	47	302
17:45	14	58	13	85	34	37	7	78	24	45	5	74	17	25	18	60	297
Total	56	245	51	352	110	173	39	322	71	185	29	285	52	100	50	202	1161
Grand Total	105	441	113	659	198	333	78	609	112	375	58	545	99	193	104	396	2209
Apprch %	15.9	66.9	17.1		32.5	54.7	12.8		20.6	68.8	10.6		25	48.7	26.3		
Total %	4.8	20	5.1	29.8	9	15.1	3.5	27.6	5.1	17	2.6	24.7	4.5	8.7	4.7	17.9	

	9th AV Southbound				IRVING ST Westbound				9th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	14	60	10	84	20	**48**	7	75	20	41	8	69	10	20	9	39	267
17:15	12	62	**15**	89	29	46	**13**	**88**	13	47	2	62	12	**34**	10	56	295
17:30	**16**	**65**	13	**94**	27	42	12	81	14	**52**	**14**	**80**	13	21	13	47	**302**
17:45	14	58	13	85	**34**	37	7	78	**24**	45	5	74	**17**	25	**18**	**60**	297
Total Volume	56	245	51	352	110	173	39	322	71	185	29	285	52	100	50	202	1161
% App. Total	15.9	69.6	14.5		34.2	53.7	12.1		24.9	64.9	10.2		25.7	49.5	24.8		
PHF	.875	.942	.850	.936	.809	.901	.750	.915	.740	.889	.518	.891	.765	.735	.694	.842	.961



MARKS TRAFFIC DATA

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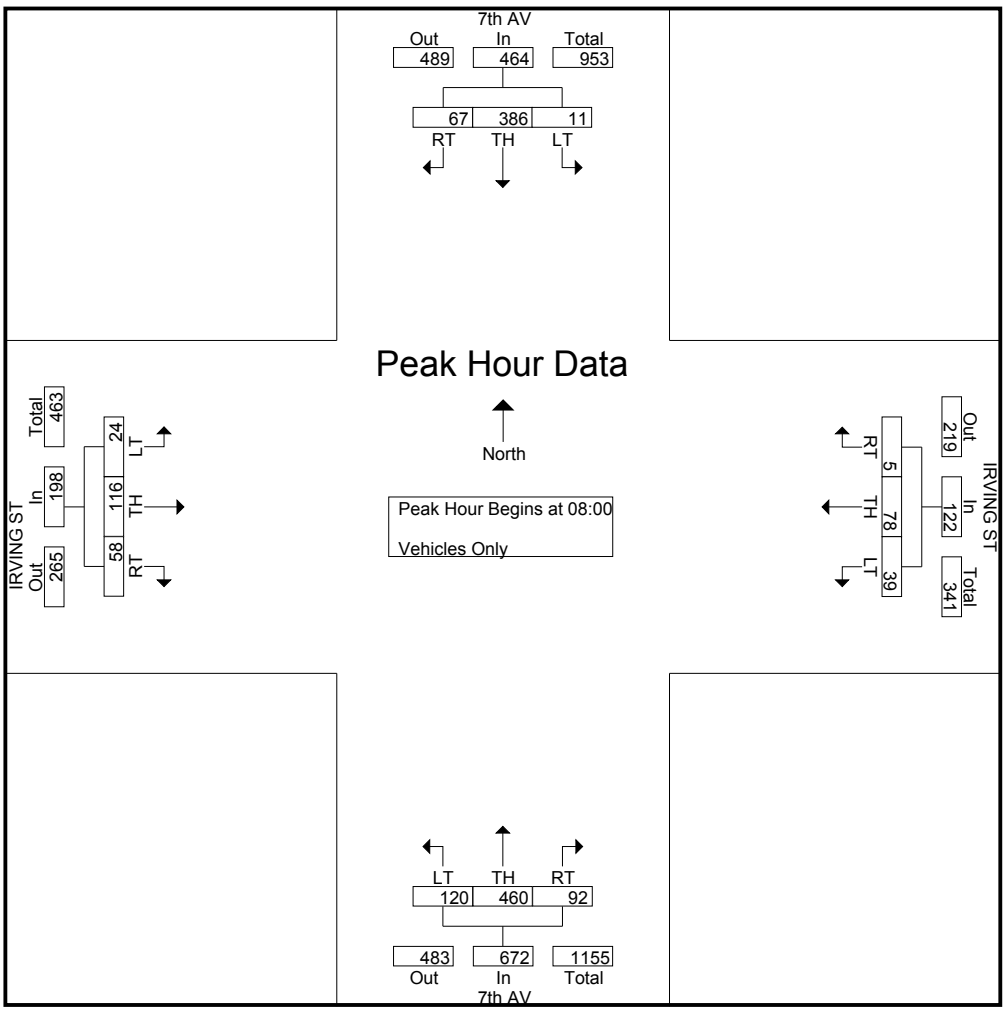
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-irving-a
Site Code : 14
Start Date : 5/15/2013
Page No : 1

Groups Printed- Vehicles Only

	7th AV Southbound				IRVING ST Westbound				7th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	7	58	0	65	1	11	5	17	23	64	18	105	17	16	6	39	226
07:15	8	75	1	84	2	15	6	23	24	95	19	138	12	25	4	41	286
07:30	6	75	2	83	1	9	13	23	21	93	26	140	7	26	5	38	284
07:45	13	68	6	87	1	22	7	30	41	108	31	180	10	52	9	71	368
Total	34	276	9	319	5	57	31	93	109	360	94	563	46	119	24	189	1164
08:00	14	98	3	115	1	14	7	22	21	101	26	148	16	35	6	57	342
08:15	12	83	1	96	2	18	6	26	23	114	29	166	12	35	9	56	344
08:30	22	94	4	120	1	20	14	35	21	131	35	187	15	27	6	48	390
08:45	19	111	3	133	1	26	12	39	27	114	30	171	15	19	3	37	380
Total	67	386	11	464	5	78	39	122	92	460	120	672	58	116	24	198	1456
Grand Total	101	662	20	783	10	135	70	215	201	820	214	1235	104	235	48	387	2620
Apprch %	12.9	84.5	2.6		4.7	62.8	32.6		16.3	66.4	17.3		26.9	60.7	12.4		
Total %	3.9	25.3	0.8	29.9	0.4	5.2	2.7	8.2	7.7	31.3	8.2	47.1	4	9	1.8	14.8	

	7th AV Southbound				IRVING ST Westbound				7th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	14	98	3	115	1	14	7	22	21	101	26	148	**16**	**35**	6	**57**	342
08:15	12	83	1	96	**2**	18	6	26	23	114	29	166	12	35	**9**	56	344
08:30	**22**	94	**4**	120	1	20	**14**	35	21	**131**	**35**	**187**	15	27	6	48	**390**
08:45	19	**111**	3	**133**	1	**26**	12	**39**	**27**	114	30	171	15	19	3	37	380
Total Volume	67	386	11	464	5	78	39	122	92	460	120	672	58	116	24	198	1456
% App. Total	14.4	83.2	2.4		4.1	63.9	32		13.7	68.5	17.9		29.3	58.6	12.1		
PHF	.761	.869	.688	.872	.625	.750	.696	.782	.852	.878	.857	.898	.906	.829	.667	.868	.933



MARKS TRAFFIC DATA

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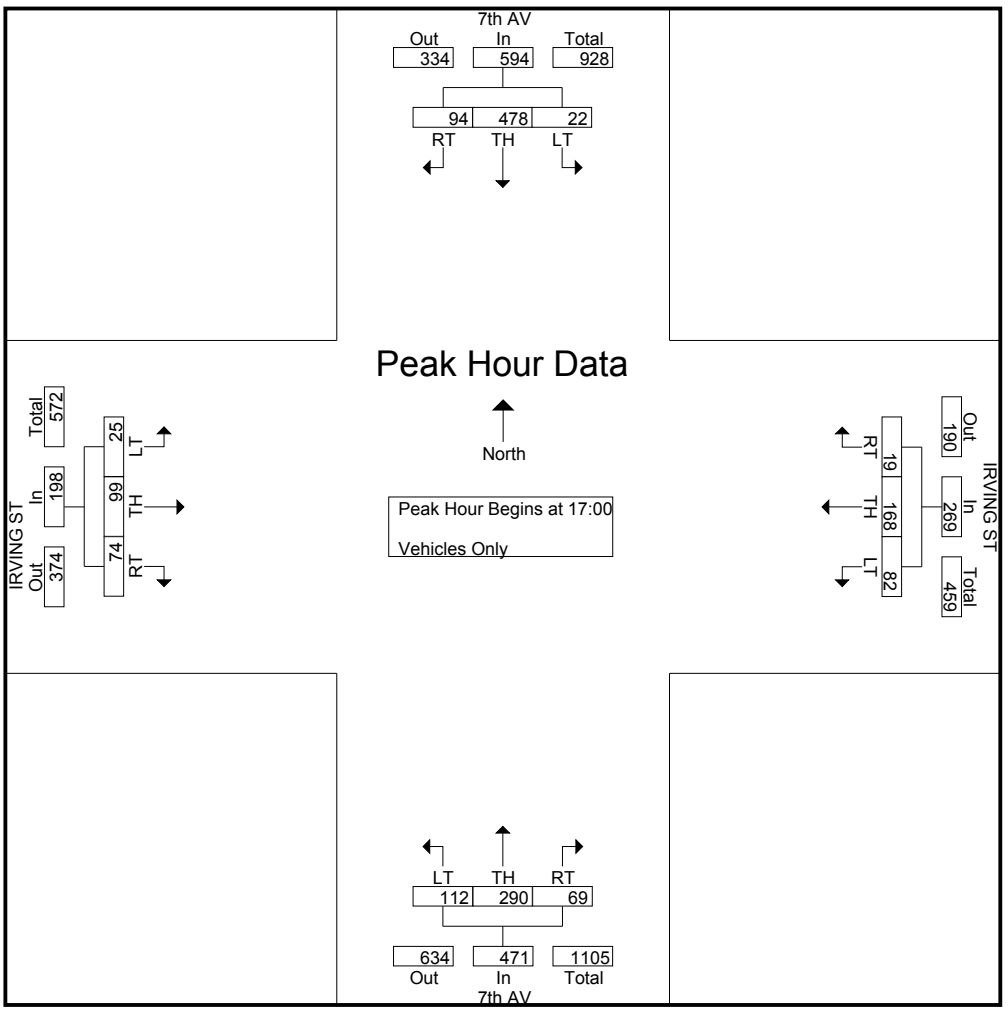
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-irving-p
Site Code : 14
Start Date : 5/15/2013
Page No : 1

Groups Printed- Vehicles Only

	7th AV Southbound				IRVING ST Westbound				7th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	14	121	2	137	1	28	20	49	14	72	27	113	16	22	8	46	345
16:15	23	116	8	147	6	35	23	64	19	65	25	109	11	23	2	36	356
16:30	23	127	7	157	6	33	11	50	16	77	18	111	17	29	4	50	368
16:45	19	114	6	139	4	28	13	45	14	62	32	108	15	29	7	51	343
Total	79	478	23	580	17	124	67	208	63	276	102	441	59	103	21	183	1412
17:00	18	132	2	152	5	55	23	83	14	88	28	130	14	22	7	43	408
17:15	27	92	4	123	3	41	22	66	15	66	33	114	19	25	7	51	354
17:30	25	124	6	155	7	37	19	63	17	63	23	103	21	28	6	55	376
17:45	24	130	10	164	4	35	18	57	23	73	28	124	20	24	5	49	394
Total	94	478	22	594	19	168	82	269	69	290	112	471	74	99	25	198	1532
Grand Total	173	956	45	1174	36	292	149	477	132	566	214	912	133	202	46	381	2944
Apprch %	14.7	81.4	3.8		7.5	61.2	31.2		14.5	62.1	23.5		34.9	53	12.1		
Total %	5.9	32.5	1.5	39.9	1.2	9.9	5.1	16.2	4.5	19.2	7.3	31	4.5	6.9	1.6	12.9	

	7th AV Southbound				IRVING ST Westbound				7th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	18	**132**	2	152	5	**55**	**23**	**83**	14	**88**	28	**130**	14	22	**7**	43	**408**
17:15	**27**	92	4	123	3	41	22	66	15	66	**33**	114	19	25	7	51	354
17:30	25	124	6	155	**7**	37	19	63	17	63	23	103	**21**	**28**	6	**55**	376
17:45	24	130	**10**	**164**	4	35	18	57	**23**	73	28	124	20	24	5	49	394
Total Volume	94	478	22	594	19	168	82	269	69	290	112	471	74	99	25	198	1532
% App. Total	15.8	80.5	3.7		7.1	62.5	30.5		14.6	61.6	23.8		37.4	50	12.6		
PHF	.870	.905	.550	.905	.679	.764	.891	.810	.750	.824	.848	.906	.881	.884	.893	.900	.939



MARKS TRAFFIC DATA

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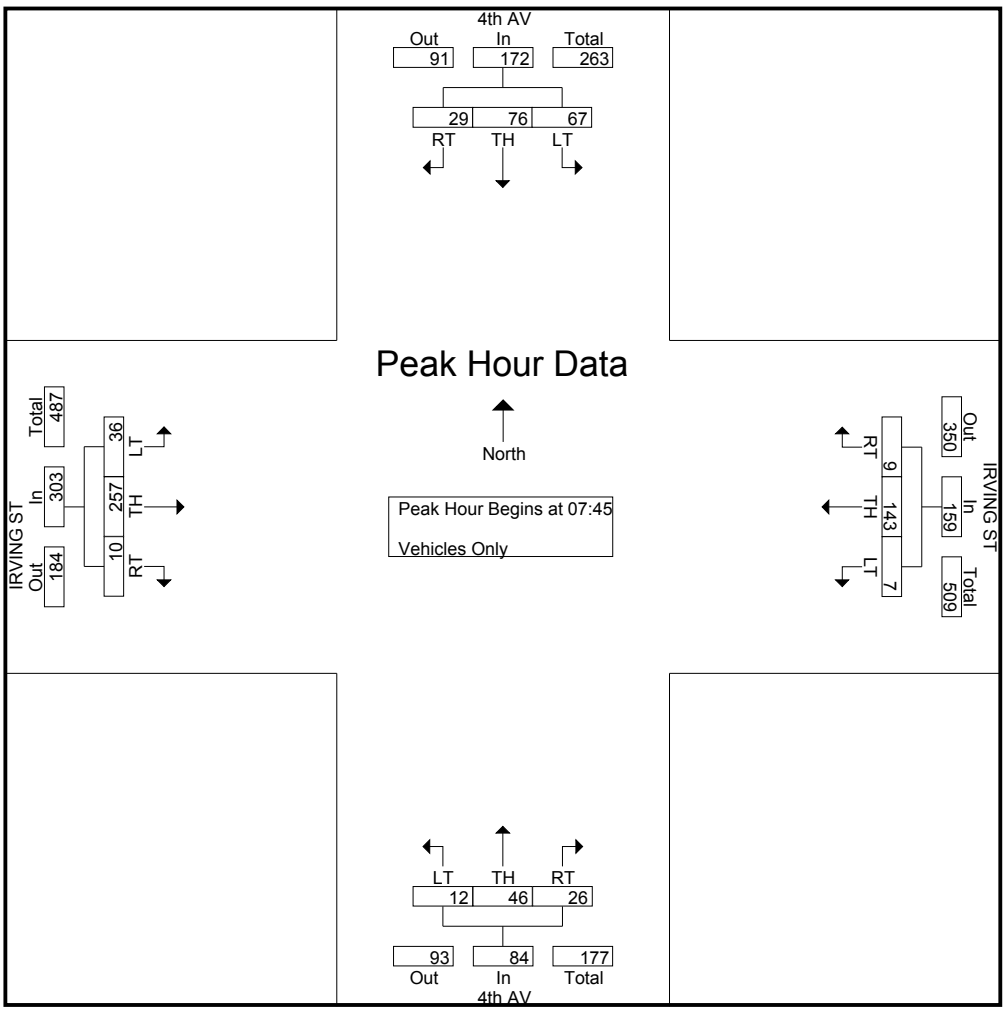
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-irving-a
Site Code : 15
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	4th AV Southbound				IRVING ST Westbound				4th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	3	13	10	26	2	18	1	21	1	8	2	11	0	24	4	28	86
07:15	6	16	9	31	1	15	5	21	0	9	2	11	4	43	3	50	113
07:30	7	9	12	28	4	17	1	22	3	15	3	21	0	43	2	45	116
07:45	6	16	17	39	1	30	2	33	5	13	3	21	2	72	5	79	172
Total	22	54	48	124	8	80	9	97	9	45	10	64	6	182	14	202	487
08:00	9	21	19	49	4	42	0	46	7	13	2	22	4	67	10	81	198
08:15	6	19	16	41	2	27	2	31	5	9	2	16	1	68	10	79	167
08:30	8	20	15	43	2	44	3	49	9	11	5	25	3	50	11	64	181
08:45	9	10	9	28	1	40	4	45	3	3	4	10	1	54	4	59	142
Total	32	70	59	161	9	153	9	171	24	36	13	73	9	239	35	283	688
Grand Total	54	124	107	285	17	233	18	268	33	81	23	137	15	421	49	485	1175
Apprch %	18.9	43.5	37.5		6.3	86.9	6.7		24.1	59.1	16.8		3.1	86.8	10.1		
Total %	4.6	10.6	9.1	24.3	1.4	19.8	1.5	22.8	2.8	6.9	2	11.7	1.3	35.8	4.2	41.3	

	4th AV Southbound				IRVING ST Westbound				4th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	6	16	17	39	1	30	2	33	5	**13**	3	21	2	**72**	5	79	172
08:00	**9**	**21**	**19**	**49**	**4**	42	0	46	7	13	2	22	**4**	67	10	**81**	**198**
08:15	6	19	16	41	2	27	2	31	5	9	2	16	1	68	10	79	167
08:30	8	20	15	43	2	**44**	**3**	**49**	**9**	11	**5**	**25**	3	50	**11**	64	181
Total Volume	29	76	67	172	9	143	7	159	26	46	12	84	10	257	36	303	718
% App. Total	16.9	44.2	39		5.7	89.9	4.4		31	54.8	14.3		3.3	84.8	11.9		
PHF	.806	.905	.882	.878	.563	.813	.583	.811	.722	.885	.600	.840	.625	.892	.818	.935	.907



MARKS TRAFFIC DATA

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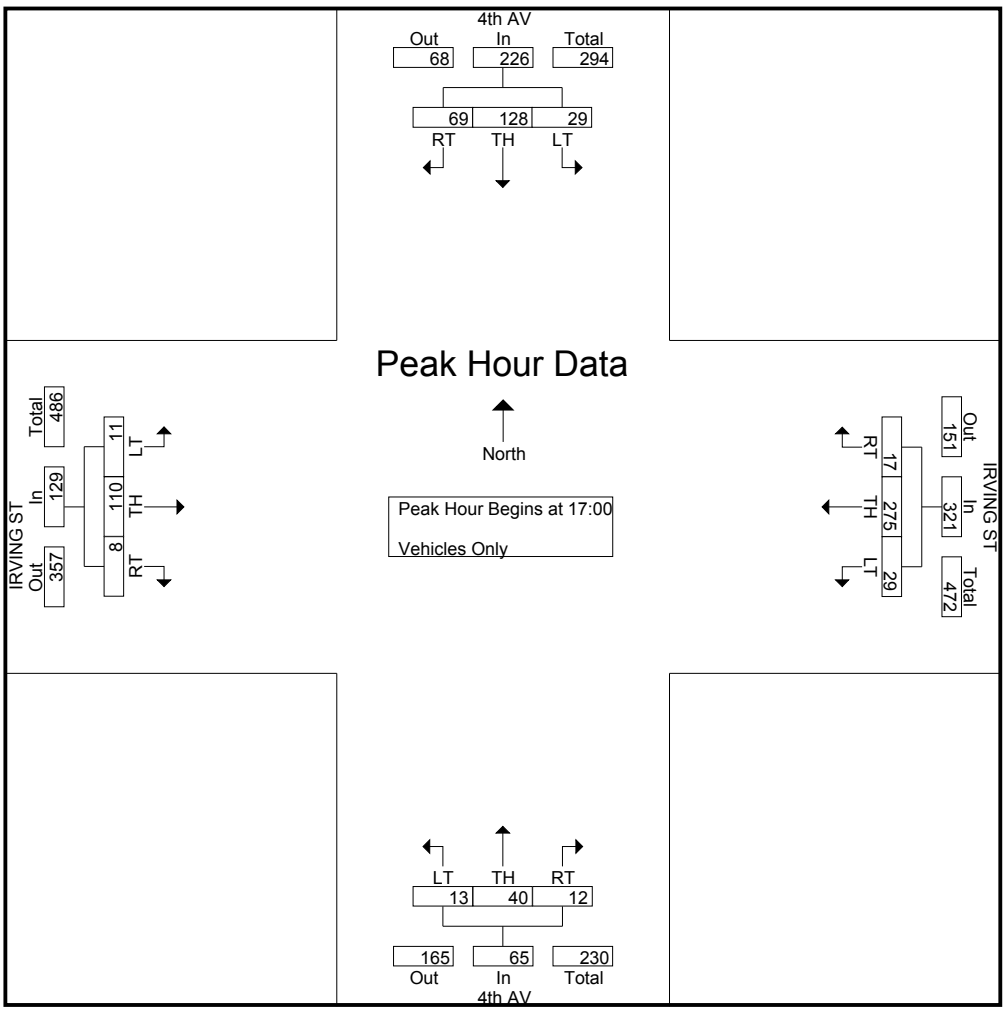
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-irving-p
Site Code : 15
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	4th AV Southbound				IRVING ST Westbound				4th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	18	25	6	49	2	59	4	65	4	8	6	18	3	25	5	33	165
16:15	15	25	7	47	1	51	5	57	3	8	4	15	4	27	3	34	153
16:30	20	27	12	59	2	57	5	64	7	17	2	26	6	20	1	27	176
16:45	12	39	15	66	1	49	5	55	5	9	1	15	2	33	3	38	174
Total	65	116	40	221	6	216	19	241	19	42	13	74	15	105	12	132	668
17:00	11	20	3	34	3	73	5	81	0	10	4	14	2	30	3	35	164
17:15	17	34	11	62	4	74	7	85	5	11	6	22	3	23	3	29	198
17:30	24	37	8	69	5	67	9	81	3	11	2	16	0	27	2	29	195
17:45	17	37	7	61	5	61	8	74	4	8	1	13	3	30	3	36	184
Total	69	128	29	226	17	275	29	321	12	40	13	65	8	110	11	129	741
Grand Total	134	244	69	447	23	491	48	562	31	82	26	139	23	215	23	261	1409
Apprch %	30	54.6	15.4		4.1	87.4	8.5		22.3	59	18.7		8.8	82.4	8.8		
Total %	9.5	17.3	4.9	31.7	1.6	34.8	3.4	39.9	2.2	5.8	1.8	9.9	1.6	15.3	1.6	18.5	

	4th AV Southbound				IRVING ST Westbound				4th AV Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	11	20	3	34	3	73	5	81	0	10	4	14	2	**30**	**3**	35	164
17:15	17	34	**11**	62	4	**74**	7	**85**	**5**	**11**	**6**	**22**	**3**	23	3	29	**198**
17:30	**24**	**37**	8	**69**	**5**	67	**9**	81	3	11	2	16	0	27	2	29	195
17:45	17	37	7	61	5	61	8	74	4	8	1	13	3	30	3	**36**	184
Total Volume	69	128	29	226	17	275	29	321	12	40	13	65	8	110	11	129	741
% App. Total	30.5	56.6	12.8		5.3	85.7	9		18.5	61.5	20		6.2	85.3	8.5		
PHF	.719	.865	.659	.819	.850	.929	.806	.944	.600	.909	.542	.739	.667	.917	.917	.896	.936



MARKS TRAFFIC DATA

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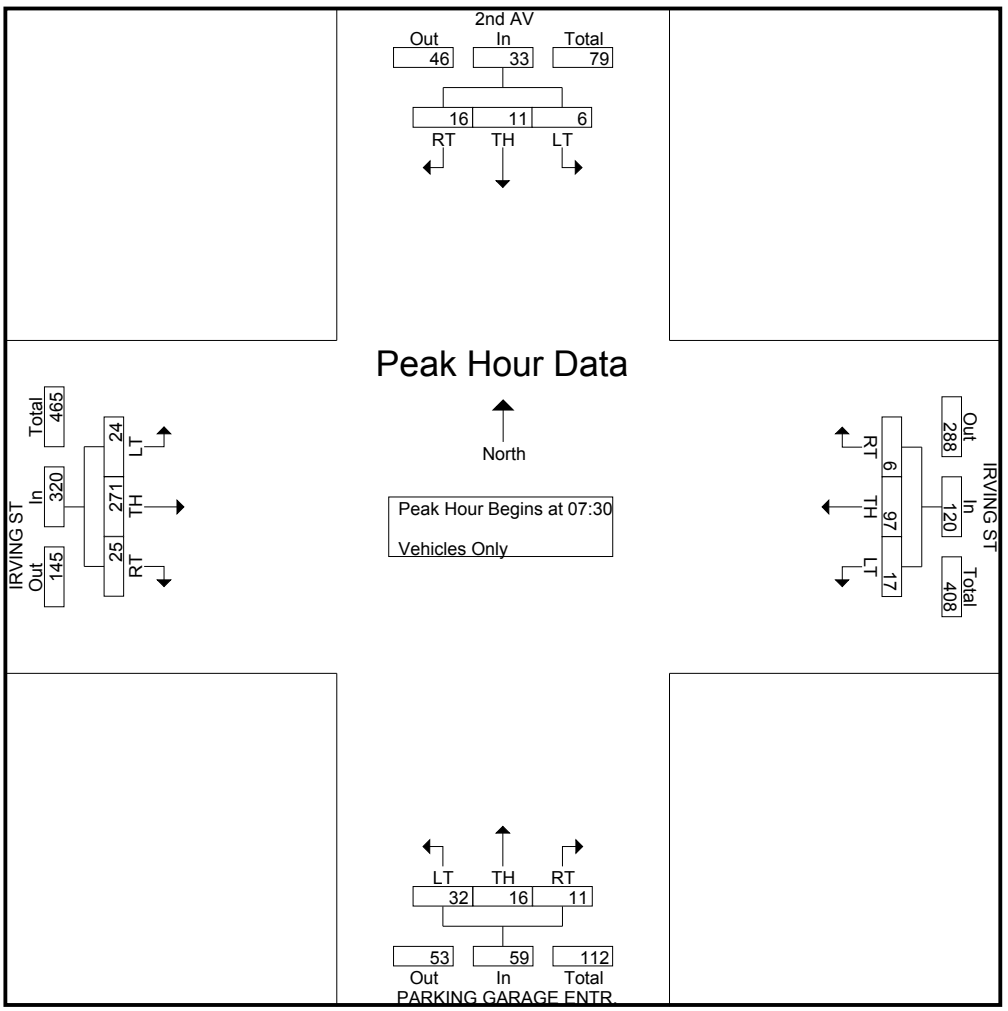
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 2-irving-a
Site Code : 16
Start Date : 5/23/2013
Page No : 1

Groups Printed- Vehicles Only

	2nd AV Southbound				IRVING ST Westbound				PARKING GARAGE ENTR. Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	4	1	3	8	0	16	2	18	0	0	0	0	2	25	0	27	53
07:15	2	1	0	3	1	16	2	19	1	0	1	2	4	47	2	53	77
07:30	2	3	0	5	0	16	1	17	3	4	12	19	5	57	7	69	110
07:45	5	3	2	10	2	28	4	34	6	8	10	24	5	62	8	75	143
Total	13	8	5	26	3	76	9	88	10	12	23	45	16	191	17	224	383
08:00	5	3	1	9	0	27	3	30	0	2	5	7	10	80	3	93	139
08:15	4	2	3	9	4	26	9	39	2	2	5	9	5	72	6	83	140
08:30	3	1	2	6	3	20	5	28	1	2	2	5	5	56	3	64	103
08:45	4	4	0	8	0	23	3	26	1	0	1	2	5	41	4	50	86
Total	16	10	6	32	7	96	20	123	4	6	13	23	25	249	16	290	468
Grand Total	29	18	11	58	10	172	29	211	14	18	36	68	41	440	33	514	851
Apprch %	50	31	19		4.7	81.5	13.7		20.6	26.5	52.9		8	85.6	6.4		
Total %	3.4	2.1	1.3	6.8	1.2	20.2	3.4	24.8	1.6	2.1	4.2	8	4.8	51.7	3.9	60.4	

	2nd AV Southbound				IRVING ST Westbound				PARKING GARAGE ENTR. Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	2	**3**	0	5	0	16	1	17	3	4	**12**	19	5	57	7	69	110
07:45	**5**	3	2	**10**	2	**28**	4	34	**6**	**8**	10	**24**	5	62	**8**	75	**143**
08:00	5	3	1	9	0	27	3	30	0	2	5	7	**10**	**80**	3	**93**	139
08:15	4	2	**3**	9	**4**	26	**9**	**39**	2	2	5	9	5	72	6	83	140
Total Volume	16	11	6	33	6	97	17	120	11	16	32	59	25	271	24	320	532
% App. Total	48.5	33.3	18.2		5	80.8	14.2		18.6	27.1	54.2		7.8	84.7	7.5		
PHF	.800	.917	.500	.825	.375	.866	.472	.769	.458	.500	.667	.615	.625	.847	.750	.860	.930



MARKS TRAFFIC DATA
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CITY OF SAN FRANCISCO

File Name : 2-irving-p
Site Code : 1
Start Date : 10/4/2011
Page No : 1

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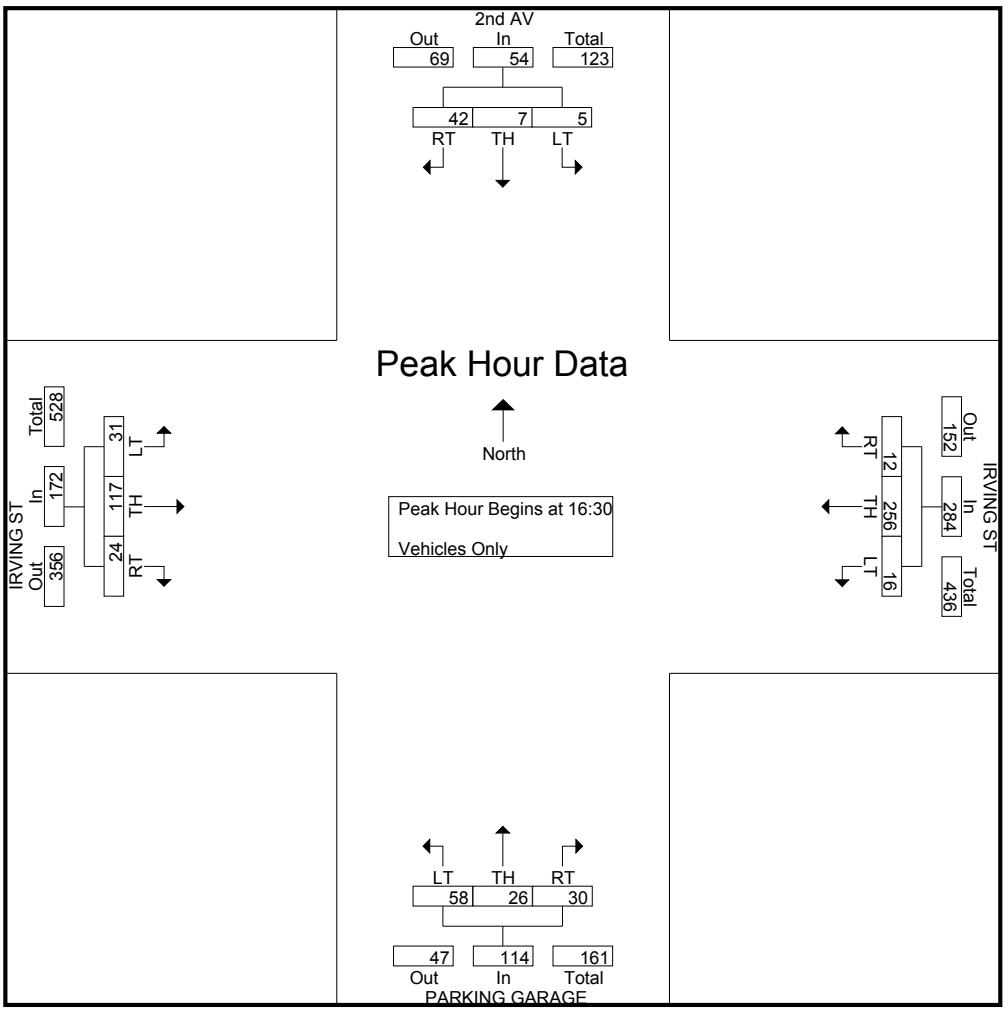
Groups Printed- Vehicles Only

	2nd AV Southbound				IRVING ST Westbound				PARKING GARAGE Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	4	1	1	6	8	38	3	49	11	5	20	36	3	31	14	48	139
16:15	4	1	2	7	5	47	2	54	5	4	9	18	5	28	8	41	120
16:30	9	0	1	10	4	48	2	54	7	10	15	32	7	32	12	51	147
16:45	12	2	1	15	2	56	7	65	7	4	11	22	10	24	3	37	139
Total	29	4	5	38	19	189	14	222	30	23	55	108	25	115	37	177	545
17:00	11	5	2	18	4	71	5	80	10	8	20	38	5	31	8	44	180
17:15	10	0	1	11	2	81	2	85	6	4	12	22	2	30	8	40	158
17:30	9	0	1	10	0	71	1	72	5	5	4	14	1	28	9	38	134
17:45	8	0	1	9	1	54	5	60	5	5	13	23	3	28	6	37	129
Total	38	5	5	48	7	277	13	297	26	22	49	97	11	117	31	159	601
Grand Total	67	9	10	86	26	466	27	519	56	45	104	205	36	232	68	336	1146
Apprch %	77.9	10.5	11.6		5	89.8	5.2		27.3	22	50.7		10.7	69	20.2		
Total %	5.8	0.8	0.9	7.5	2.3	40.7	2.4	45.3	4.9	3.9	9.1	17.9	3.1	20.2	5.9	29.3	

	2nd AV Southbound				IRVING ST Westbound				PARKING GARAGE Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	9	0	1	10	**4**	48	2	54	7	**10**	15	32	7	**32**	**12**	**51**	147
16:45	**12**	2	1	15	2	56	**7**	65	7	4	11	22	**10**	24	3	37	139
17:00	11	**5**	**2**	**18**	4	71	5	80	**10**	8	**20**	**38**	5	31	8	44	**180**
17:15	10	0	1	11	2	**81**	2	**85**	6	4	12	22	2	30	8	40	158
Total Volume	42	7	5	54	12	256	16	284	30	26	58	114	24	117	31	172	624
% App. Total	77.8	13	9.3		4.2	90.1	5.6		26.3	22.8	50.9		14	68	18		
PHF	.875	.350	.625	.750	.750	.790	.571	.835	.750	.650	.725	.750	.600	.914	.646	.843	.867



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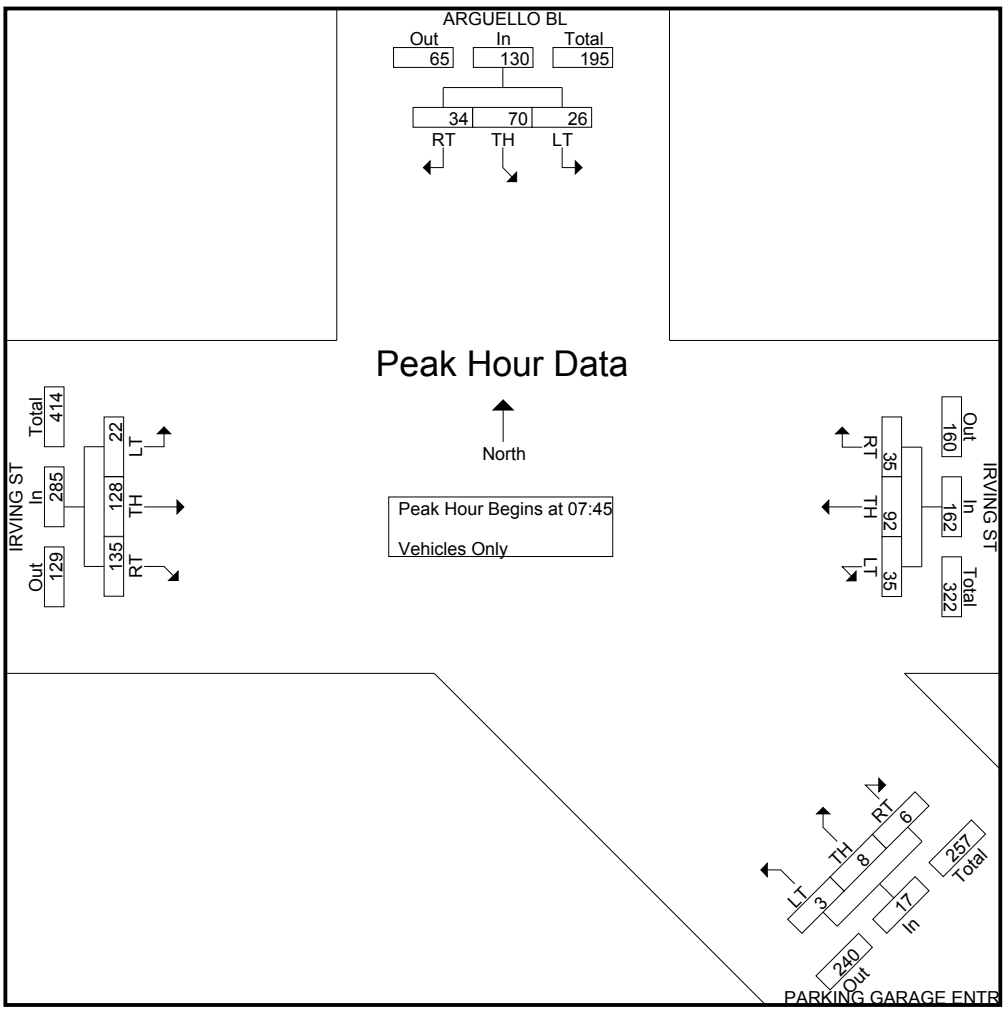
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : arguello-irving-a
Site Code : 17
Start Date : 5/23/2013
Page No : 1

Groups Printed- Vehicles Only

	ARGUELLO BL Southbound				IRVING ST Westbound				PARKING GARAGE ENTR. Northwestbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	4	10	4	18	8	16	15	39	1	3	0	4	17	7	4	28	89
07:15	6	12	3	21	6	12	5	23	0	3	1	4	27	18	3	48	96
07:30	4	12	15	31	6	12	8	26	3	0	0	3	23	35	3	61	121
07:45	10	15	7	32	14	26	9	49	1	1	0	2	43	21	6	70	153
Total	24	49	29	102	34	66	37	137	5	7	1	13	110	81	16	207	459
08:00	7	19	4	30	6	21	11	38	0	0	1	1	35	41	3	79	148
08:15	11	19	7	37	8	25	7	40	2	4	1	7	33	41	4	78	162
08:30	6	17	8	31	7	20	8	35	3	3	1	7	24	25	9	58	131
08:45	8	15	7	30	8	19	12	39	0	0	1	1	14	24	4	42	112
Total	32	70	26	128	29	85	38	152	5	7	4	16	106	131	20	257	553
Grand Total	56	119	55	230	63	151	75	289	10	14	5	29	216	212	36	464	1012
Apprch %	24.3	51.7	23.9		21.8	52.2	26		34.5	48.3	17.2		46.6	45.7	7.8		
Total %	5.5	11.8	5.4	22.7	6.2	14.9	7.4	28.6	1	1.4	0.5	2.9	21.3	20.9	3.6	45.8	

	ARGUELLO BL Southbound				IRVING ST Westbound				PARKING GARAGE ENTR. Northwestbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	10	15	7	32	**14**	**26**	9	**49**	1	1	0	2	**43**	21	6	70	153
08:00	7	**19**	4	30	6	21	**11**	38	0	0	**1**	1	35	**41**	3	**79**	148
08:15	**11**	19	7	**37**	8	25	7	40	2	**4**	1	**7**	33	41	4	78	**162**
08:30	6	17	**8**	31	7	20	8	35	**3**	3	1	7	24	25	**9**	58	131
Total Volume	34	70	26	130	35	92	35	162	6	8	3	17	135	128	22	285	594
% App. Total	26.2	53.8	20		21.6	56.8	21.6		35.3	47.1	17.6		47.4	44.9	7.7		
PHF	.773	.921	.813	.878	.625	.885	.795	.827	.500	.500	.750	.607	.785	.780	.611	.902	.917



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CITY OF SAN FRANCISCO

File Name : arguello-carl-p
Site Code : 2
Start Date : 10/4/2011
Page No : 1

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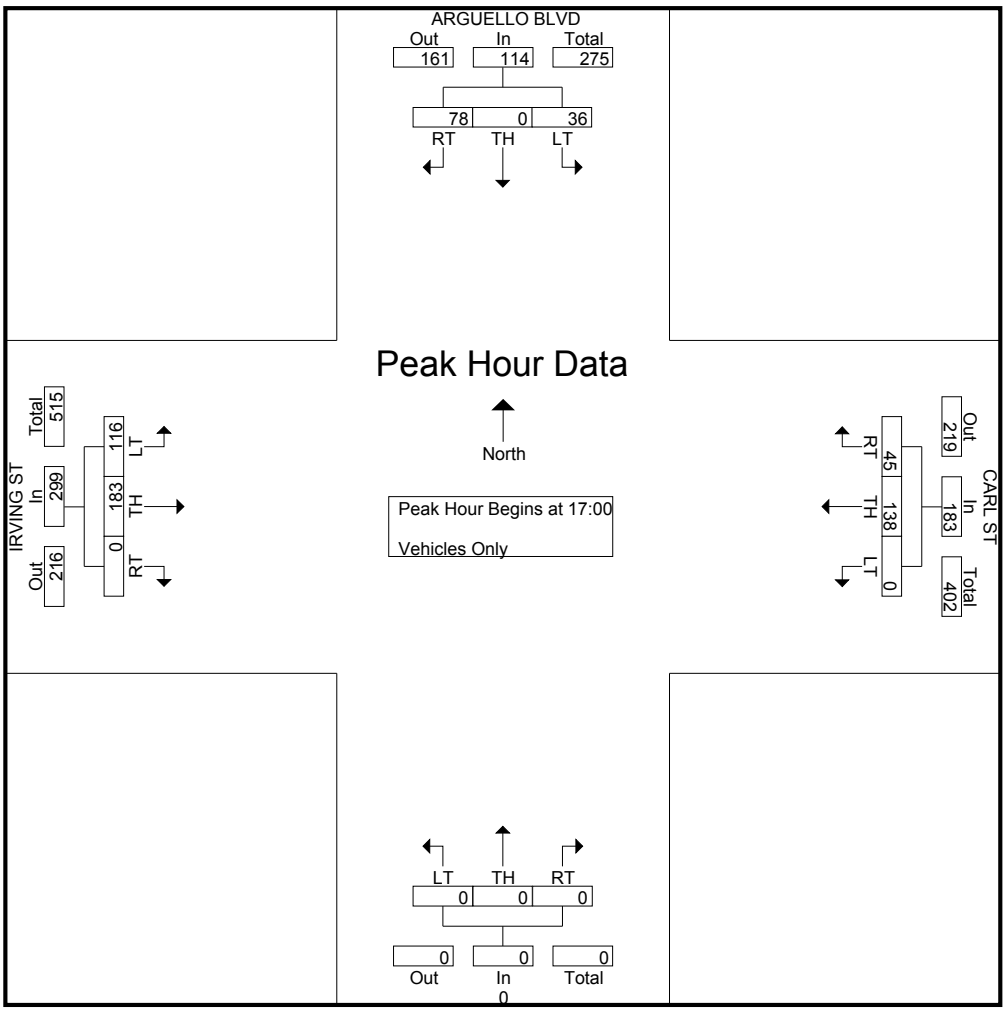
Groups Printed- Vehicles Only

	ARGUELLO BLVD Southbound				CARL ST Westbound				0 Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	21	0	9	30	12	22	0	34	0	0	0	0	0	44	16	60	124
16:15	17	0	3	20	11	24	0	35	0	0	0	0	0	41	17	58	113
16:30	14	0	5	19	14	24	0	38	0	0	0	0	0	40	16	56	113
16:45	27	0	10	37	12	19	0	31	0	0	0	0	0	31	15	46	114
Total	79	0	27	106	49	89	0	138	0	0	0	0	0	156	64	220	464
17:00	23	0	7	30	14	44	0	58	0	0	0	0	0	54	35	89	177
17:15	24	0	12	36	10	29	0	39	0	0	0	0	0	45	28	73	148
17:30	15	0	8	23	8	34	0	42	0	0	0	0	0	40	31	71	136
17:45	16	0	9	25	13	31	0	44	0	0	0	0	0	44	22	66	135
Total	78	0	36	114	45	138	0	183	0	0	0	0	0	183	116	299	596
Grand Total	157	0	63	220	94	227	0	321	0	0	0	0	0	339	180	519	1060
Apprch %	71.4	0	28.6		29.3	70.7	0		0	0	0		0	65.3	34.7		
Total %	14.8	0	5.9	20.8	8.9	21.4	0	30.3	0	0	0	0	0	32	17	49	

	ARGUELLO BLVD Southbound				CARL ST Westbound				0 Northbound				IRVING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	23	0	7	30	**14**	**44**	0	**58**	0	0	0	0	0	**54**	**35**	**89**	**177**
17:15	**24**	0	**12**	**36**	10	29	0	39	0	0	0	0	0	45	28	73	148
17:30	15	0	8	23	8	34	0	42	0	0	0	0	0	40	31	71	136
17:45	16	0	9	25	13	31	0	44	0	0	0	0	0	44	22	66	135
Total Volume	78	0	36	114	45	138	0	183	0	0	0	0	0	183	116	299	596
% App. Total	68.4	0	31.6		24.6	75.4	0		0	0	0		0	61.2	38.8		
PHF	.813	.000	.750	.792	.804	.784	.000	.789	.000	.000	.000	.000	.000	.847	.829	.840	.842



MARKS TRAFFIC DATA

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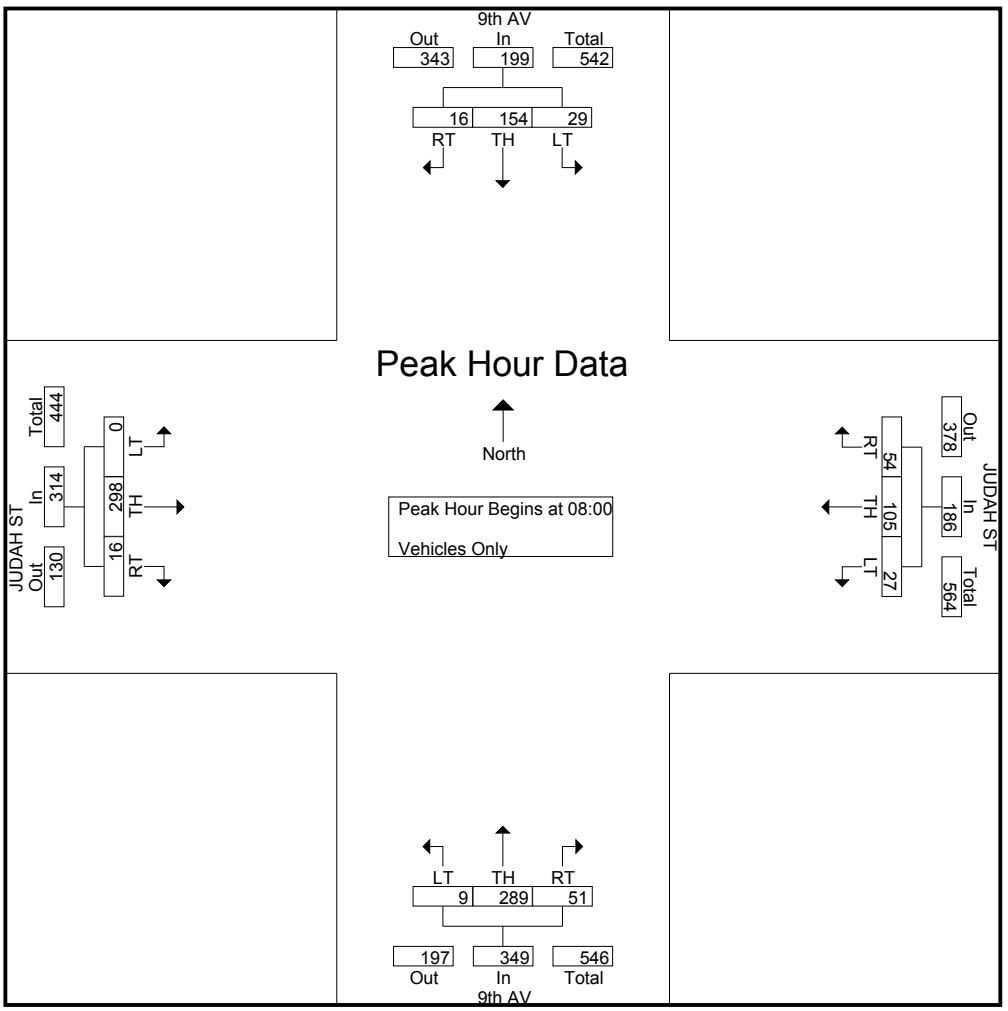
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 9-judah-a
Site Code : 4
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	9th AV Southbound				JUDAH ST Westbound				9th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	9	19	8	36	9	9	6	24	10	32	0	42	1	29	0	30	132
07:15	9	22	8	39	7	25	5	37	8	50	1	59	2	45	0	47	182
07:30	2	30	4	36	20	22	8	50	14	64	0	78	2	62	0	64	228
07:45	4	31	7	42	17	31	7	55	10	57	2	69	2	69	0	71	237
Total	24	102	27	153	53	87	26	166	42	203	3	248	7	205	0	212	779
08:00	5	31	5	41	15	36	10	61	14	68	2	84	3	67	0	70	256
08:15	5	37	8	50	15	21	5	41	12	82	4	98	5	80	0	85	274
08:30	5	47	11	63	10	17	8	35	8	72	2	82	4	80	0	84	264
08:45	1	39	5	45	14	31	4	49	17	67	1	85	4	71	0	75	254
Total	16	154	29	199	54	105	27	186	51	289	9	349	16	298	0	314	1048
Grand Total	40	256	56	352	107	192	53	352	93	492	12	597	23	503	0	526	1827
Apprch %	11.4	72.7	15.9		30.4	54.5	15.1		15.6	82.4	2		4.4	95.6	0		
Total %	2.2	14	3.1	19.3	5.9	10.5	2.9	19.3	5.1	26.9	0.7	32.7	1.3	27.5	0	28.8	

	9th AV Southbound				JUDAH ST Westbound				9th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	**5**	31	5	41	**15**	**36**	**10**	**61**	14	68	2	84	3	67	0	70	256
08:15	5	37	8	50	15	21	5	41	12	**82**	**4**	**98**	**5**	**80**	0	**85**	**274**
08:30	5	**47**	**11**	**63**	10	17	8	35	8	72	2	82	4	80	0	84	264
08:45	1	39	5	45	14	31	4	49	**17**	67	1	85	4	71	0	75	254
Total Volume	16	154	29	199	54	105	27	186	51	289	9	349	16	298	0	314	1048
% App. Total	8	77.4	14.6		29	56.5	14.5		14.6	82.8	2.6		5.1	94.9	0		
PHF	.800	.819	.659	.790	.900	.729	.675	.762	.750	.881	.563	.890	.800	.931	.000	.924	.956



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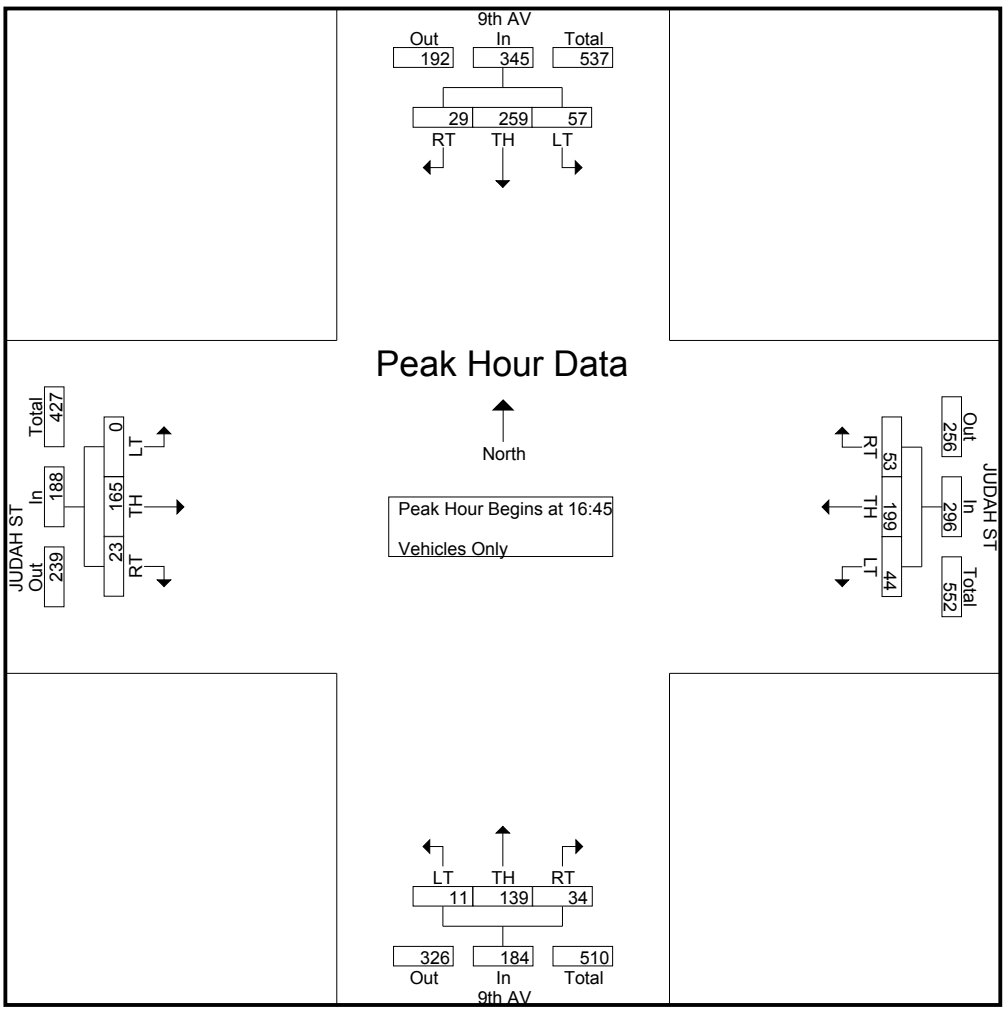
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 9-judah-p
Site Code : 4
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	9th AV Southbound				JUDAH ST Westbound				9th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	9	54	11	74	10	45	11	66	9	49	2	60	2	26	3	31	231
16:15	8	74	10	92	15	55	1	71	8	46	2	56	1	38	1	40	259
16:30	10	52	7	69	11	40	5	56	14	33	2	49	5	48	0	53	227
16:45	8	62	12	82	12	41	13	66	12	35	3	50	8	34	0	42	240
Total	35	242	40	317	48	181	30	259	43	163	9	215	16	146	4	166	957
17:00	7	56	11	74	13	52	6	71	7	34	5	46	4	45	0	49	240
17:15	11	57	20	88	12	53	10	75	10	28	3	41	6	40	0	46	250
17:30	3	84	14	101	16	53	15	84	5	42	0	47	5	46	0	51	283
17:45	13	53	8	74	12	42	7	61	6	42	0	48	3	35	0	38	221
Total	34	250	53	337	53	200	38	291	28	146	8	182	18	166	0	184	994
Grand Total	69	492	93	654	101	381	68	550	71	309	17	397	34	312	4	350	1951
Apprch %	10.6	75.2	14.2		18.4	69.3	12.4		17.9	77.8	4.3		9.7	89.1	1.1		
Total %	3.5	25.2	4.8	33.5	5.2	19.5	3.5	28.2	3.6	15.8	0.9	20.3	1.7	16	0.2	17.9	

	9th AV Southbound				JUDAH ST Westbound				9th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	8	62	12	82	12	41	13	66	**12**	35	3	**50**	**8**	34	0	42	240
17:00	7	56	11	74	13	52	6	71	7	34	**5**	46	4	45	0	49	240
17:15	**11**	57	**20**	88	12	**53**	10	75	10	28	3	41	6	40	0	46	250
17:30	3	**84**	14	**101**	**16**	53	**15**	**84**	5	**42**	0	47	5	**46**	0	**51**	**283**
Total Volume	29	259	57	345	53	199	44	296	34	139	11	184	23	165	0	188	1013
% App. Total	8.4	75.1	16.5		17.9	67.2	14.9		18.5	75.5	6		12.2	87.8	0		
PHF	.659	.771	.713	.854	.828	.939	.733	.881	.708	.827	.550	.920	.719	.897	.000	.922	.895



MARKS TRAFFIC DATA

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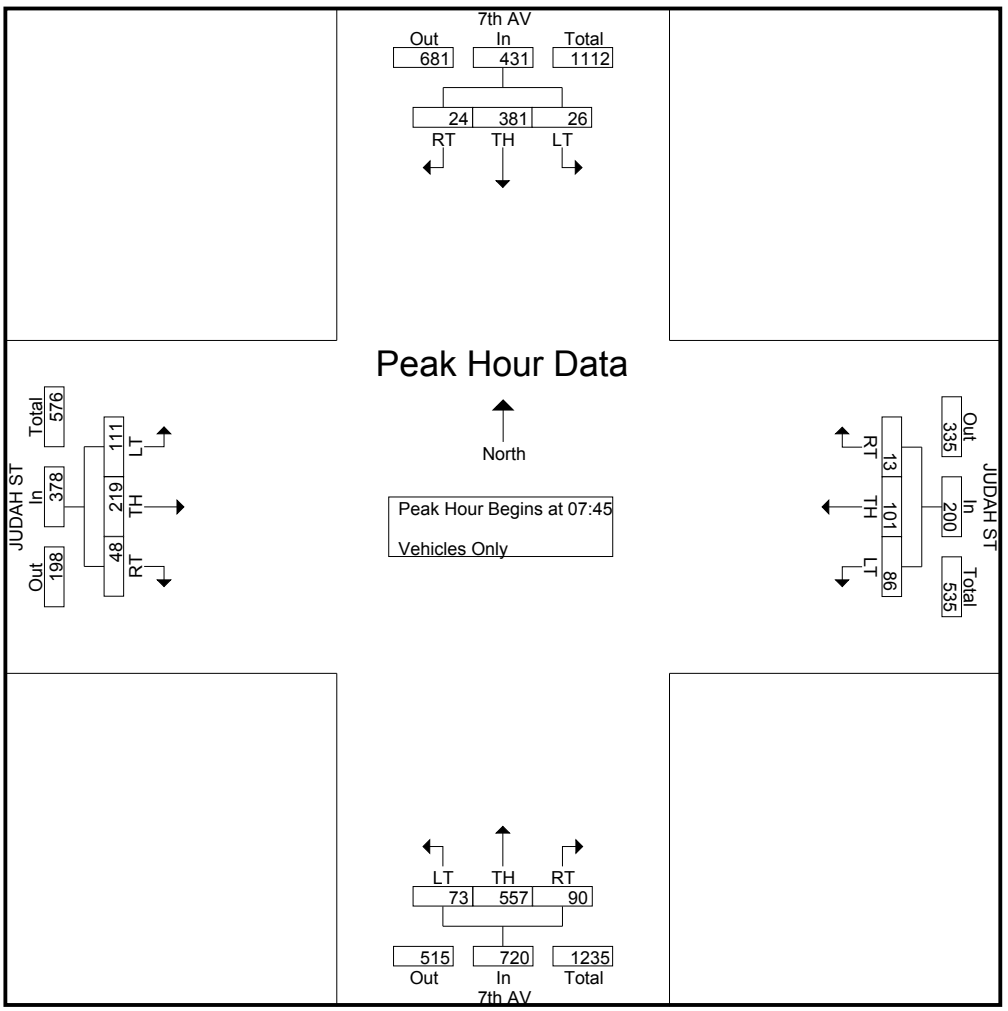
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-judah-a
Site Code : 5
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	7th AV Southbound				JUDAH ST Westbound				7th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	64	5	69	0	10	21	31	16	90	12	118	5	17	3	25	243
07:15	1	80	4	85	5	15	22	42	9	145	9	163	13	39	8	60	350
07:30	6	88	7	101	5	33	38	76	14	127	13	154	16	42	21	79	410
07:45	5	90	6	101	4	31	25	60	22	146	16	184	11	63	28	102	447
Total	12	322	22	356	14	89	106	209	61	508	50	619	45	161	60	266	1450
08:00	5	105	4	114	4	29	25	58	21	142	23	186	11	41	33	85	443
08:15	4	90	6	100	1	19	25	45	20	127	15	162	11	65	23	99	406
08:30	10	96	10	116	4	22	11	37	27	142	19	188	15	50	27	92	433
08:45	7	95	5	107	5	18	15	38	36	130	15	181	14	52	21	87	413
Total	26	386	25	437	14	88	76	178	104	541	72	717	51	208	104	363	1695
Grand Total	38	708	47	793	28	177	182	387	165	1049	122	1336	96	369	164	629	3145
Apprch %	4.8	89.3	5.9		7.2	45.7	47		12.4	78.5	9.1		15.3	58.7	26.1		
Total %	1.2	22.5	1.5	25.2	0.9	5.6	5.8	12.3	5.2	33.4	3.9	42.5	3.1	11.7	5.2	20	

	7th AV Southbound				JUDAH ST Westbound				7th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	5	90	6	101	**4**	**31**	**25**	**60**	22	**146**	16	184	11	63	28	**102**	**447**
08:00	5	**105**	4	114	4	29	25	58	21	142	**23**	186	11	41	**33**	85	443
08:15	4	90	6	100	1	19	25	45	20	127	15	162	11	**65**	23	99	406
08:30	**10**	96	**10**	**116**	4	22	11	37	**27**	142	19	**188**	**15**	50	27	92	433
Total Volume	24	381	26	431	13	101	86	200	90	557	73	720	48	219	111	378	1729
% App. Total	5.6	88.4	6		6.5	50.5	43		12.5	77.4	10.1		12.7	57.9	29.4		
PHF	.600	.907	.650	.929	.813	.815	.860	.833	.833	.954	.793	.957	.800	.842	.841	.926	.967



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CITY OF SAN FRANCISCO

File Name : 7-judah-p
Site Code : 3
Start Date : 10/5/2011
Page No : 1

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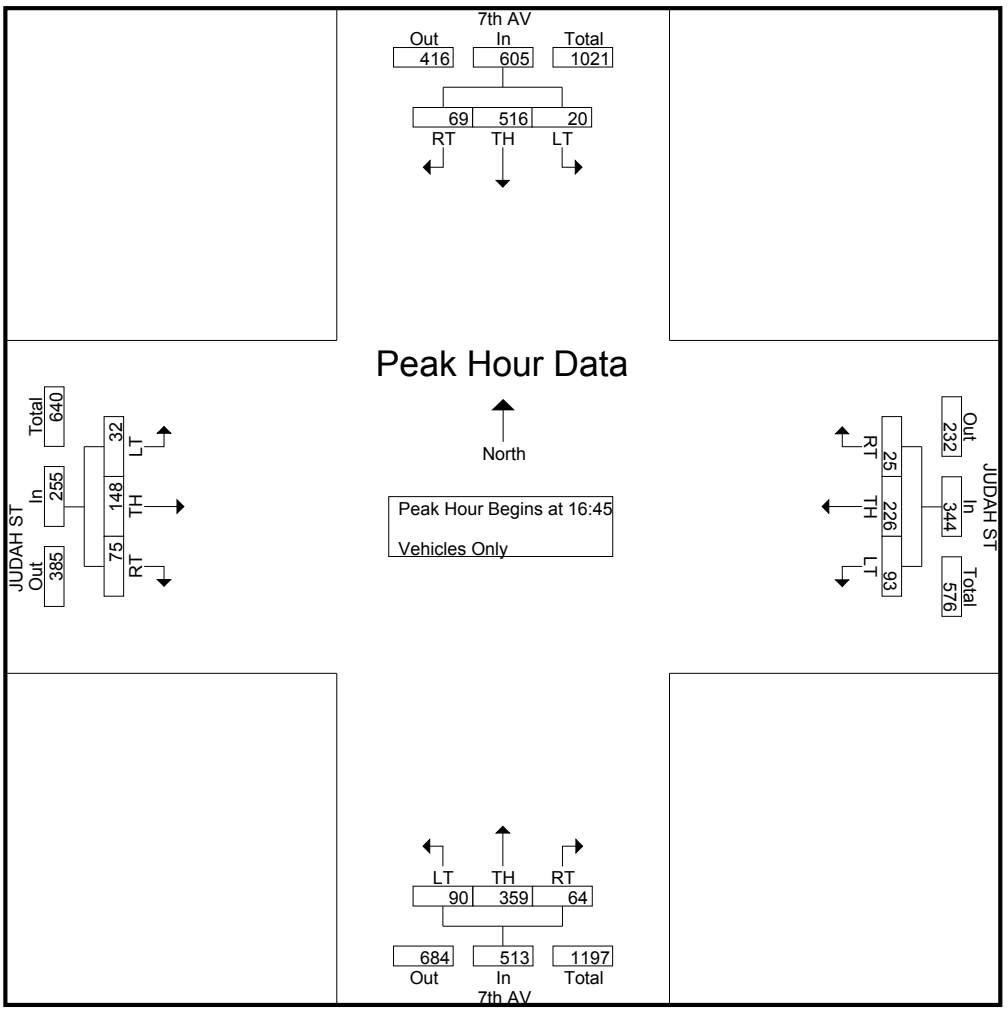
Groups Printed- Vehicles Only

	7th AV Southbound				JUDAH ST Westbound				7th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	7	135	7	149	3	30	32	65	19	89	24	132	12	38	5	55	401
16:15	9	115	12	136	1	34	20	55	17	88	18	123	15	38	7	60	374
16:30	9	113	8	130	4	47	27	78	14	97	11	122	15	45	8	68	398
16:45	17	140	6	163	2	57	16	75	13	95	19	127	23	32	13	68	433
Total	42	503	33	578	10	168	95	273	63	369	72	504	65	153	33	251	1606
17:00	19	120	6	145	7	54	29	90	14	81	24	119	18	36	3	57	411
17:15	15	136	6	157	6	57	29	92	18	93	17	128	14	45	9	68	445
17:30	18	120	2	140	10	58	19	87	19	90	30	139	20	35	7	62	428
17:45	14	131	8	153	7	48	24	79	14	91	22	127	18	46	4	68	427
Total	66	507	22	595	30	217	101	348	65	355	93	513	70	162	23	255	1711
Grand Total	108	1010	55	1173	40	385	196	621	128	724	165	1017	135	315	56	506	3317
Apprch %	9.2	86.1	4.7		6.4	62	31.6		12.6	71.2	16.2		26.7	62.3	11.1		
Total %	3.3	30.4	1.7	35.4	1.2	11.6	5.9	18.7	3.9	21.8	5	30.7	4.1	9.5	1.7	15.3	

	7th AV Southbound				JUDAH ST Westbound				7th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	17	**140**	**6**	**163**	2	57	16	75	13	**95**	19	127	**23**	32	**13**	**68**	433
17:00	**19**	120	6	145	7	54	**29**	90	14	81	24	119	18	36	3	57	411
17:15	15	136	6	157	6	57	29	**92**	18	93	17	128	14	**45**	9	68	**445**
17:30	18	120	2	140	**10**	**58**	19	87	**19**	90	**30**	**139**	20	35	7	62	428
Total Volume	69	516	20	605	25	226	93	344	64	359	90	513	75	148	32	255	1717
% App. Total	11.4	85.3	3.3		7.3	65.7	27		12.5	70	17.5		29.4	58	12.5		
PHF	.908	.921	.833	.928	.625	.974	.802	.935	.842	.945	.750	.923	.815	.822	.615	.938	.965



MARKS TRAFFIC DATA

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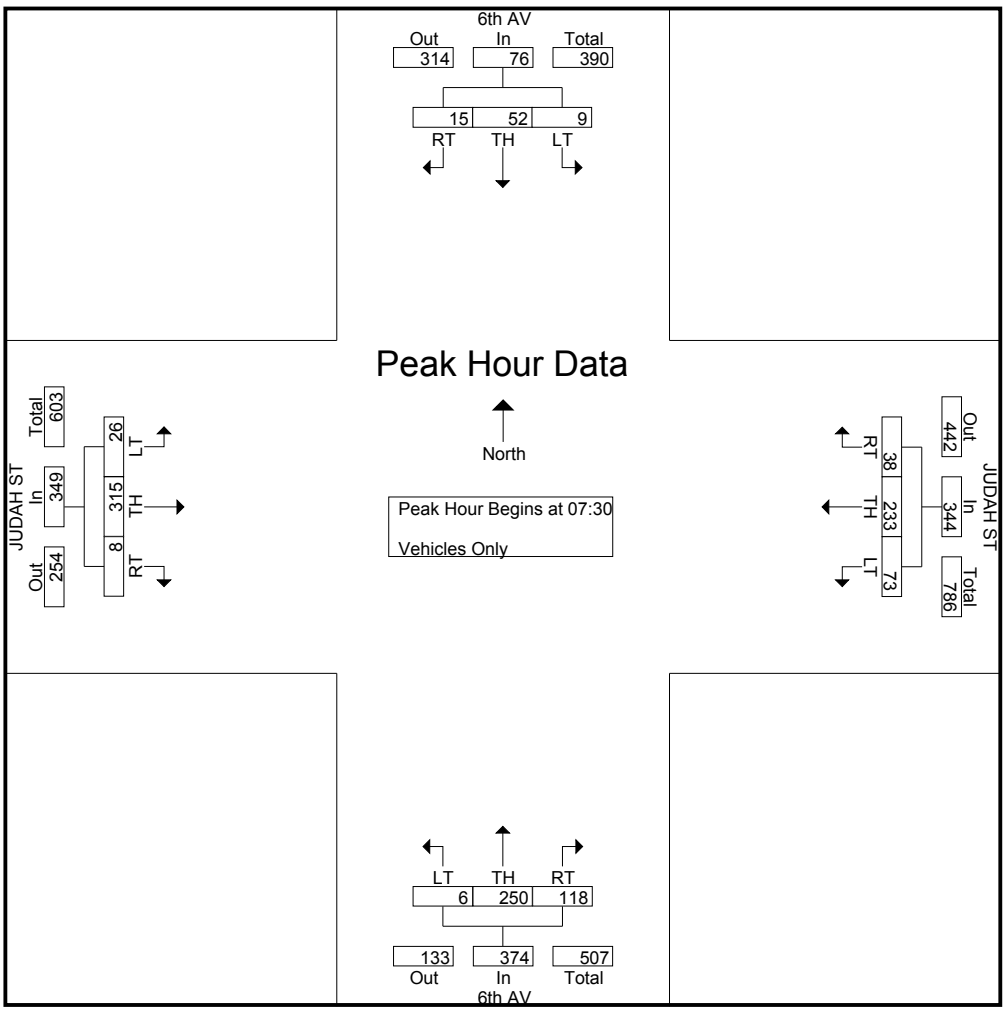
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 6-judah-a
Site Code : 6
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	6th AV Southbound				JUDAH ST Westbound				6th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	3	12	4	19	3	34	8	45	8	30	1	39	1	47	3	51	154
07:15	1	9	2	12	3	45	18	66	21	41	2	64	3	56	7	66	208
07:30	4	11	2	17	11	60	21	92	30	53	1	84	1	73	7	81	274
07:45	4	11	4	19	9	70	23	102	23	62	2	87	4	79	3	86	294
Total	12	43	12	67	26	209	70	305	82	186	6	274	9	255	20	284	930
08:00	3	18	3	24	10	61	17	88	32	56	2	90	2	79	10	91	293
08:15	4	12	0	16	8	42	12	62	33	79	1	113	1	84	6	91	282
08:30	4	17	3	24	4	32	9	45	17	57	3	77	6	79	8	93	239
08:45	6	16	2	24	6	40	10	56	25	59	2	86	1	83	8	92	258
Total	17	63	8	88	28	175	48	251	107	251	8	366	10	325	32	367	1072
Grand Total	29	106	20	155	54	384	118	556	189	437	14	640	19	580	52	651	2002
Apprch %	18.7	68.4	12.9		9.7	69.1	21.2		29.5	68.3	2.2		2.9	89.1	8		
Total %	1.4	5.3	1	7.7	2.7	19.2	5.9	27.8	9.4	21.8	0.7	32	0.9	29	2.6	32.5	

	6th AV Southbound				JUDAH ST Westbound				6th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	**4**	11	2	17	**11**	60	21	92	30	53	1	84	1	73	7	81	274
07:45	4	11	**4**	19	9	**70**	**23**	**102**	23	62	**2**	87	**4**	79	3	86	**294**
08:00	3	**18**	3	**24**	10	61	17	88	32	56	2	90	2	79	**10**	**91**	293
08:15	4	12	0	16	8	42	12	62	**33**	**79**	1	**113**	1	**84**	6	91	282
Total Volume	15	52	9	76	38	233	73	344	118	250	6	374	8	315	26	349	1143
% App. Total	19.7	68.4	11.8		11	67.7	21.2		31.6	66.8	1.6		2.3	90.3	7.4		
PHF	.938	.722	.563	.792	.864	.832	.793	.843	.894	.791	.750	.827	.500	.938	.650	.959	.972



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CITY OF SAN FRANCISCO

File Name : 6-judah-p
Site Code : 4
Start Date : 10/5/2011
Page No : 1

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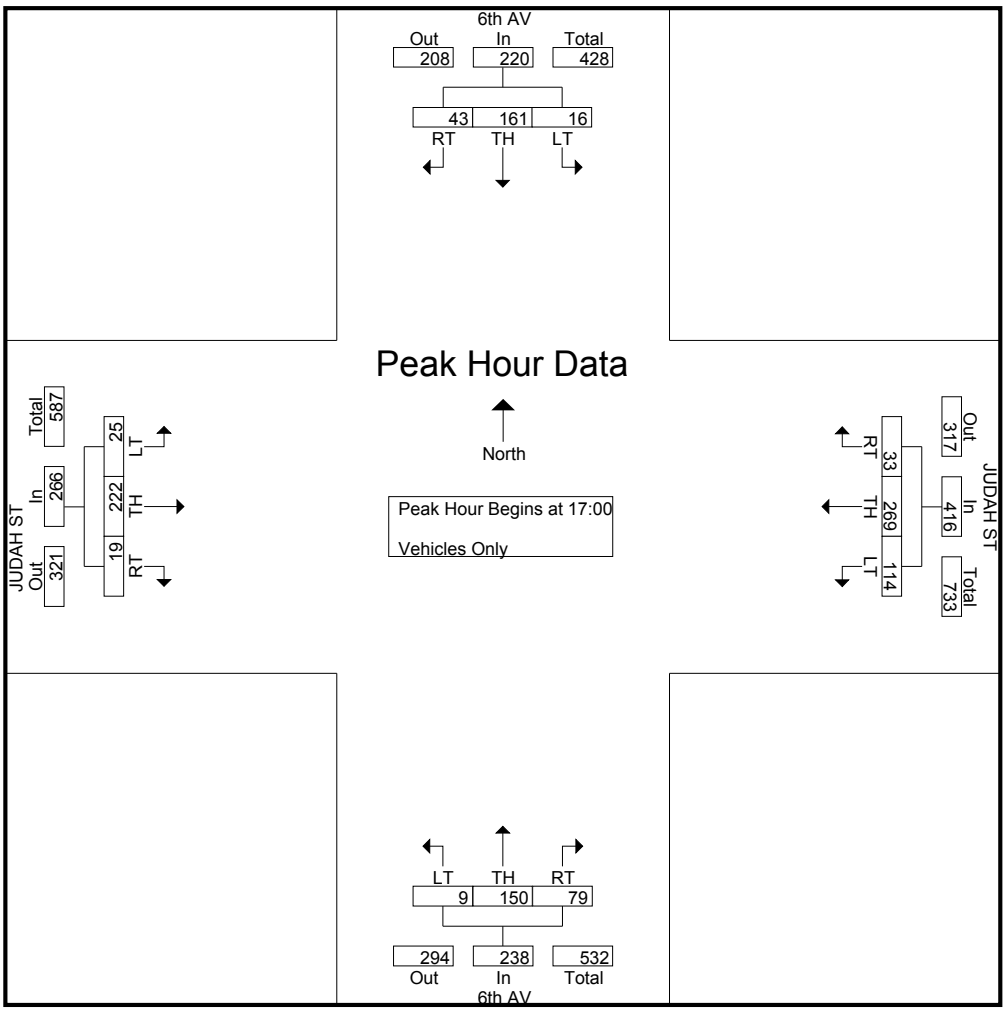
Groups Printed- Vehicles Only

	6th AV Southbound				JUDAH ST Westbound				6th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	1	22	3	26	7	66	21	94	19	26	1	46	4	46	2	52	218
16:15	4	27	3	34	10	67	19	96	21	29	2	52	3	58	3	64	246
16:30	9	24	3	36	11	68	23	102	21	33	2	56	2	48	3	53	247
16:45	15	31	5	51	11	43	27	81	28	33	1	62	5	46	1	52	246
Total	29	104	14	147	39	244	90	373	89	121	6	216	14	198	9	221	957
17:00	6	30	5	41	9	66	33	108	21	37	1	59	4	71	5	80	288
17:15	11	36	6	53	8	69	28	105	25	42	5	72	6	56	6	68	298
17:30	18	48	2	68	11	63	27	101	15	35	2	52	6	41	6	53	274
17:45	8	47	3	58	5	71	26	102	18	36	1	55	3	54	8	65	280
Total	43	161	16	220	33	269	114	416	79	150	9	238	19	222	25	266	1140
Grand Total	72	265	30	367	72	513	204	789	168	271	15	454	33	420	34	487	2097
Apprch %	19.6	72.2	8.2		9.1	65	25.9		37	59.7	3.3		6.8	86.2	7		
Total %	3.4	12.6	1.4	17.5	3.4	24.5	9.7	37.6	8	12.9	0.7	21.6	1.6	20	1.6	23.2	

	6th AV Southbound				JUDAH ST Westbound				6th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	6	30	5	41	9	66	**33**	**108**	21	37	1	59	4	**71**	5	**80**	288
17:15	11	36	**6**	53	8	69	28	105	**25**	**42**	**5**	**72**	**6**	56	6	68	**298**
17:30	**18**	**48**	2	**68**	**11**	63	27	101	15	35	2	52	6	41	6	53	274
17:45	8	47	3	58	5	**71**	26	102	18	36	1	55	3	54	**8**	65	280
Total Volume	43	161	16	220	33	269	114	416	79	150	9	238	19	222	25	266	1140
% App. Total	19.5	73.2	7.3		7.9	64.7	27.4		33.2	63	3.8		7.1	83.5	9.4		
PHF	.597	.839	.667	.809	.750	.947	.864	.963	.790	.893	.450	.826	.792	.782	.781	.831	.956



MARKS TRAFFIC DATA

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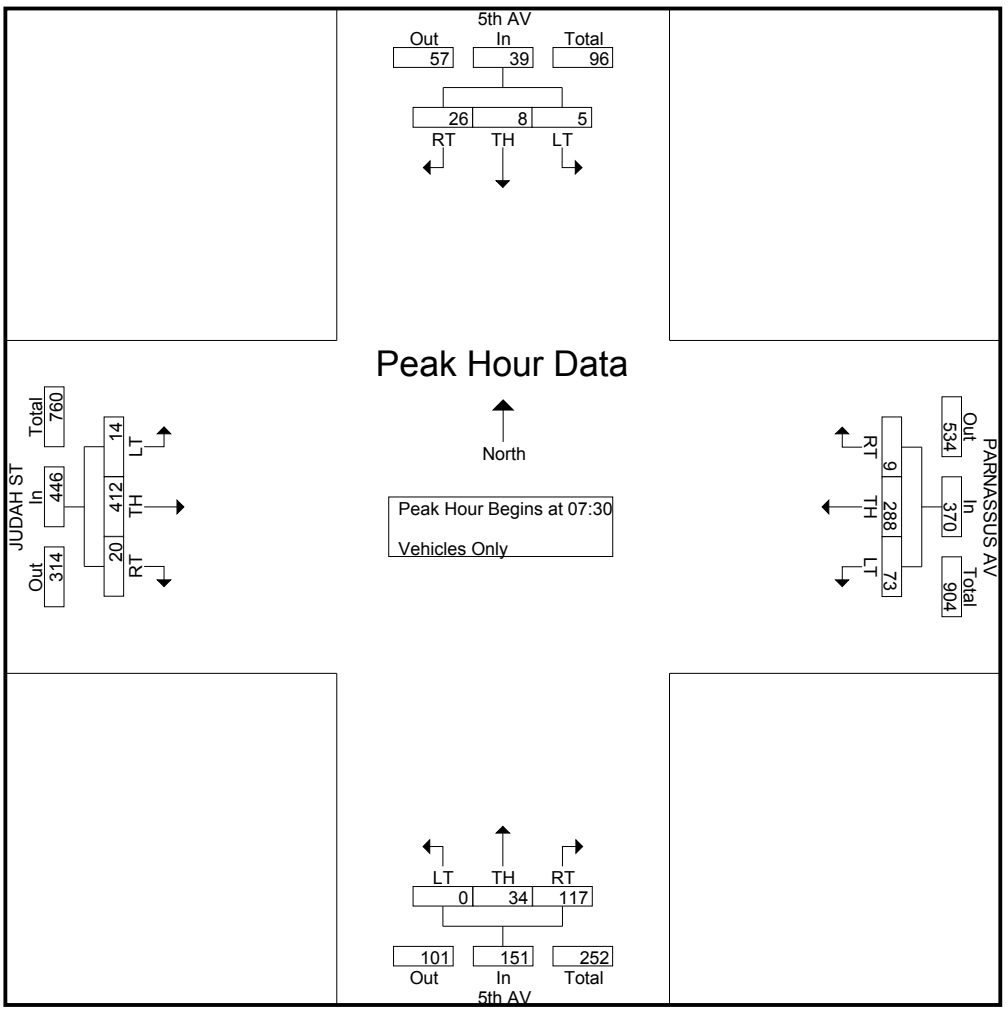
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 5-judah-a
Site Code : 7
Start Date : 5/23/2013
Page No : 1

Groups Printed- Vehicles Only

	5th AV Southbound				PARNASSUS AV Westbound				5th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	5	1	2	8	2	41	17	60	11	2	0	13	1	62	2	65	146
07:15	3	1	0	4	3	63	10	76	15	2	1	18	3	60	2	65	163
07:30	9	2	1	12	2	74	12	88	30	10	0	40	6	103	2	111	251
07:45	8	3	2	13	2	77	27	106	24	6	0	30	5	107	1	113	262
Total	25	7	5	37	9	255	66	330	80	20	1	101	15	332	7	354	822
08:00	6	0	1	7	3	76	21	100	26	9	0	35	8	95	8	111	253
08:15	3	3	1	7	2	61	13	76	37	9	0	46	1	107	3	111	240
08:30	2	3	1	6	7	40	16	63	12	0	0	12	1	99	6	106	187
08:45	4	2	3	9	1	46	19	66	27	2	0	29	3	81	2	86	190
Total	15	8	6	29	13	223	69	305	102	20	0	122	13	382	19	414	870
Grand Total	40	15	11	66	22	478	135	635	182	40	1	223	28	714	26	768	1692
Apprch %	60.6	22.7	16.7		3.5	75.3	21.3		81.6	17.9	0.4		3.6	93	3.4		
Total %	2.4	0.9	0.7	3.9	1.3	28.3	8	37.5	10.8	2.4	0.1	13.2	1.7	42.2	1.5	45.4	

	5th AV Southbound				PARNASSUS AV Westbound				5th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	**9**	2	1	12	2	74	12	88	30	**10**	0	40	6	103	2	111	251
07:45	8	**3**	**2**	**13**	2	**77**	**27**	**106**	24	6	0	30	5	**107**	1	**113**	**262**
08:00	6	0	1	7	**3**	76	21	100	26	9	0	35	**8**	95	**8**	111	253
08:15	3	3	1	7	2	61	13	76	**37**	9	0	**46**	1	107	3	111	240
Total Volume	26	8	5	39	9	288	73	370	117	34	0	151	20	412	14	446	1006
% App. Total	66.7	20.5	12.8		2.4	77.8	19.7		77.5	22.5	0		4.5	92.4	3.1		
PHF	.722	.667	.625	.750	.750	.935	.676	.873	.791	.850	.000	.821	.625	.963	.438	.987	.960



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CITY OF SAN FRANCISCO

File Name : 5-parnassus-p
Site Code : 5
Start Date : 10/5/2011
Page No : 1

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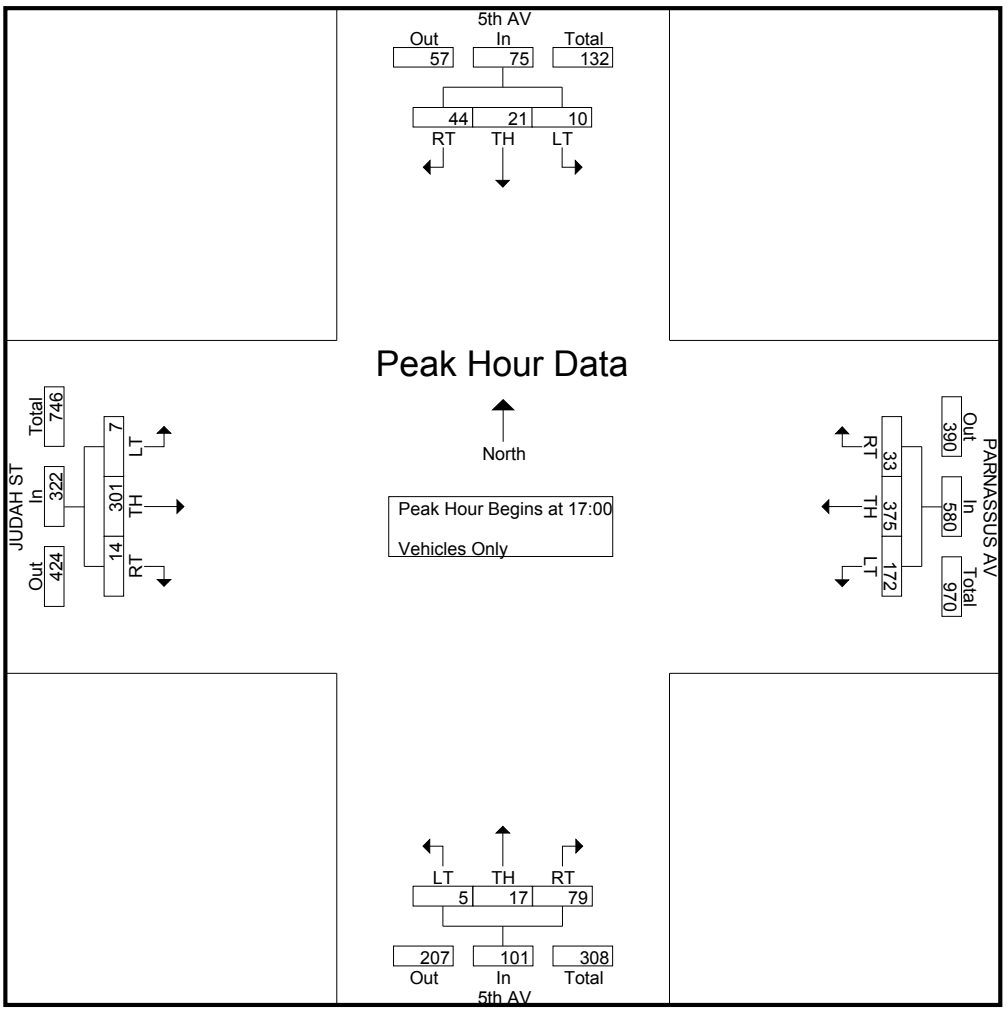
Groups Printed- Vehicles Only

	5th AV Southbound				PARNASSUS AV Westbound				5th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	7	5	3	15	5	86	20	111	12	3	2	17	5	56	3	64	207
16:15	6	3	1	10	9	90	19	118	17	7	1	25	2	76	1	79	232
16:30	9	2	1	12	5	89	35	129	18	2	2	22	2	69	4	75	238
16:45	15	4	3	22	10	64	22	96	19	1	1	21	6	65	2	73	212
Total	37	14	8	59	29	329	96	454	66	13	6	85	15	266	10	291	889
17:00	14	8	3	25	9	99	44	152	20	4	5	29	5	90	3	98	304
17:15	6	3	2	11	7	105	60	172	31	5	0	36	1	87	0	88	307
17:30	17	6	1	24	10	77	32	119	20	3	0	23	2	59	1	62	228
17:45	7	4	4	15	7	94	36	137	8	5	0	13	6	65	3	74	239
Total	44	21	10	75	33	375	172	580	79	17	5	101	14	301	7	322	1078
Grand Total	81	35	18	134	62	704	268	1034	145	30	11	186	29	567	17	613	1967
Apprch %	60.4	26.1	13.4		6	68.1	25.9		78	16.1	5.9		4.7	92.5	2.8		
Total %	4.1	1.8	0.9	6.8	3.2	35.8	13.6	52.6	7.4	1.5	0.6	9.5	1.5	28.8	0.9	31.2	

	5th AV Southbound				PARNASSUS AV Westbound				5th AV Northbound				JUDAH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	14	**8**	3	**25**	9	99	44	152	20	4	**5**	29	5	**90**	**3**	**98**	304
17:15	6	3	2	11	7	**105**	**60**	**172**	**31**	**5**	0	**36**	1	87	0	88	**307**
17:30	**17**	6	1	24	**10**	77	32	119	20	3	0	23	2	59	1	62	228
17:45	7	4	**4**	15	7	94	36	137	8	5	0	13	**6**	65	3	74	239
Total Volume	44	21	10	75	33	375	172	580	79	17	5	101	14	301	7	322	1078
% App. Total	58.7	28	13.3		5.7	64.7	29.7		78.2	16.8	5		4.3	93.5	2.2		
PHF	.647	.656	.625	.750	.825	.893	.717	.843	.637	.850	.250	.701	.583	.836	.583	.821	.878



MARKS TRAFFIC DATA

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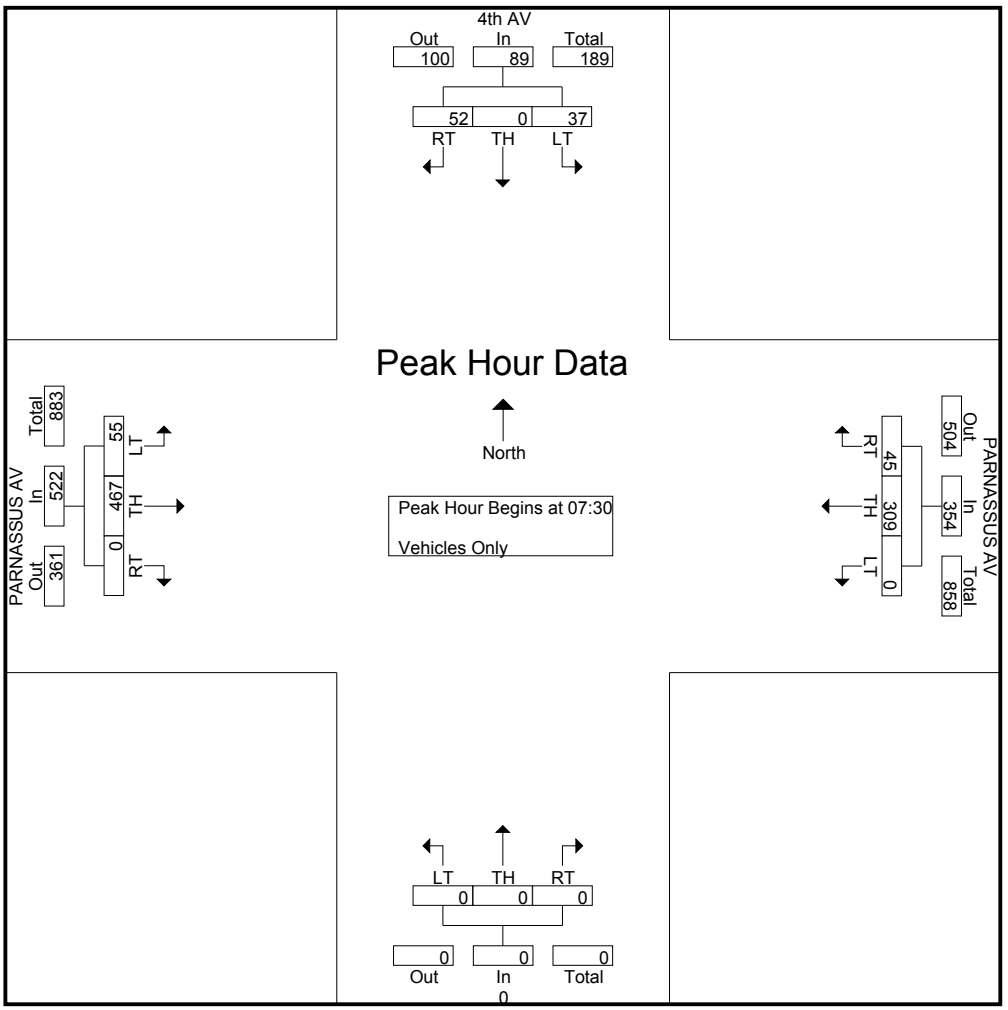
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-parnassus-a
Site Code : 8
Start Date : 5/23/2013
Page No : 1

Groups Printed- Vehicles Only

	4th AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	7	0	7	14	8	49	0	57	0	0	0	0	0	69	4	73	144
07:15	8	0	10	18	8	70	0	78	0	0	0	0	0	78	6	84	180
07:30	11	0	9	20	13	81	0	94	0	0	0	0	0	117	11	128	242
07:45	12	0	10	22	14	91	0	105	0	0	0	0	0	118	9	127	254
Total	38	0	36	74	43	291	0	334	0	0	0	0	0	382	30	412	820
08:00	15	0	10	25	8	75	0	83	0	0	0	0	0	107	15	122	230
08:15	14	0	8	22	10	62	0	72	0	0	0	0	0	125	20	145	239
08:30	10	0	14	24	9	51	0	60	0	0	0	0	0	102	8	110	194
08:45	18	0	11	29	2	49	0	51	0	0	0	0	0	102	10	112	192
Total	57	0	43	100	29	237	0	266	0	0	0	0	0	436	53	489	855
Grand Total	95	0	79	174	72	528	0	600	0	0	0	0	0	818	83	901	1675
Apprch %	54.6	0	45.4		12	88	0		0	0	0		0	90.8	9.2		
Total %	5.7	0	4.7	10.4	4.3	31.5	0	35.8	0	0	0	0	0	48.8	5	53.8	

	4th AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	11	0	9	20	13	81	0	94	0	0	0	0	0	117	11	128	242
07:45	12	0	**10**	22	**14**	**91**	0	**105**	0	0	0	0	0	118	9	127	**254**
08:00	**15**	0	10	**25**	8	75	0	83	0	0	0	0	0	107	15	122	230
08:15	14	0	8	22	10	62	0	72	0	0	0	0	0	**125**	**20**	**145**	239
Total Volume	52	0	37	89	45	309	0	354	0	0	0	0	0	467	55	522	965
% App. Total	58.4	0	41.6		12.7	87.3	0		0	0	0		0	89.5	10.5		
PHF	.867	.000	.925	.890	.804	.849	.000	.843	.000	.000	.000	.000	.000	.934	.688	.900	.950



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CITY OF SAN FRANCISCO

File Name : 4-parnassus-p
Site Code : 6
Start Date : 10/5/2011
Page No : 1

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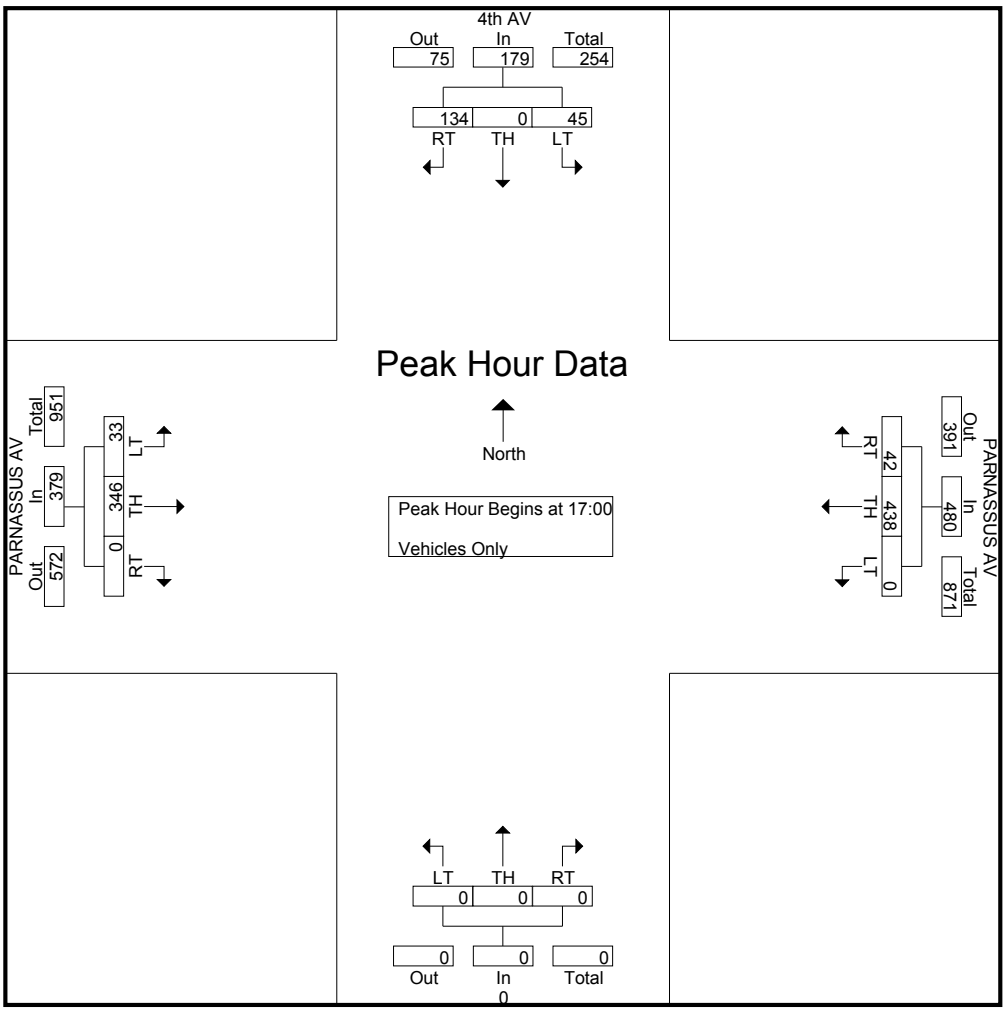
Groups Printed- Vehicles Only

	4th AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	15	0	14	29	17	101	0	118	0	0	0	0	0	65	8	73	220
16:15	22	0	12	34	16	98	0	114	0	0	0	0	0	90	3	93	241
16:30	18	0	9	27	12	110	0	122	0	0	0	0	0	79	9	88	237
16:45	27	0	12	39	8	72	0	80	0	0	0	0	0	79	11	90	209
Total	82	0	47	129	53	381	0	434	0	0	0	0	0	313	31	344	907
17:00	36	0	12	48	12	114	0	126	0	0	0	0	0	96	9	105	279
17:15	35	0	8	43	8	133	0	141	0	0	0	0	0	110	8	118	302
17:30	26	0	10	36	14	91	0	105	0	0	0	0	0	70	11	81	222
17:45	37	0	15	52	8	100	0	108	0	0	0	0	0	70	5	75	235
Total	134	0	45	179	42	438	0	480	0	0	0	0	0	346	33	379	1038
Grand Total	216	0	92	308	95	819	0	914	0	0	0	0	0	659	64	723	1945
Apprch %	70.1	0	29.9		10.4	89.6	0		0	0	0		0	91.1	8.9		
Total %	11.1	0	4.7	15.8	4.9	42.1	0	47	0	0	0	0	0	33.9	3.3	37.2	

	4th AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	36	0	12	48	12	114	0	126	0	0	0	0	0	96	9	105	279
17:15	35	0	8	43	8	**133**	0	**141**	0	0	0	0	0	**110**	8	**118**	**302**
17:30	26	0	10	36	**14**	91	0	105	0	0	0	0	0	70	**11**	81	222
17:45	**37**	0	**15**	**52**	8	100	0	108	0	0	0	0	0	70	5	75	235
Total Volume	134	0	45	179	42	438	0	480	0	0	0	0	0	346	33	379	1038
% App. Total	74.9	0	25.1		8.8	91.2	0		0	0	0		0	91.3	8.7		
PHF	.905	.000	.750	.861	.750	.823	.000	.851	.000	.000	.000	.000	.000	.786	.750	.803	.859



MARKS TRAFFIC DATA

mietekm@comcast.net
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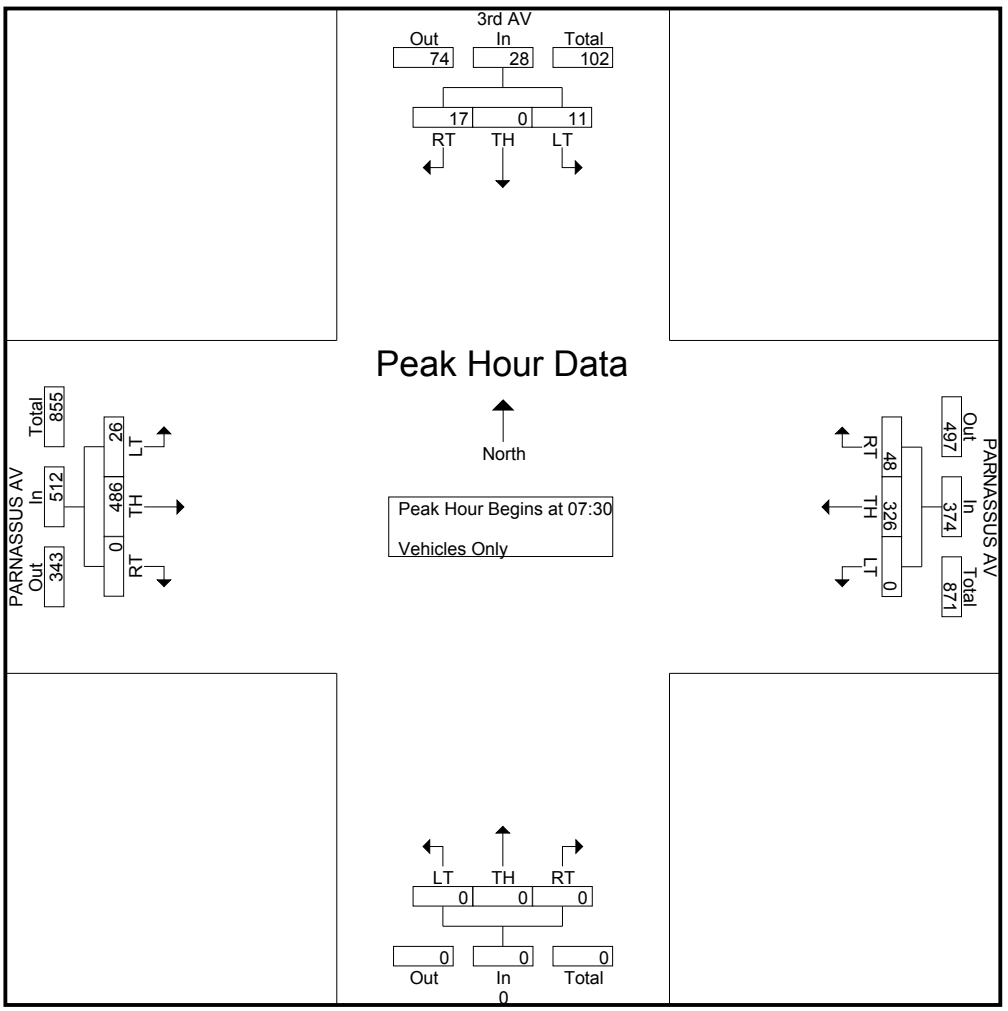
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-parnassus-a
Site Code : 9
Start Date : 5/23/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	2	0	1	3	6	54	0	60	0	0	0	0	0	79	1	80	143
07:15	1	0	2	3	13	74	0	87	0	0	0	0	0	76	5	81	171
07:30	4	0	3	7	20	87	0	107	0	0	0	0	0	116	7	123	237
07:45	2	0	3	5	15	97	0	112	0	0	0	0	0	127	7	134	251
Total	9	0	9	18	54	312	0	366	0	0	0	0	0	398	20	418	802
08:00	3	0	2	5	6	84	0	90	0	0	0	0	0	114	4	118	213
08:15	8	0	3	11	7	58	0	65	0	0	0	0	0	129	8	137	213
08:30	3	0	0	3	8	60	0	68	0	0	0	0	0	109	4	113	184
08:45	1	0	6	7	11	47	0	58	0	0	0	0	0	113	3	116	181
Total	15	0	11	26	32	249	0	281	0	0	0	0	0	465	19	484	791
Grand Total	24	0	20	44	86	561	0	647	0	0	0	0	0	863	39	902	1593
Apprch %	54.5	0	45.5		13.3	86.7	0		0	0	0		0	95.7	4.3		
Total %	1.5	0	1.3	2.8	5.4	35.2	0	40.6	0	0	0	0	0	54.2	2.4	56.6	

	3rd AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	4	0	**3**	7	**20**	87	0	107	0	0	0	0	0	116	7	123	237
07:45	2	0	3	5	15	**97**	0	**112**	0	0	0	0	0	127	7	134	**251**
08:00	3	0	2	5	6	84	0	90	0	0	0	0	0	114	4	118	213
08:15	**8**	0	3	**11**	7	58	0	65	0	0	0	0	0	**129**	**8**	**137**	213
Total Volume	17	0	11	28	48	326	0	374	0	0	0	0	0	486	26	512	914
% App. Total	60.7	0	39.3		12.8	87.2	0		0	0	0		0	94.9	5.1		
PHF	.531	.000	.917	.636	.600	.840	.000	.835	.000	.000	.000	.000	.000	.942	.813	.934	.910



MARKS TRAFFIC DATA
mietekm@comcast.net
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CITY OF SAN FRANCISCO

File Name : 3-parnassus-p
Site Code : 7
Start Date : 10/4/2011
Page No : 1

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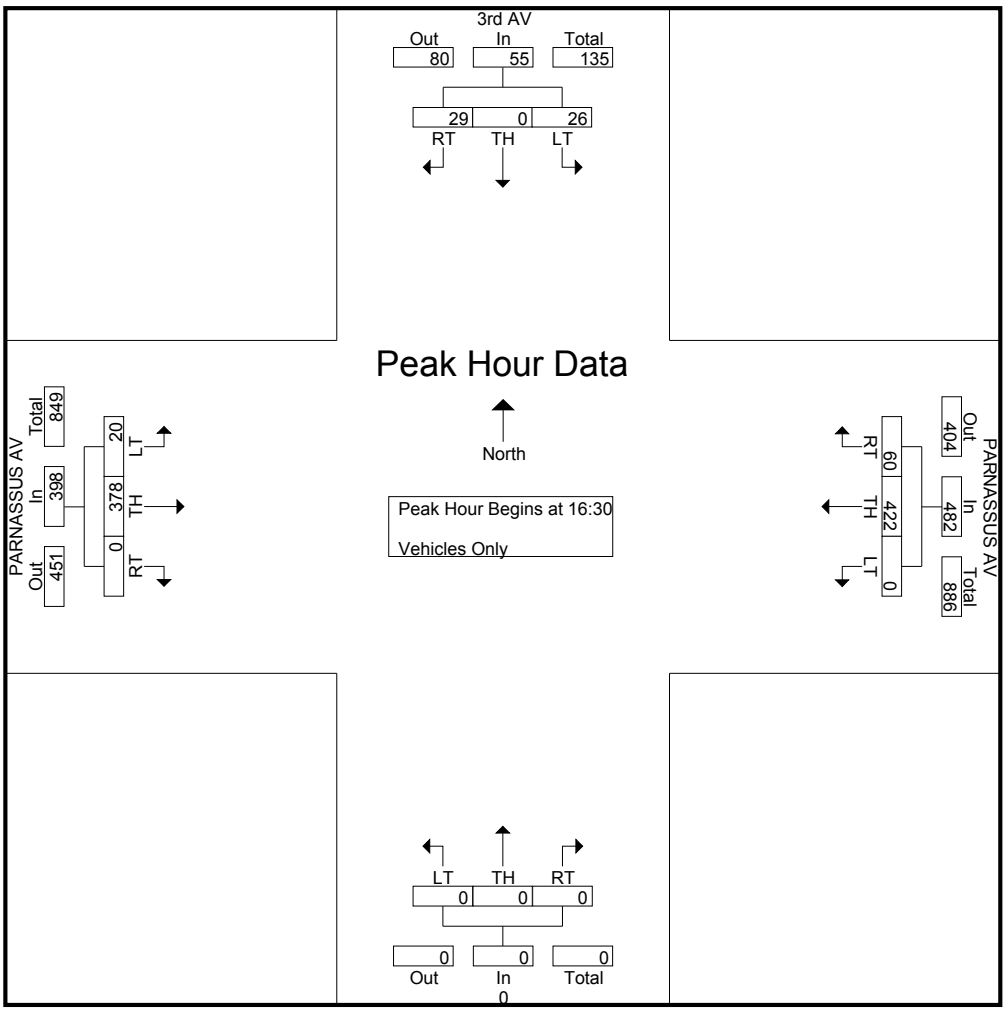
Groups Printed- Vehicles Only

	3rd AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	5	0	6	11	13	104	0	117	0	0	0	0	0	72	5	77	205
16:15	4	0	7	11	20	97	0	117	0	0	0	0	0	85	9	94	222
16:30	8	0	6	14	17	111	0	128	0	0	0	0	0	88	5	93	235
16:45	7	0	5	12	10	86	0	96	0	0	0	0	0	92	3	95	203
Total	24	0	24	48	60	398	0	458	0	0	0	0	0	337	22	359	865
17:00	9	0	10	19	24	121	0	145	0	0	0	0	0	88	5	93	257
17:15	5	0	5	10	9	104	0	113	0	0	0	0	0	110	7	117	240
17:30	9	0	7	16	12	113	0	125	0	0	0	0	0	87	6	93	234
17:45	2	0	9	11	8	82	0	90	0	0	0	0	0	78	4	82	183
Total	25	0	31	56	53	420	0	473	0	0	0	0	0	363	22	385	914
Grand Total	49	0	55	104	113	818	0	931	0	0	0	0	0	700	44	744	1779
Apprch %	47.1	0	52.9		12.1	87.9	0		0	0	0		0	94.1	5.9		
Total %	2.8	0	3.1	5.8	6.4	46	0	52.3	0	0	0	0	0	39.3	2.5	41.8	

	3rd AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	8	0	6	14	17	111	0	128	0	0	0	0	0	88	5	93	235
16:45	7	0	5	12	10	86	0	96	0	0	0	0	0	92	3	95	203
17:00	**9**	0	**10**	**19**	**24**	**121**	0	**145**	0	0	0	0	0	88	5	93	**257**
17:15	5	0	5	10	9	104	0	113	0	0	0	0	0	**110**	**7**	**117**	240
Total Volume	29	0	26	55	60	422	0	482	0	0	0	0	0	378	20	398	935
% App. Total	52.7	0	47.3		12.4	87.6	0		0	0	0		0	95	5		
PHF	.806	.000	.650	.724	.625	.872	.000	.831	.000	.000	.000	.000	.000	.859	.714	.850	.910



MARKS TRAFFIC DATA

mietekm@comcast.net
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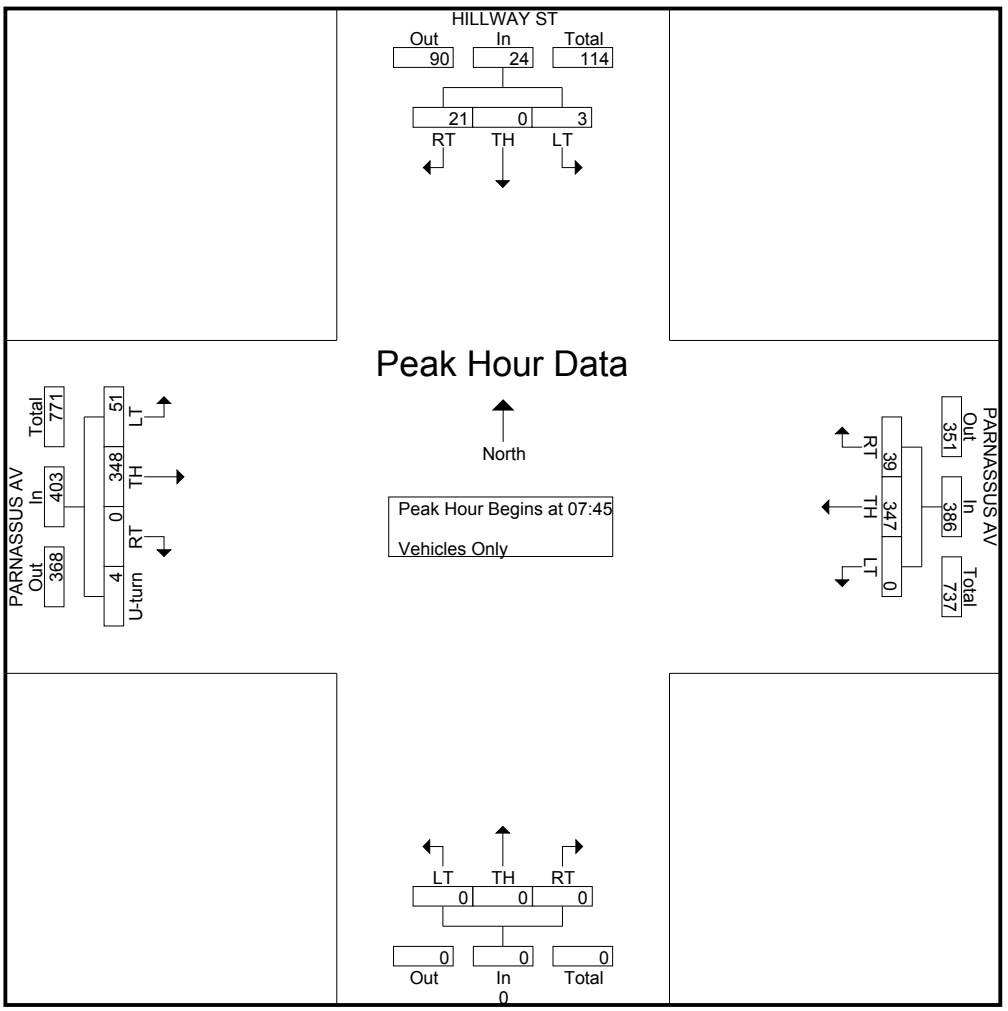
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : hillway-parnassus-a
Site Code : 10
Start Date : 5/15/2013
Page No : 1

Groups Printed- Vehicles Only

	HILLWAY ST Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
07:00	2	0	1	3	7	70	0	77	0	0	0	0	0	60	9	3	72	152
07:15	2	0	3	5	2	63	0	65	0	0	0	0	0	85	7	1	93	163
07:30	1	0	0	1	7	71	0	78	0	0	0	0	0	86	3	2	91	170
07:45	4	0	0	4	9	93	0	102	0	0	0	0	0	89	9	1	99	205
Total	9	0	4	13	25	297	0	322	0	0	0	0	0	320	28	7	355	690
08:00	8	0	1	9	9	90	0	99	0	0	0	0	0	77	22	1	100	208
08:15	7	0	2	9	9	88	0	97	0	0	0	0	0	86	13	1	100	206
08:30	2	0	0	2	12	76	0	88	0	0	0	0	0	96	7	1	104	194
08:45	5	0	0	5	5	84	0	89	0	0	0	0	0	78	14	0	92	186
Total	22	0	3	25	35	338	0	373	0	0	0	0	0	337	56	3	396	794
Grand Total	31	0	7	38	60	635	0	695	0	0	0	0	0	657	84	10	751	1484
Apprch %	81.6	0	18.4		8.6	91.4	0		0	0	0		0	87.5	11.2	1.3		
Total %	2.1	0	0.5	2.6	4	42.8	0	46.8	0	0	0	0	0	44.3	5.7	0.7	50.6	

	HILLWAY ST Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:45																		
07:45	4	0	0	4	9	**93**	0	**102**	0	0	0	0	0	89	9	**1**	99	205
08:00	**8**	0	1	**9**	9	90	0	99	0	0	0	0	0	77	**22**	1	100	**208**
08:15	7	0	**2**	9	9	88	0	97	0	0	0	0	0	86	13	1	100	206
08:30	2	0	0	2	**12**	76	0	88	0	0	0	0	0	**96**	7	1	**104**	194
Total Volume	21	0	3	24	39	347	0	386	0	0	0	0	0	348	51	4	403	813
% App. Total	87.5	0	12.5		10.1	89.9	0		0	0	0		0	86.4	12.7	1		
PHF	.656	.000	.375	.667	.813	.933	.000	.946	.000	.000	.000	.000	.000	.906	.580	1.00	.969	.977



MARKS TRAFFIC DATA
mietekm@comcast.net
916.806.0250

CITY OF SAN FRANCISCO

File Name : hillway-parnassus-p
Site Code : 8
Start Date : 10/4/2011
Page No : 1

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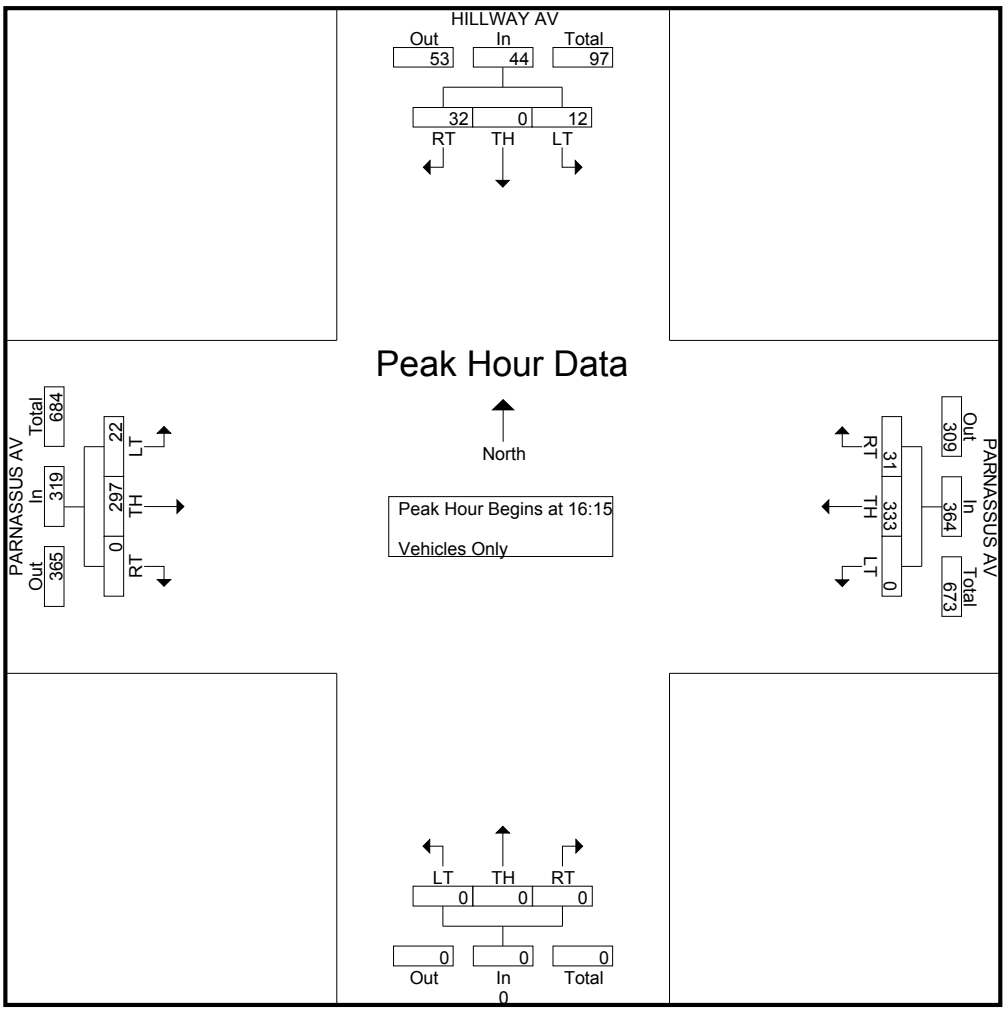
Groups Printed- Vehicles Only

	HILLWAY AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	8	0	6	14	4	76	0	80	0	0	0	0	0	69	3	72	166
16:15	9	0	2	11	8	83	0	91	0	0	0	0	0	74	7	81	183
16:30	7	0	4	11	6	73	0	79	0	0	0	0	0	65	5	70	160
16:45	10	0	3	13	10	74	0	84	0	0	0	0	0	65	3	68	165
Total	34	0	15	49	28	306	0	334	0	0	0	0	0	273	18	291	674
17:00	6	0	3	9	7	103	0	110	0	0	0	0	0	93	7	100	219
17:15	6	0	3	9	4	88	0	92	0	0	0	0	0	90	7	97	198
17:30	9	0	0	9	3	89	0	92	0	0	0	0	0	77	12	89	190
17:45	4	0	2	6	4	74	0	78	0	0	0	0	0	76	4	80	164
Total	25	0	8	33	18	354	0	372	0	0	0	0	0	336	30	366	771
Grand Total	59	0	23	82	46	660	0	706	0	0	0	0	0	609	48	657	1445
Apprch %	72	0	28		6.5	93.5	0		0	0	0		0	92.7	7.3		
Total %	4.1	0	1.6	5.7	3.2	45.7	0	48.9	0	0	0	0	0	42.1	3.3	45.5	

	HILLWAY AV Southbound				PARNASSUS AV Westbound				0 Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:00 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	9	0	2	11	8	83	0	91	0	0	0	0	0	74	**7**	81	183
16:30	7	0	**4**	11	6	73	0	79	0	0	0	0	0	65	5	70	160
16:45	**10**	0	3	**13**	**10**	74	0	84	0	0	0	0	0	65	3	68	165
17:00	6	0	3	9	7	**103**	0	**110**	0	0	0	0	0	**93**	7	**100**	**219**
Total Volume	32	0	12	44	31	333	0	364	0	0	0	0	0	297	22	319	727
% App. Total	72.7	0	27.3		8.5	91.5	0		0	0	0		0	93.1	6.9		
PHF	.800	.000	.750	.846	.775	.808	.000	.827	.000	.000	.000	.000	.000	.798	.786	.798	.830



MARKS TRAFFIC DATA

mietekm@comcast.net
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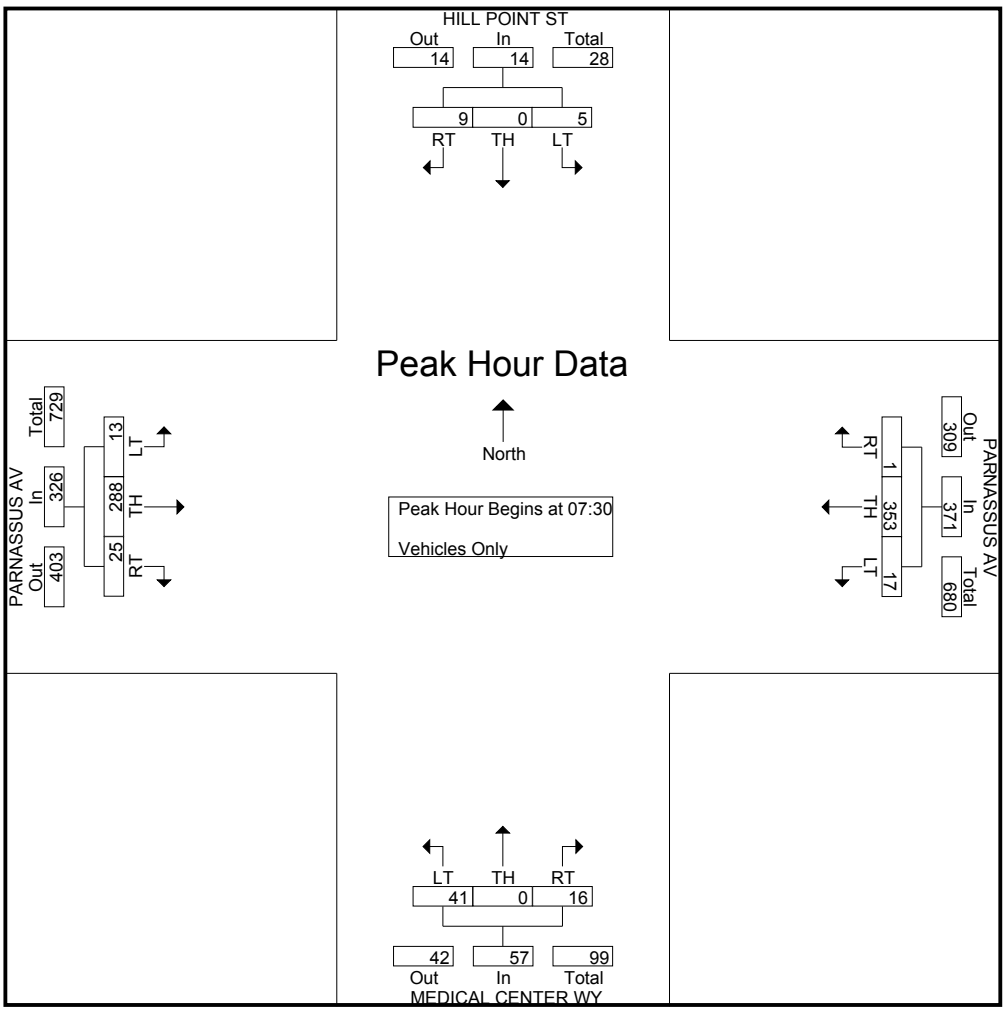
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : hill point-parnassus-a
Site Code : 11
Start Date : 5/16/2013
Page No : 1

Groups Printed- Vehicles Only

	HILL POINT ST Southbound				PARNASSUS AV Westbound				MEDICAL CENTER WY Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	1	0	0	1	0	33	2	35	8	0	5	13	9	37	0	46	95
07:15	2	0	1	3	0	58	3	61	5	1	3	9	8	57	2	67	140
07:30	1	0	0	1	0	79	6	85	4	0	10	14	7	84	1	92	192
07:45	3	0	1	4	1	97	4	102	2	0	12	14	7	72	3	82	202
Total	7	0	2	9	1	267	15	283	19	1	30	50	31	250	6	287	629
08:00	1	0	4	5	0	95	4	99	4	0	11	15	6	63	3	72	191
08:15	4	0	0	4	0	82	3	85	6	0	8	14	5	69	6	80	183
08:30	3	0	2	5	2	78	3	83	0	0	6	6	4	71	0	75	169
08:45	1	0	0	1	1	86	6	93	5	0	7	12	14	65	1	80	186
Total	9	0	6	15	3	341	16	360	15	0	32	47	29	268	10	307	729
Grand Total	16	0	8	24	4	608	31	643	34	1	62	97	60	518	16	594	1358
Apprch %	66.7	0	33.3		0.6	94.6	4.8		35.1	1	63.9		10.1	87.2	2.7		
Total %	1.2	0	0.6	1.8	0.3	44.8	2.3	47.3	2.5	0.1	4.6	7.1	4.4	38.1	1.2	43.7	

	HILL POINT ST Southbound				PARNASSUS AV Westbound				MEDICAL CENTER WY Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	1	0	0	1	0	79	**6**	85	4	0	10	14	**7**	**84**	1	**92**	192
07:45	3	0	1	4	**1**	**97**	4	**102**	2	0	**12**	14	7	72	3	82	**202**
08:00	1	0	**4**	**5**	0	95	4	99	4	0	11	**15**	6	63	3	72	191
08:15	**4**	0	0	4	0	82	3	85	**6**	0	8	14	5	69	**6**	80	183
Total Volume	9	0	5	14	1	353	17	371	16	0	41	57	25	288	13	326	768
% App. Total	64.3	0	35.7		0.3	95.1	4.6		28.1	0	71.9		7.7	88.3	4		
PHF	.563	.000	.313	.700	.250	.910	.708	.909	.667	.000	.854	.950	.893	.857	.542	.886	.950



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CITY OF SAN FRANCISCO

File Name : hill-parnassus-p
Site Code : 9
Start Date : 10/4/2011
Page No : 1

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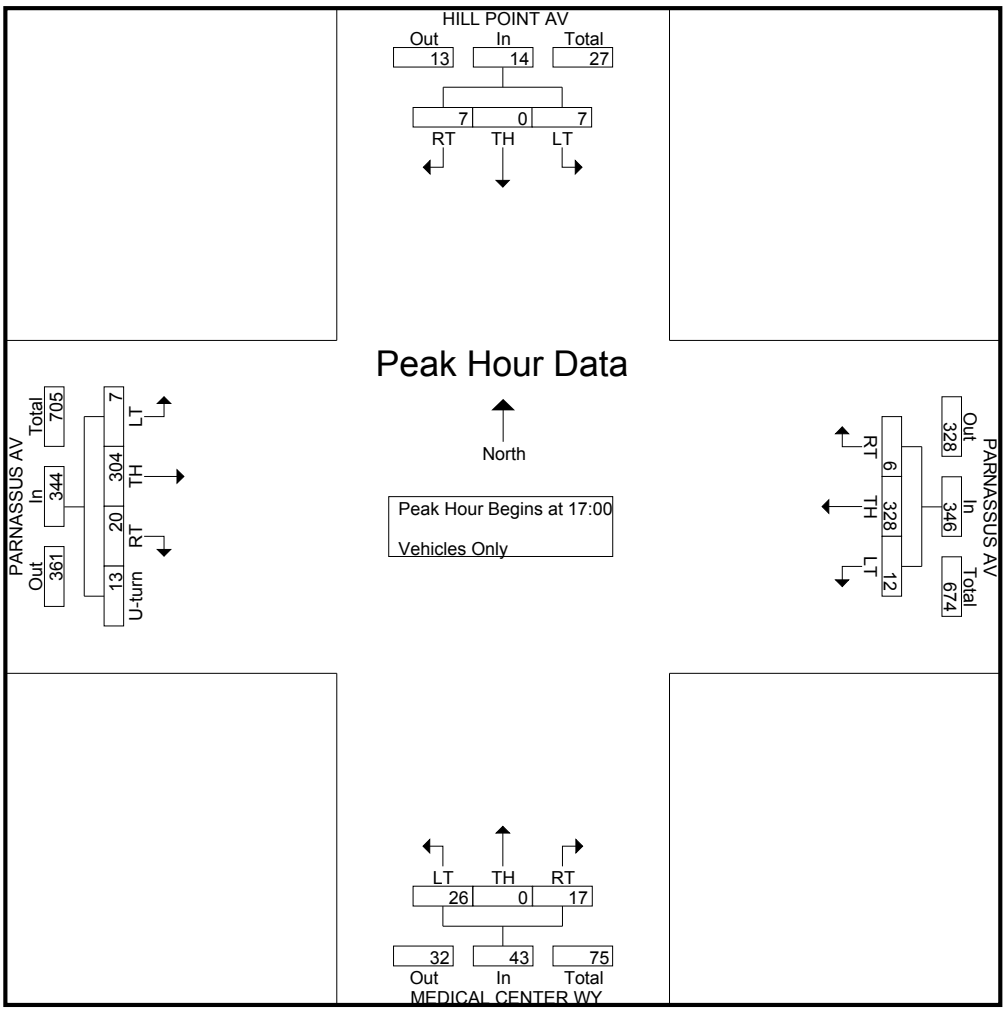
Groups Printed- Vehicles Only

	HILL POINT AV Southbound				PARNASSUS AV Westbound				MEDICAL CENTER WY Northbound				PARNASSUS AV Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
16:00	4	0	2	6	5	71	4	80	6	0	4	10	3	65	4	2	74	170
16:15	2	0	8	10	3	77	0	80	3	0	9	12	8	62	2	4	76	178
16:30	2	0	1	3	2	68	1	71	3	0	4	7	2	61	3	4	70	151
16:45	3	0	0	3	5	67	4	76	3	0	11	14	4	57	3	3	67	160
Total	11	0	11	22	15	283	9	307	15	0	28	43	17	245	12	13	287	659
17:00	2	0	1	3	2	95	4	101	8	0	7	15	5	86	1	5	97	216
17:15	1	0	3	4	2	80	5	87	5	0	10	15	6	82	2	2	92	198
17:30	3	0	3	6	1	83	2	86	0	0	3	3	3	67	2	3	75	170
17:45	1	0	0	1	1	70	1	72	4	0	6	10	6	69	2	3	80	163
Total	7	0	7	14	6	328	12	346	17	0	26	43	20	304	7	13	344	747
Grand Total	18	0	18	36	21	611	21	653	32	0	54	86	37	549	19	26	631	1406
Apprch %	50	0	50		3.2	93.6	3.2		37.2	0	62.8		5.9	87	3	4.1		
Total %	1.3	0	1.3	2.6	1.5	43.5	1.5	46.4	2.3	0	3.8	6.1	2.6	39	1.4	1.8	44.9	

	HILL POINT AV Southbound				PARNASSUS AV Westbound				MEDICAL CENTER WY Northbound				PARNASSUS AV Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 17:00																		
17:00	2	0	1	3	**2**	**95**	4	**101**	**8**	0	7	**15**	5	**86**	1	**5**	**97**	**216**
17:15	1	0	**3**	4	2	80	**5**	87	5	0	**10**	15	**6**	82	**2**	2	92	198
17:30	**3**	0	3	**6**	1	83	2	86	0	0	3	3	3	67	2	3	75	170
17:45	1	0	0	1	1	70	1	72	4	0	6	10	6	69	2	3	80	163
Total Volume	7	0	7	14	6	328	12	346	17	0	26	43	20	304	7	13	344	747
% App. Total	50	0	50		1.7	94.8	3.5		39.5	0	60.5		5.8	88.4	2	3.8		
PHF	.583	.000	.583	.583	.750	.863	.600	.856	.531	.000	.650	.717	.833	.884	.875	.650	.887	.865



MARKS TRAFFIC DATA

mietekm@comcast.net
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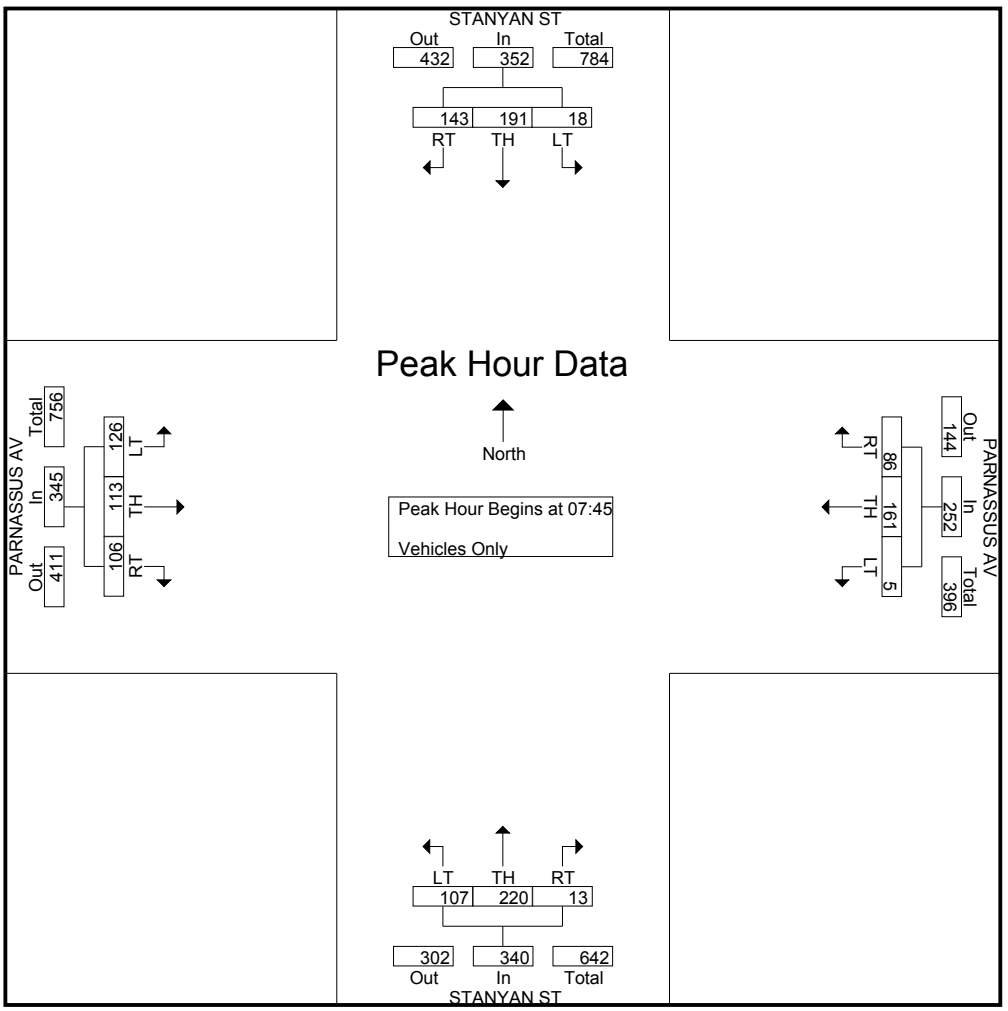
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : stanyan-parnassus-a
Site Code : 12
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	STANYAN ST Southbound				PARNASSUS AV Westbound				STANYAN ST Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	9	12	9	30	9	27	0	36	0	30	6	36	6	24	24	54	156
07:15	23	34	3	60	9	18	1	28	3	33	17	53	16	22	37	75	216
07:30	22	51	4	77	16	36	4	56	4	44	11	59	31	14	27	72	264
07:45	29	62	7	98	27	49	2	78	2	55	32	89	28	32	28	88	353
Total	83	159	23	265	61	130	7	198	9	162	66	237	81	92	116	289	989
08:00	41	44	2	87	16	37	1	54	5	52	25	82	31	26	36	93	316
08:15	37	36	5	78	29	36	1	66	6	66	24	96	23	27	32	82	322
08:30	36	49	4	89	14	39	1	54	0	47	26	73	24	28	30	82	298
08:45	33	58	2	93	14	35	2	51	0	43	25	68	17	27	32	76	288
Total	147	187	13	347	73	147	5	225	11	208	100	319	95	108	130	333	1224
Grand Total	230	346	36	612	134	277	12	423	20	370	166	556	176	200	246	622	2213
Apprch %	37.6	56.5	5.9		31.7	65.5	2.8		3.6	66.5	29.9		28.3	32.2	39.5		
Total %	10.4	15.6	1.6	27.7	6.1	12.5	0.5	19.1	0.9	16.7	7.5	25.1	8	9	11.1	28.1	

	STANYAN ST Southbound				PARNASSUS AV Westbound				STANYAN ST Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	29	**62**	**7**	**98**	27	**49**	**2**	**78**	2	55	**32**	89	28	**32**	28	88	**353**
08:00	**41**	44	2	87	16	37	1	54	5	52	25	82	**31**	26	**36**	**93**	316
08:15	37	36	5	78	**29**	36	1	66	**6**	**66**	24	**96**	23	27	32	82	322
08:30	36	49	4	89	14	39	1	54	0	47	26	73	24	28	30	82	298
Total Volume	143	191	18	352	86	161	5	252	13	220	107	340	106	113	126	345	1289
% App. Total	40.6	54.3	5.1		34.1	63.9	2		3.8	64.7	31.5		30.7	32.8	36.5		
PHF	.872	.770	.643	.898	.741	.821	.625	.808	.542	.833	.836	.885	.855	.883	.875	.927	.913



MARKS TRAFFIC DATA
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CITY OF SAN FRANCISCO

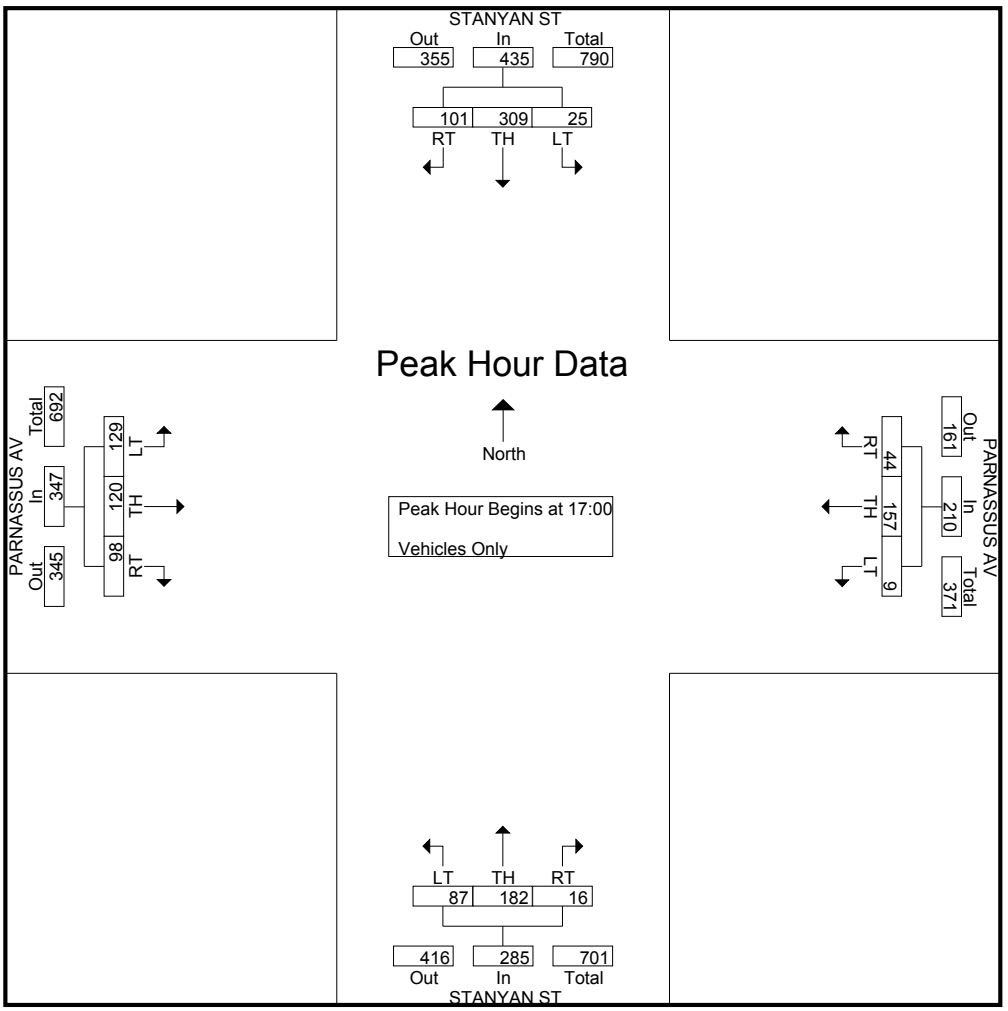
File Name : stanyan-parnassus-p
Site Code : 10
Start Date : 10/4/2011
Page No : 1

fp

Groups Printed- Vehicles Only

	STANYAN ST Southbound				PARNASSUS AV Westbound				STANYAN ST Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	19	80	6	105	10	28	2	40	6	26	21	53	26	29	21	76	274
16:15	22	80	8	110	10	35	5	50	10	50	21	81	16	25	31	72	313
16:30	25	66	5	96	5	30	3	38	10	44	13	67	18	24	29	71	272
16:45	24	75	8	107	9	40	2	51	3	43	18	64	13	20	21	54	276
Total	90	301	27	418	34	133	12	179	29	163	73	265	73	98	102	273	1135
17:00	32	81	5	118	10	42	2	54	3	41	27	71	26	26	37	89	332
17:15	27	82	4	113	13	37	5	55	3	43	22	68	17	39	33	89	325
17:30	22	71	7	100	8	41	1	50	2	45	18	65	31	27	32	90	305
17:45	20	75	9	104	13	37	1	51	8	53	20	81	24	28	27	79	315
Total	101	309	25	435	44	157	9	210	16	182	87	285	98	120	129	347	1277
Grand Total	191	610	52	853	78	290	21	389	45	345	160	550	171	218	231	620	2412
Apprch %	22.4	71.5	6.1		20.1	74.6	5.4		8.2	62.7	29.1		27.6	35.2	37.3		
Total %	7.9	25.3	2.2	35.4	3.2	12	0.9	16.1	1.9	14.3	6.6	22.8	7.1	9	9.6	25.7	

	STANYAN ST Southbound				PARNASSUS AV Westbound				STANYAN ST Northbound				PARNASSUS AV Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**32**	81	5	**118**	10	**42**	2	54	3	41	**27**	71	26	26	**37**	89	**332**
17:15	27	**82**	4	113	**13**	37	**5**	**55**	3	43	22	68	17	**39**	33	89	325
17:30	22	71	7	100	8	41	1	50	2	45	18	65	**31**	27	32	**90**	305
17:45	20	75	**9**	104	13	37	1	51	**8**	**53**	20	**81**	24	28	27	79	315
Total Volume	101	309	25	435	44	157	9	210	16	182	87	285	98	120	129	347	1277
% App. Total	23.2	71	5.7		21	74.8	4.3		5.6	63.9	30.5		28.2	34.6	37.2		
PHF	.789	.942	.694	.922	.846	.935	.450	.955	.500	.858	.806	.880	.790	.769	.872	.964	.962



MARKS TRAFFIC DATA

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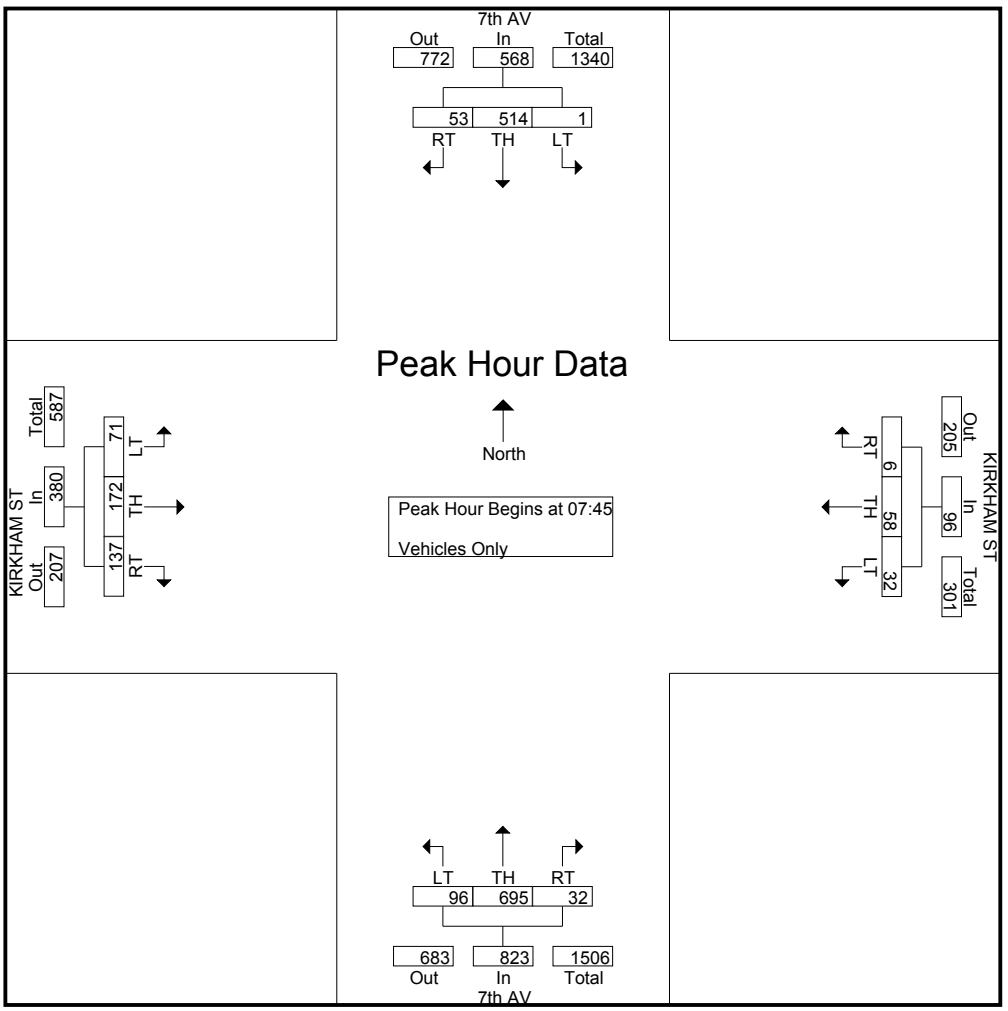
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-kirkham-a
Site Code : 1
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	7th AV Southbound				KIRKHAM ST Westbound				7th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	2	89	0	91	0	6	7	13	7	106	14	127	21	16	4	41	272
07:15	4	101	0	105	2	9	11	22	4	165	16	185	22	28	19	69	381
07:30	11	123	0	134	1	21	15	37	7	142	12	161	35	40	19	94	426
07:45	17	134	0	151	1	19	11	31	7	176	18	201	33	51	17	101	484
Total	34	447	0	481	4	55	44	103	25	589	60	674	111	135	59	305	1563
08:00	13	138	0	151	4	15	8	27	12	187	20	219	42	35	13	90	487
08:15	12	126	0	138	1	12	4	17	8	171	27	206	31	52	17	100	461
08:30	11	116	1	128	0	12	9	21	5	161	31	197	31	34	24	89	435
08:45	7	123	0	130	3	13	10	26	13	174	23	210	32	40	11	83	449
Total	43	503	1	547	8	52	31	91	38	693	101	832	136	161	65	362	1832
Grand Total	77	950	1	1028	12	107	75	194	63	1282	161	1506	247	296	124	667	3395
Apprch %	7.5	92.4	0.1		6.2	55.2	38.7		4.2	85.1	10.7		37	44.4	18.6		
Total %	2.3	28	0	30.3	0.4	3.2	2.2	5.7	1.9	37.8	4.7	44.4	7.3	8.7	3.7	19.6	

	7th AV Southbound				KIRKHAM ST Westbound				7th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	**17**	134	0	**151**	1	**19**	**11**	**31**	7	176	18	201	33	51	17	**101**	484
08:00	13	**138**	0	151	**4**	15	8	27	**12**	**187**	20	**219**	**42**	35	13	90	**487**
08:15	12	126	0	138	1	12	4	17	8	171	27	206	31	**52**	17	100	461
08:30	11	116	**1**	128	0	12	9	21	5	161	**31**	197	31	34	**24**	89	435
Total Volume	53	514	1	568	6	58	32	96	32	695	96	823	137	172	71	380	1867
% App. Total	9.3	90.5	0.2		6.2	60.4	33.3		3.9	84.4	11.7		36.1	45.3	18.7		
PHF	.779	.931	.250	.940	.375	.763	.727	.774	.667	.929	.774	.939	.815	.827	.740	.941	.958



MARKS TRAFFIC DATA

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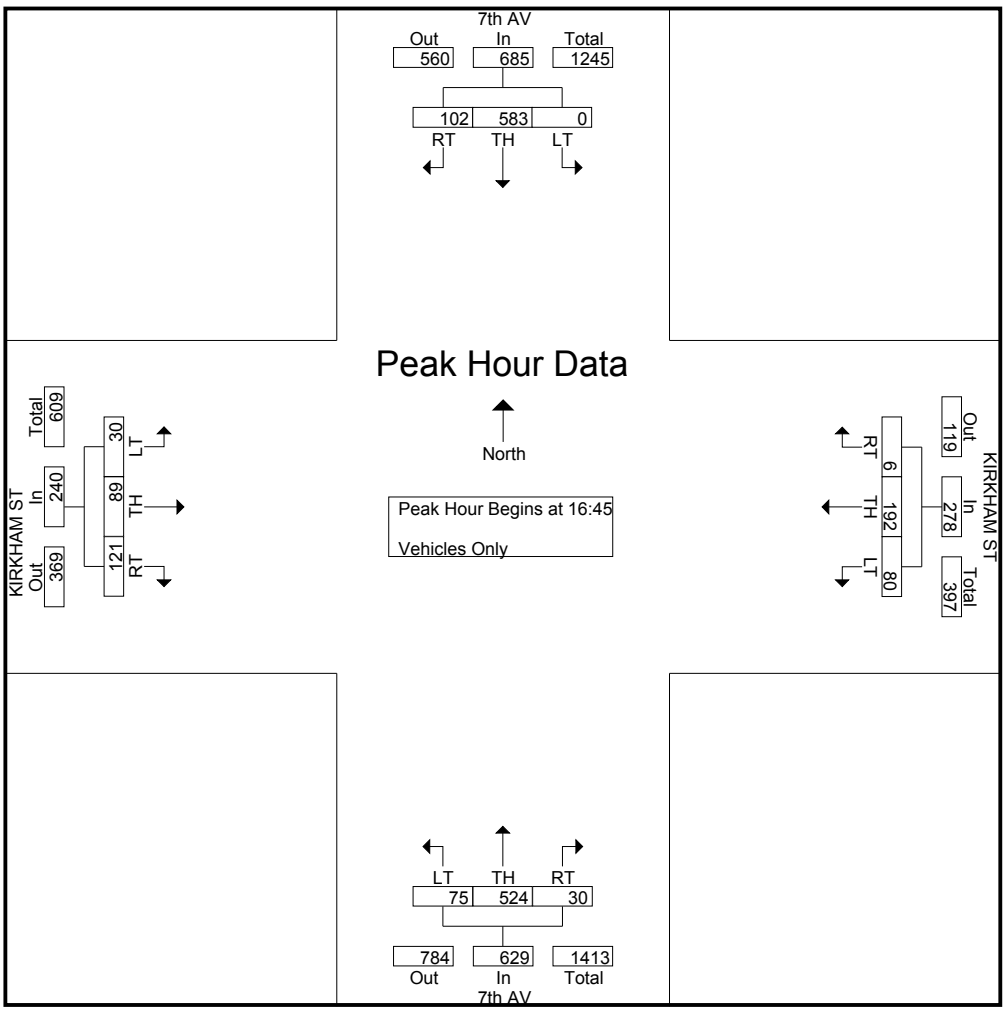
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-kirkham-p
Site Code : 1
Start Date : 5/14/2013
Page No : 1

Groups Printed- Vehicles Only

	7th AV Southbound				KIRKHAM ST Westbound				7th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	21	138	0	159	2	23	11	36	5	132	22	159	32	18	7	57	411
16:15	27	151	0	178	0	22	14	36	10	125	25	160	27	21	9	57	431
16:30	29	135	0	164	3	36	12	51	9	126	25	160	37	13	11	61	436
16:45	23	151	0	174	3	31	17	51	4	124	15	143	29	26	8	63	431
Total	100	575	0	675	8	112	54	174	28	507	87	622	125	78	35	238	1709
17:00	14	153	0	167	0	53	25	78	11	134	23	168	23	27	8	58	471
17:15	28	140	0	168	2	58	19	79	7	135	17	159	29	17	8	54	460
17:30	37	139	0	176	1	50	19	70	8	131	20	159	40	19	6	65	470
17:45	21	127	1	149	1	49	21	71	3	106	39	148	25	31	2	58	426
Total	100	559	1	660	4	210	84	298	29	506	99	634	117	94	24	235	1827
Grand Total	200	1134	1	1335	12	322	138	472	57	1013	186	1256	242	172	59	473	3536
Apprch %	15	84.9	0.1		2.5	68.2	29.2		4.5	80.7	14.8		51.2	36.4	12.5		
Total %	5.7	32.1	0	37.8	0.3	9.1	3.9	13.3	1.6	28.6	5.3	35.5	6.8	4.9	1.7	13.4	

	7th AV Southbound				KIRKHAM ST Westbound				7th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	23	151	0	174	**3**	31	17	51	4	124	15	143	29	26	**8**	63	431
17:00	14	**153**	0	167	0	53	**25**	78	**11**	134	**23**	**168**	23	**27**	8	58	**471**
17:15	28	140	0	168	2	**58**	19	**79**	7	**135**	17	159	29	17	8	54	460
17:30	**37**	139	0	**176**	1	50	19	70	8	131	20	159	**40**	19	6	**65**	470
Total Volume	102	583	0	685	6	192	80	278	30	524	75	629	121	89	30	240	1832
% App. Total	14.9	85.1	0		2.2	69.1	28.8		4.8	83.3	11.9		50.4	37.1	12.5		
PHF	.689	.953	.000	.973	.500	.828	.800	.880	.682	.970	.815	.936	.756	.824	.938	.923	.972



MARKS TRAFFIC DATA

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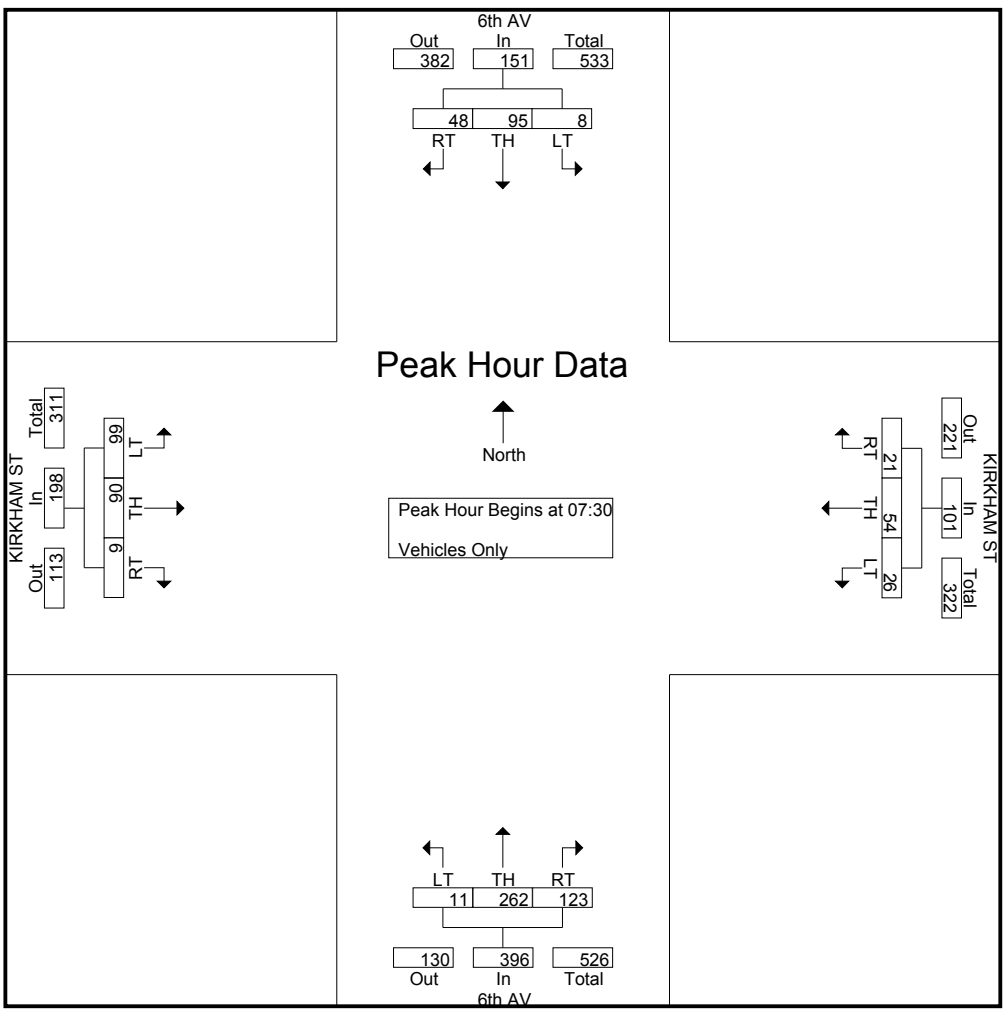
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 6-kirkham-a
Site Code : 2
Start Date : 5/23/2013
Page No : 1

Groups Printed- Vehicles Only

	6th AV Southbound				KIRKHAM ST Westbound				6th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	4	15	1	20	0	10	6	16	17	43	5	65	0	7	10	17	118
07:15	8	16	1	25	2	6	6	14	16	44	2	62	6	10	10	26	127
07:30	12	23	0	35	3	12	6	21	25	67	2	94	2	22	24	48	198
07:45	12	24	2	38	2	14	9	25	27	60	1	88	3	24	23	50	201
Total	36	78	4	118	7	42	27	76	85	214	10	309	11	63	67	141	644
08:00	13	23	3	39	8	15	7	30	26	60	3	89	3	22	24	49	207
08:15	11	25	3	39	8	13	4	25	45	75	5	125	1	22	28	51	240
08:30	5	14	2	21	4	11	8	23	16	56	4	76	2	19	22	43	163
08:45	11	22	3	36	4	12	6	22	23	44	1	68	3	22	21	46	172
Total	40	84	11	135	24	51	25	100	110	235	13	358	9	85	95	189	782
Grand Total	76	162	15	253	31	93	52	176	195	449	23	667	20	148	162	330	1426
Apprch %	30	64	5.9		17.6	52.8	29.5		29.2	67.3	3.4		6.1	44.8	49.1		
Total %	5.3	11.4	1.1	17.7	2.2	6.5	3.6	12.3	13.7	31.5	1.6	46.8	1.4	10.4	11.4	23.1	

	6th AV Southbound				KIRKHAM ST Westbound				6th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	12	23	0	35	3	12	6	21	25	67	2	94	2	22	24	48	198
07:45	12	24	2	38	2	14	**9**	25	27	60	1	88	**3**	**24**	23	50	201
08:00	**13**	23	**3**	**39**	**8**	**15**	7	**30**	26	60	3	89	3	22	24	49	207
08:15	11	**25**	3	39	8	13	4	25	**45**	**75**	**5**	**125**	1	22	**28**	**51**	**240**
Total Volume	48	95	8	151	21	54	26	101	123	262	11	396	9	90	99	198	846
% App. Total	31.8	62.9	5.3		20.8	53.5	25.7		31.1	66.2	2.8		4.5	45.5	50		
PHF	.923	.950	.667	.968	.656	.900	.722	.842	.683	.873	.550	.792	.750	.938	.884	.971	.881



MARKS TRAFFIC DATA
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CITY OF SAN FRANCISCO

File Name : 6-kirkham-p
Site Code : 11
Start Date : 10/5/2011
Page No : 1

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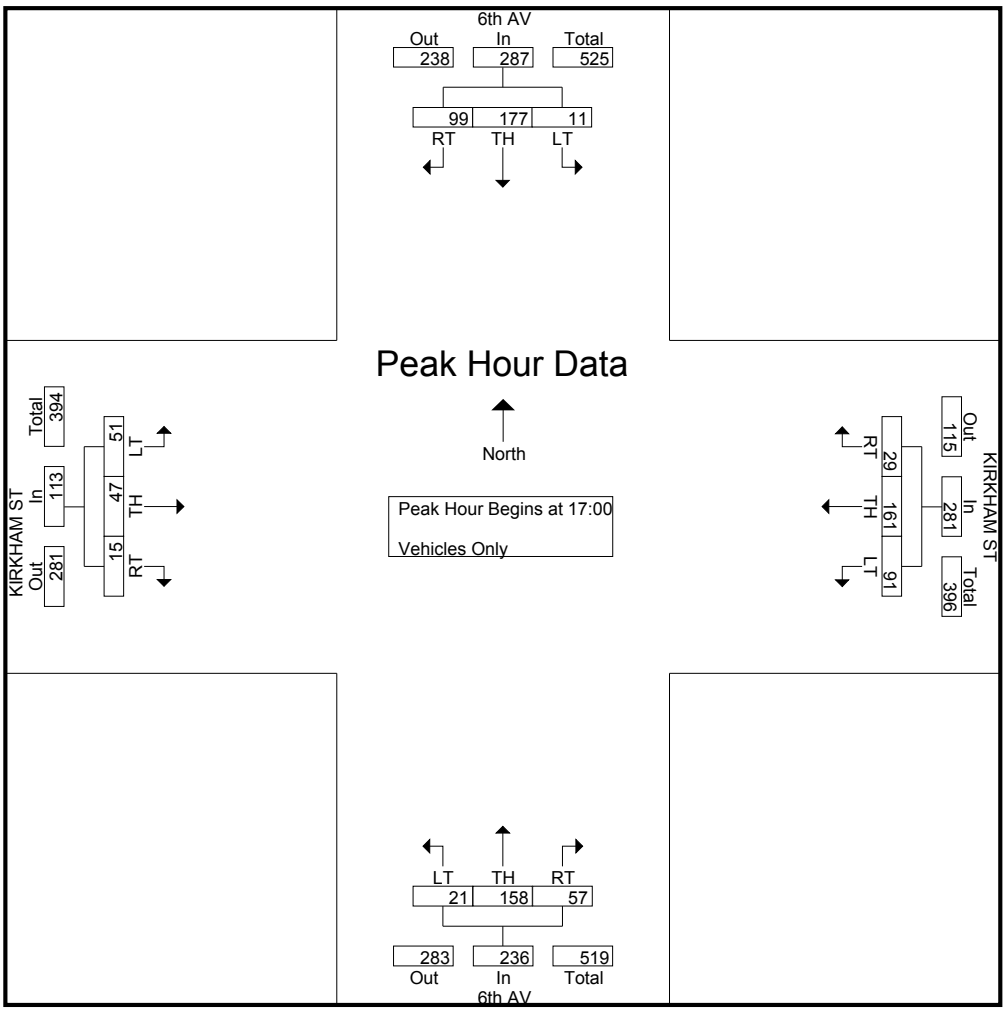
Groups Printed- Vehicles Only

	6th AV Southbound				KIRKHAM ST Westbound				6th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	14	28	2	44	6	20	14	40	9	33	2	44	2	8	9	19	147
16:15	8	35	2	45	4	20	9	33	15	42	5	62	2	13	11	26	166
16:30	14	33	2	49	6	33	15	54	15	42	4	61	3	5	6	14	178
16:45	23	36	2	61	6	30	18	54	17	46	2	65	2	12	11	25	205
Total	59	132	8	199	22	103	56	181	56	163	13	232	9	38	37	84	696
17:00	23	38	4	65	18	36	22	76	15	38	4	57	4	15	8	27	225
17:15	26	44	1	71	5	49	28	82	19	49	5	73	6	14	14	34	260
17:30	25	53	3	81	4	37	19	60	14	35	5	54	0	10	13	23	218
17:45	25	42	3	70	2	39	22	63	9	36	7	52	5	8	16	29	214
Total	99	177	11	287	29	161	91	281	57	158	21	236	15	47	51	113	917
Grand Total	158	309	19	486	51	264	147	462	113	321	34	468	24	85	88	197	1613
Apprch %	32.5	63.6	3.9		11	57.1	31.8		24.1	68.6	7.3		12.2	43.1	44.7		
Total %	9.8	19.2	1.2	30.1	3.2	16.4	9.1	28.6	7	19.9	2.1	29	1.5	5.3	5.5	12.2	

	6th AV Southbound				KIRKHAM ST Westbound				6th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	23	38	**4**	65	**18**	36	22	76	15	38	4	57	4	**15**	8	27	225
17:15	**26**	44	1	71	5	**49**	**28**	**82**	**19**	**49**	5	**73**	**6**	14	14	**34**	**260**
17:30	25	**53**	3	**81**	4	37	19	60	14	35	5	54	0	10	13	23	218
17:45	25	42	3	70	2	39	22	63	9	36	**7**	52	5	8	**16**	29	214
Total Volume	99	177	11	287	29	161	91	281	57	158	21	236	15	47	51	113	917
% App. Total	34.5	61.7	3.8		10.3	57.3	32.4		24.2	66.9	8.9		13.3	41.6	45.1		
PHF	.952	.835	.688	.886	.403	.821	.813	.857	.750	.806	.750	.808	.625	.783	.797	.831	.882



MARKS TRAFFIC DATA

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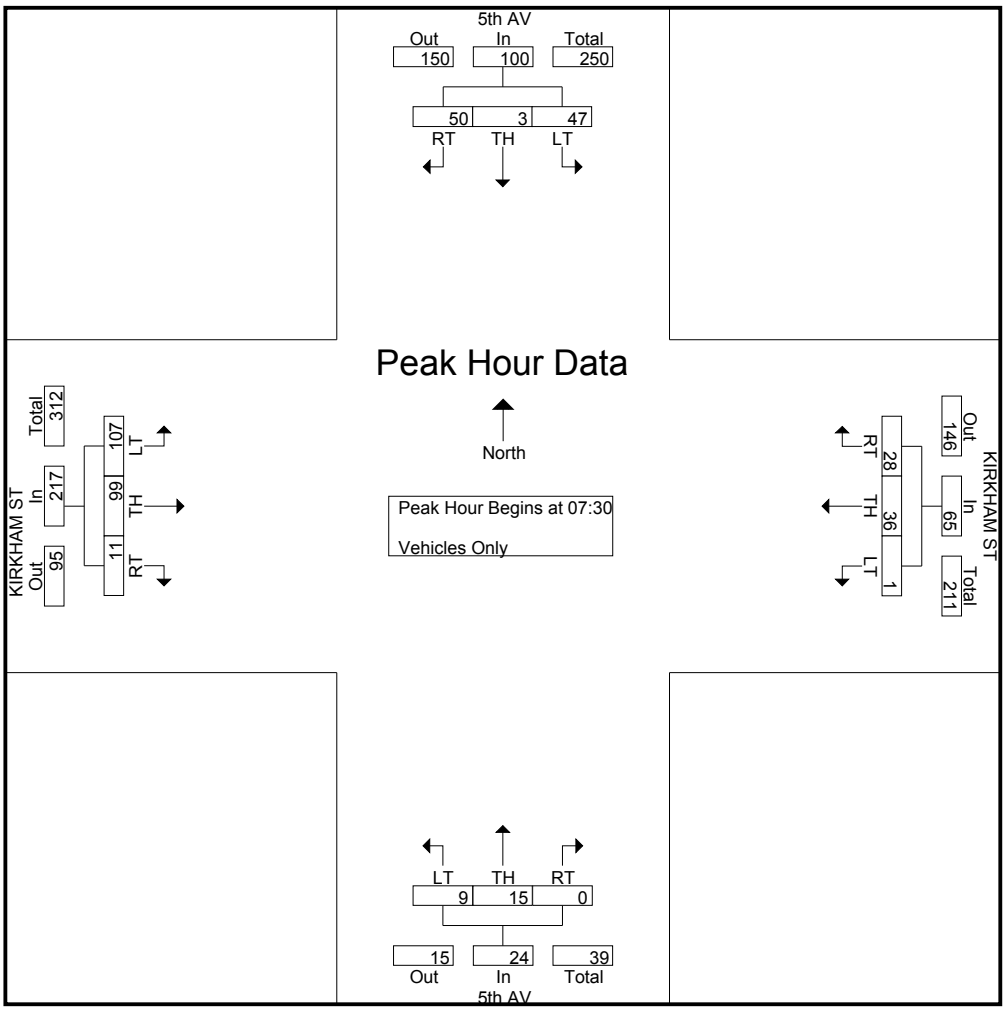
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 5-kirkham-a
Site Code : 3
Start Date : 5/23/2013
Page No : 1

Groups Printed- Vehicles Only

	5th AV Southbound				KIRKHAM ST Westbound				5th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	10	0	9	19	3	6	0	9	0	0	0	0	0	16	12	28	56
07:15	10	0	0	10	5	1	0	6	1	2	2	5	2	11	11	24	45
07:30	11	0	9	20	4	9	0	13	0	4	1	5	1	18	29	48	86
07:45	14	0	18	32	3	8	1	12	0	2	2	4	4	21	25	50	98
Total	45	0	36	81	15	24	1	40	1	8	5	14	7	66	77	150	285
08:00	13	2	13	28	9	11	0	20	0	8	3	11	4	25	20	49	108
08:15	12	1	7	20	12	8	0	20	0	1	3	4	2	35	33	70	114
08:30	9	2	9	20	3	13	0	16	0	0	2	2	1	22	11	34	72
08:45	9	1	9	19	6	9	0	15	1	1	2	4	3	26	20	49	87
Total	43	6	38	87	30	41	0	71	1	10	10	21	10	108	84	202	381
Grand Total	88	6	74	168	45	65	1	111	2	18	15	35	17	174	161	352	666
Apprch %	52.4	3.6	44		40.5	58.6	0.9		5.7	51.4	42.9		4.8	49.4	45.7		
Total %	13.2	0.9	11.1	25.2	6.8	9.8	0.2	16.7	0.3	2.7	2.3	5.3	2.6	26.1	24.2	52.9	

	5th AV Southbound				KIRKHAM ST Westbound				5th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	11	0	9	20	4	9	0	13	0	4	1	5	1	18	29	48	86
07:45	**14**	0	**18**	**32**	3	8	**1**	12	0	2	2	4	**4**	21	25	50	98
08:00	13	**2**	13	28	9	**11**	0	**20**	0	**8**	**3**	**11**	4	25	20	49	108
08:15	12	1	7	20	**12**	8	0	20	0	1	3	4	2	**35**	**33**	**70**	**114**
Total Volume	50	3	47	100	28	36	1	65	0	15	9	24	11	99	107	217	406
% App. Total	50	3	47		43.1	55.4	1.5		0	62.5	37.5		5.1	45.6	49.3		
PHF	.893	.375	.653	.781	.583	.818	.250	.813	.000	.469	.750	.545	.688	.707	.811	.775	.890



MARKS TRAFFIC DATA
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CITY OF SAN FRANCISCO

File Name : 5-kirkham-p
Site Code : 12
Start Date : 10/5/2011
Page No : 1

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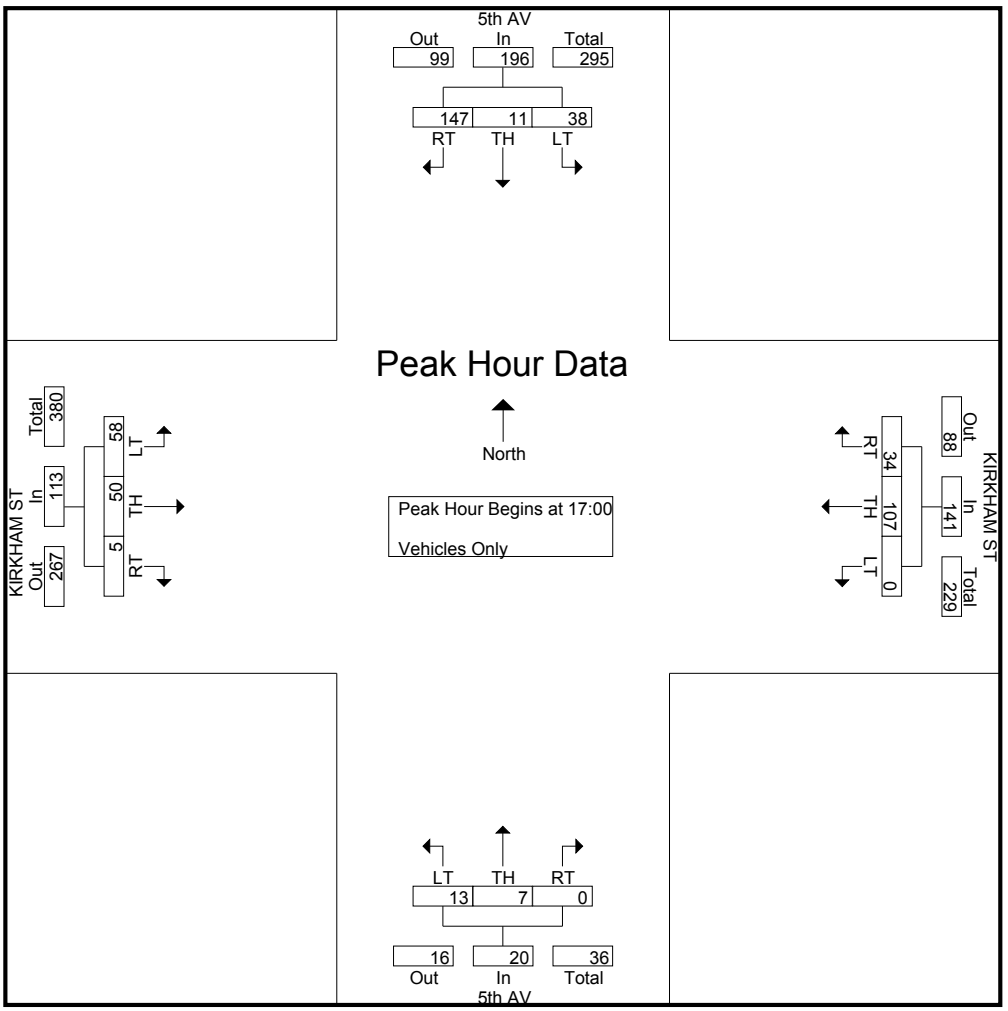
Groups Printed- Vehicles Only

	5th AV Southbound				KIRKHAM ST Westbound				5th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	23	2	2	27	6	12	0	18	3	0	3	6	1	5	11	17	68
16:15	16	2	4	22	5	15	0	20	0	1	2	3	3	13	17	33	78
16:30	35	0	5	40	7	19	0	26	0	1	0	1	1	12	7	20	87
16:45	23	0	7	30	5	27	0	32	0	0	4	4	4	17	10	31	97
Total	97	4	18	119	23	73	0	96	3	2	9	14	9	47	45	101	330
17:00	37	5	9	51	6	34	0	40	0	1	5	6	0	15	17	32	129
17:15	51	3	9	63	8	24	0	32	0	2	3	5	0	12	24	36	136
17:30	24	1	13	38	12	26	0	38	0	3	3	6	3	14	8	25	107
17:45	35	2	7	44	8	23	0	31	0	1	2	3	2	9	9	20	98
Total	147	11	38	196	34	107	0	141	0	7	13	20	5	50	58	113	470
Grand Total	244	15	56	315	57	180	0	237	3	9	22	34	14	97	103	214	800
Apprch %	77.5	4.8	17.8		24.1	75.9	0		8.8	26.5	64.7		6.5	45.3	48.1		
Total %	30.5	1.9	7	39.4	7.1	22.5	0	29.6	0.4	1.1	2.8	4.2	1.8	12.1	12.9	26.8	

	5th AV Southbound				KIRKHAM ST Westbound				5th AV Northbound				KIRKHAM ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	37	**5**	9	51	6	**34**	0	**40**	0	1	**5**	**6**	0	**15**	17	32	129
17:15	**51**	3	9	**63**	8	24	0	32	0	2	3	5	0	12	**24**	**36**	**136**
17:30	24	1	**13**	38	**12**	26	0	38	0	**3**	3	6	**3**	14	8	25	107
17:45	35	2	7	44	8	23	0	31	0	1	2	3	2	9	9	20	98
Total Volume	147	11	38	196	34	107	0	141	0	7	13	20	5	50	58	113	470
% App. Total	75	5.6	19.4		24.1	75.9	0		0	35	65		4.4	44.2	51.3		
PHF	.721	.550	.731	.778	.708	.787	.000	.881	.000	.583	.650	.833	.417	.833	.604	.785	.864



MARKS TRAFFIC DATA

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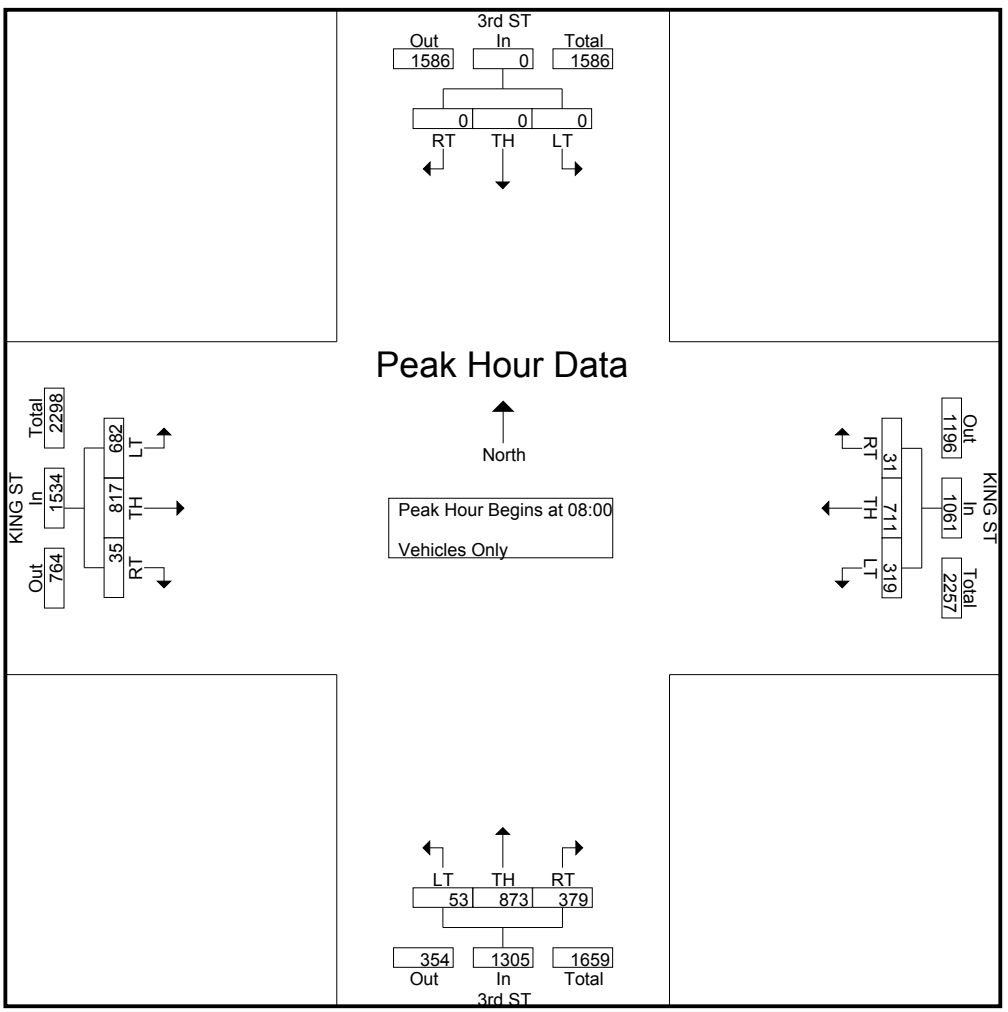
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-king-a
Site Code : 1
Start Date : 4/9/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd ST Southbound				KING ST Westbound				3rd ST Northbound				KING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	0	0	0	5	166	60	231	27	70	8	105	5	179	164	348	684
07:15	0	0	0	0	4	164	70	238	61	145	10	216	5	190	152	347	801
07:30	0	0	0	0	9	213	78	300	60	170	8	238	4	253	174	431	969
07:45	0	0	0	0	6	188	77	271	73	186	18	277	5	229	166	400	948
Total	0	0	0	0	24	731	285	1040	221	571	44	836	19	851	656	1526	3402
08:00	0	0	0	0	8	177	68	253	83	215	13	311	8	186	172	366	930
08:15	0	0	0	0	5	208	76	289	87	215	17	319	9	235	186	430	1038
08:30	0	0	0	0	12	162	94	268	90	224	9	323	8	190	180	378	969
08:45	0	0	0	0	6	164	81	251	119	219	14	352	10	206	144	360	963
Total	0	0	0	0	31	711	319	1061	379	873	53	1305	35	817	682	1534	3900
Grand Total	0	0	0	0	55	1442	604	2101	600	1444	97	2141	54	1668	1338	3060	7302
Apprch %	0	0	0		2.6	68.6	28.7		28	67.4	4.5		1.8	54.5	43.7		
Total %	0	0	0	0	0.8	19.7	8.3	28.8	8.2	19.8	1.3	29.3	0.7	22.8	18.3	41.9	

	3rd ST Southbound				KING ST Westbound				3rd ST Northbound				KING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	0	0	0	0	8	177	68	253	83	215	13	311	8	186	172	366	930
08:15	0	0	0	0	5	**208**	76	**289**	87	215	**17**	319	9	**235**	**186**	**430**	**1038**
08:30	0	0	0	0	**12**	162	**94**	268	90	**224**	9	323	8	190	180	378	969
08:45	0	0	0	0	6	164	81	251	**119**	219	14	**352**	**10**	206	144	360	963
Total Volume	0	0	0	0	31	711	319	1061	379	873	53	1305	35	817	682	1534	3900
% App. Total	0	0	0		2.9	67	30.1		29	66.9	4.1		2.3	53.3	44.5		
PHF	.000	.000	.000	.000	.646	.855	.848	.918	.796	.974	.779	.927	.875	.869	.917	.892	.939



MARKS TRAFFIC DATA

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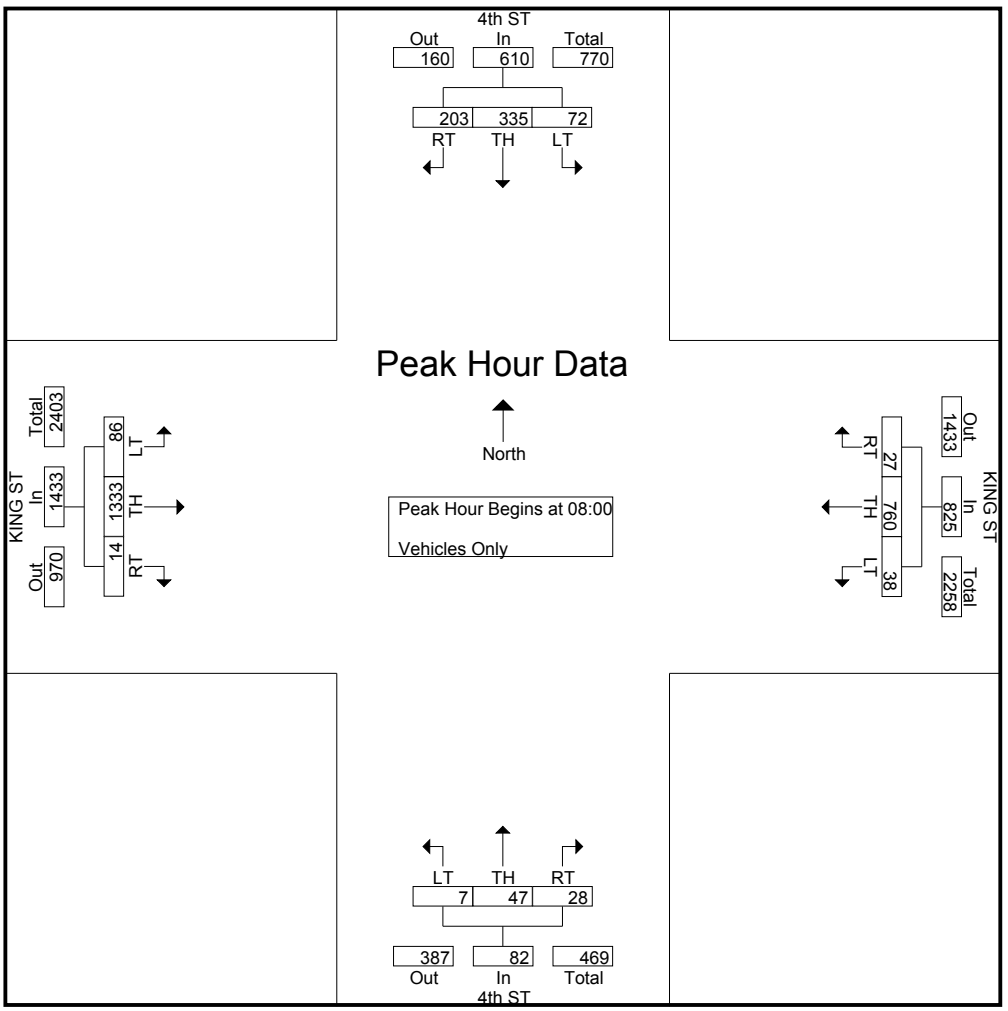
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-king-a
Site Code : 2
Start Date : 4/10/2013
Page No : 1

Groups Printed- Vehicles Only

	4th ST Southbound				KING ST Westbound				4th ST Northbound				KING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	44	51	21	116	3	166	10	179	5	4	3	12	2	371	14	387	694
07:15	29	51	8	88	6	179	7	192	6	8	1	15	5	357	21	383	678
07:30	50	70	9	129	4	174	5	183	9	9	3	21	5	340	14	359	692
07:45	45	58	13	116	10	192	9	211	4	9	5	18	3	333	19	355	700
Total	168	230	51	449	23	711	31	765	24	30	12	66	15	1401	68	1484	2764
08:00	53	73	20	146	9	209	8	226	7	12	2	21	5	375	21	401	794
08:15	52	77	16	145	3	190	9	202	9	10	0	19	5	338	19	362	728
08:30	47	88	17	152	5	179	7	191	9	18	1	28	3	312	28	343	714
08:45	51	97	19	167	10	182	14	206	3	7	4	14	1	308	18	327	714
Total	203	335	72	610	27	760	38	825	28	47	7	82	14	1333	86	1433	2950
Grand Total	371	565	123	1059	50	1471	69	1590	52	77	19	148	29	2734	154	2917	5714
Apprch %	35	53.4	11.6		3.1	92.5	4.3		35.1	52	12.8		1	93.7	5.3		
Total %	6.5	9.9	2.2	18.5	0.9	25.7	1.2	27.8	0.9	1.3	0.3	2.6	0.5	47.8	2.7	51.1	

	4th ST Southbound				KING ST Westbound				4th ST Northbound				KING ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	**53**	73	**20**	146	9	**209**	8	**226**	7	12	2	21	**5**	**375**	21	**401**	**794**
08:15	52	77	16	145	3	190	9	202	**9**	10	0	19	5	338	19	362	728
08:30	47	88	17	152	5	179	7	191	9	**18**	1	**28**	3	312	**28**	343	714
08:45	51	**97**	19	**167**	**10**	182	**14**	206	3	7	**4**	14	1	308	18	327	714
Total Volume	203	335	72	610	27	760	38	825	28	47	7	82	14	1333	86	1433	2950
% App. Total	33.3	54.9	11.8		3.3	92.1	4.6		34.1	57.3	8.5		1	93	6		
PHF	.958	.863	.900	.913	.675	.909	.679	.913	.778	.653	.438	.732	.700	.889	.768	.893	.929



MARKS TRAFFIC DATA

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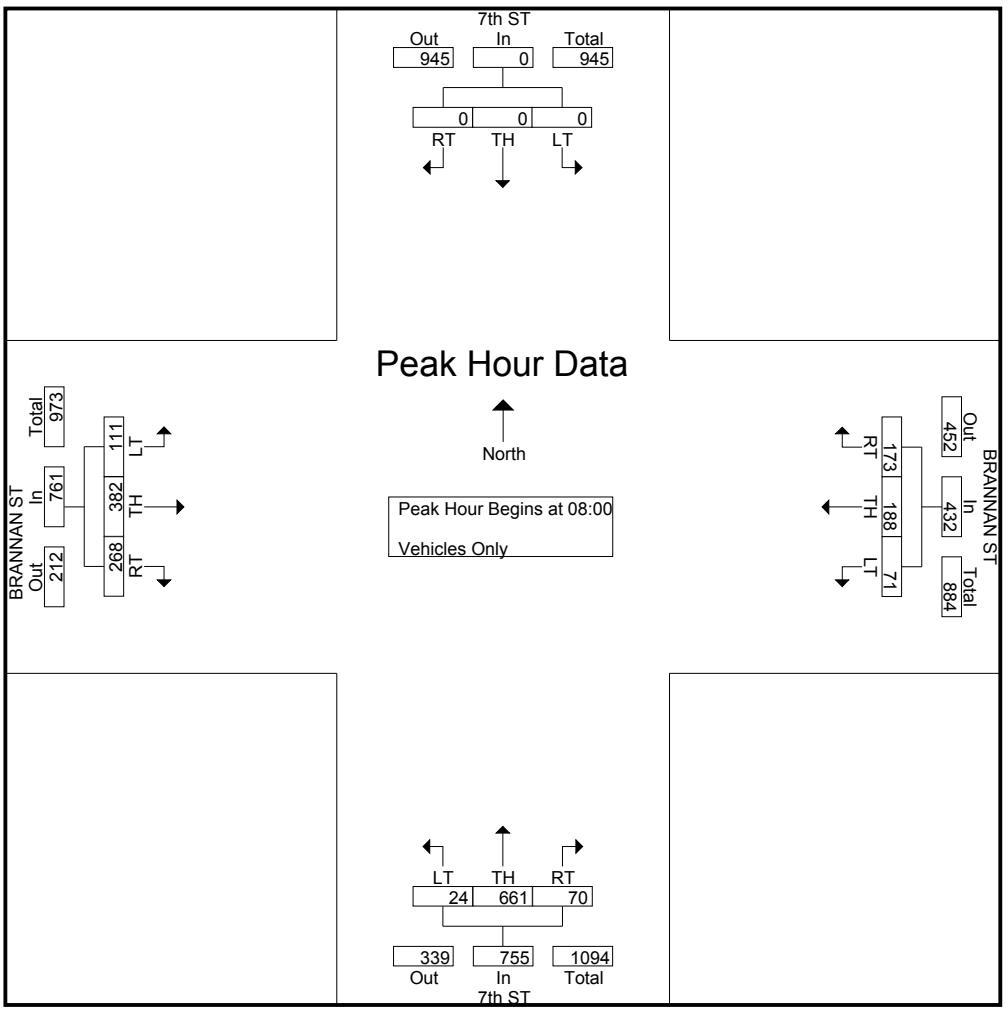
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-brannan-a
Site Code : 00000000
Start Date : 5/29/2013
Page No : 1

Groups Printed- Vehicles Only

	7th ST Southbound				BRANNAN ST Westbound				7th ST Northbound				BRANNAN ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	0	0	0	26	29	15	70	3	63	7	73	32	48	14	94	237
07:15	0	0	0	0	27	33	21	81	7	96	6	109	36	49	20	105	295
07:30	0	0	0	0	29	34	20	83	8	172	5	185	34	70	18	122	390
07:45	0	0	0	0	29	57	18	104	12	146	3	161	38	95	25	158	423
Total	0	0	0	0	111	153	74	338	30	477	21	528	140	262	77	479	1345
08:00	0	0	0	0	40	47	19	106	15	154	5	174	57	95	25	177	457
08:15	0	0	0	0	38	46	18	102	18	163	8	189	63	90	27	180	471
08:30	0	0	0	0	44	48	17	109	21	176	6	203	69	82	30	181	493
08:45	0	0	0	0	51	47	17	115	16	168	5	189	79	115	29	223	527
Total	0	0	0	0	173	188	71	432	70	661	24	755	268	382	111	761	1948
Grand Total	0	0	0	0	284	341	145	770	100	1138	45	1283	408	644	188	1240	3293
Apprch %	0	0	0		36.9	44.3	18.8		7.8	88.7	3.5		32.9	51.9	15.2		
Total %	0	0	0	0	8.6	10.4	4.4	23.4	3	34.6	1.4	39	12.4	19.6	5.7	37.7	

	7th ST Southbound				BRANNAN ST Westbound				7th ST Northbound				BRANNAN ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	0	0	0	0	40	47	**19**	106	15	154	5	174	57	95	25	177	457
08:15	0	0	0	0	38	46	18	102	18	163	**8**	189	63	90	27	180	471
08:30	0	0	0	0	44	**48**	17	109	**21**	**176**	6	**203**	69	82	**30**	181	493
08:45	0	0	0	0	**51**	47	17	**115**	16	168	5	189	**79**	**115**	29	**223**	**527**
Total Volume	0	0	0	0	173	188	71	432	70	661	24	755	268	382	111	761	1948
% App. Total	0	0	0		40	43.5	16.4		9.3	87.5	3.2		35.2	50.2	14.6		
PHF	.000	.000	.000	.000	.848	.979	.934	.939	.833	.939	.750	.930	.848	.830	.925	.853	.924



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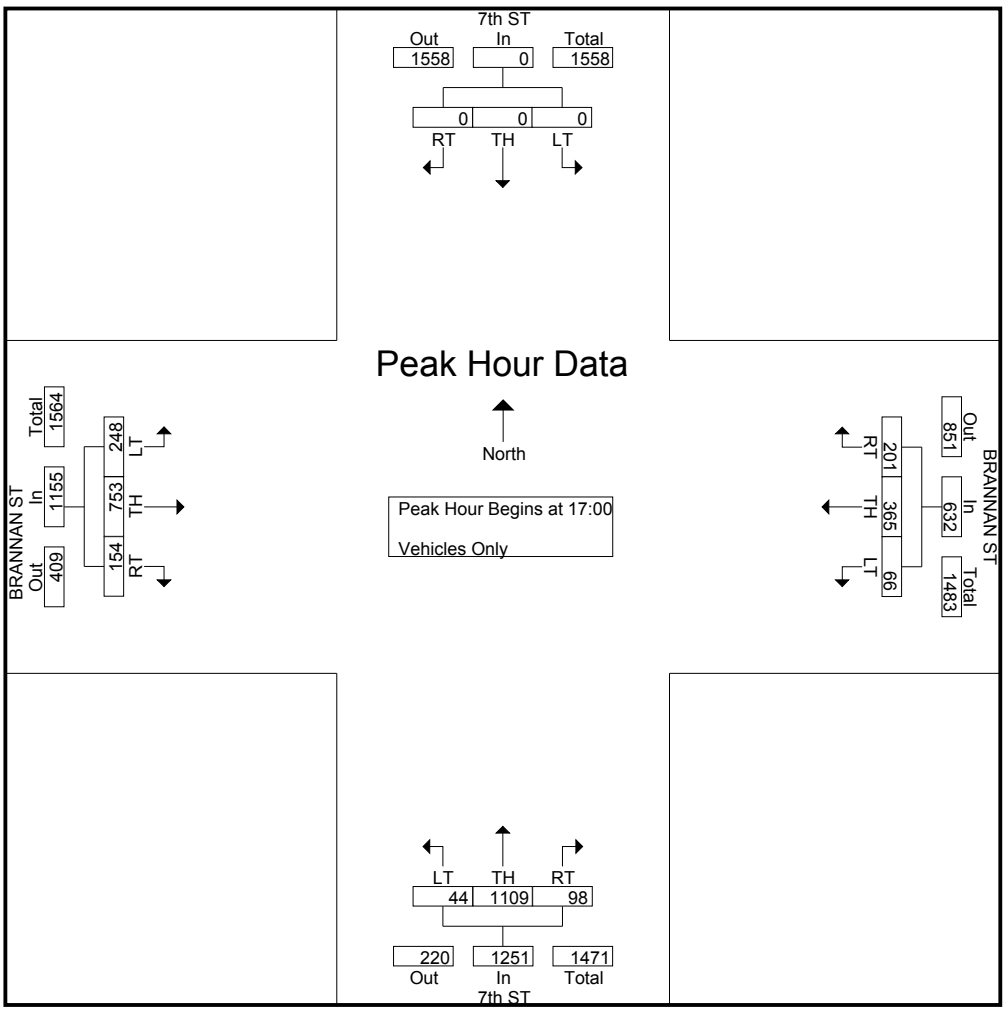
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-brannan-p
Site Code : 00000000
Start Date : 5/29/2013
Page No : 1

Groups Printed- Vehicles Only

	7th ST Southbound				BRANNAN ST Westbound				7th ST Northbound				BRANNAN ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	0	0	0	0	45	66	15	126	18	221	13	252	23	168	49	240	618
16:15	0	0	0	0	45	66	18	129	17	226	8	251	31	149	66	246	626
16:30	0	0	0	0	59	81	13	153	22	228	8	258	31	173	59	263	674
16:45	0	0	0	0	42	75	17	134	28	243	8	279	38	172	55	265	678
Total	0	0	0	0	191	288	63	542	85	918	37	1040	123	662	229	1014	2596
17:00	0	0	0	0	48	79	13	140	22	260	14	296	26	210	71	307	743
17:15	0	0	0	0	48	97	17	162	35	293	14	342	38	177	61	276	780
17:30	0	0	0	0	53	93	16	162	22	281	7	310	40	169	67	276	748
17:45	0	0	0	0	52	96	20	168	19	275	9	303	50	197	49	296	767
Total	0	0	0	0	201	365	66	632	98	1109	44	1251	154	753	248	1155	3038
Grand Total	0	0	0	0	392	653	129	1174	183	2027	81	2291	277	1415	477	2169	5634
Apprch %	0	0	0		33.4	55.6	11		8	88.5	3.5		12.8	65.2	22		
Total %	0	0	0	0	7	11.6	2.3	20.8	3.2	36	1.4	40.7	4.9	25.1	8.5	38.5	

	7th ST Southbound				BRANNAN ST Westbound				7th ST Northbound				BRANNAN ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	0	0	0	48	79	13	140	22	260	**14**	296	26	**210**	**71**	**307**	743
17:15	0	0	0	0	48	**97**	17	162	**35**	**293**	14	**342**	38	177	61	276	**780**
17:30	0	0	0	0	**53**	93	16	162	22	281	7	310	40	169	67	276	748
17:45	0	0	0	0	52	96	**20**	**168**	19	275	9	303	**50**	197	49	296	767
Total Volume	0	0	0	0	201	365	66	632	98	1109	44	1251	154	753	248	1155	3038
% App. Total	0	0	0		31.8	57.8	10.4		7.8	88.6	3.5		13.3	65.2	21.5		
PHF	.000	.000	.000	.000	.948	.941	.825	.940	.700	.946	.786	.914	.770	.896	.873	.941	.974



MARKS TRAFFIC DATA

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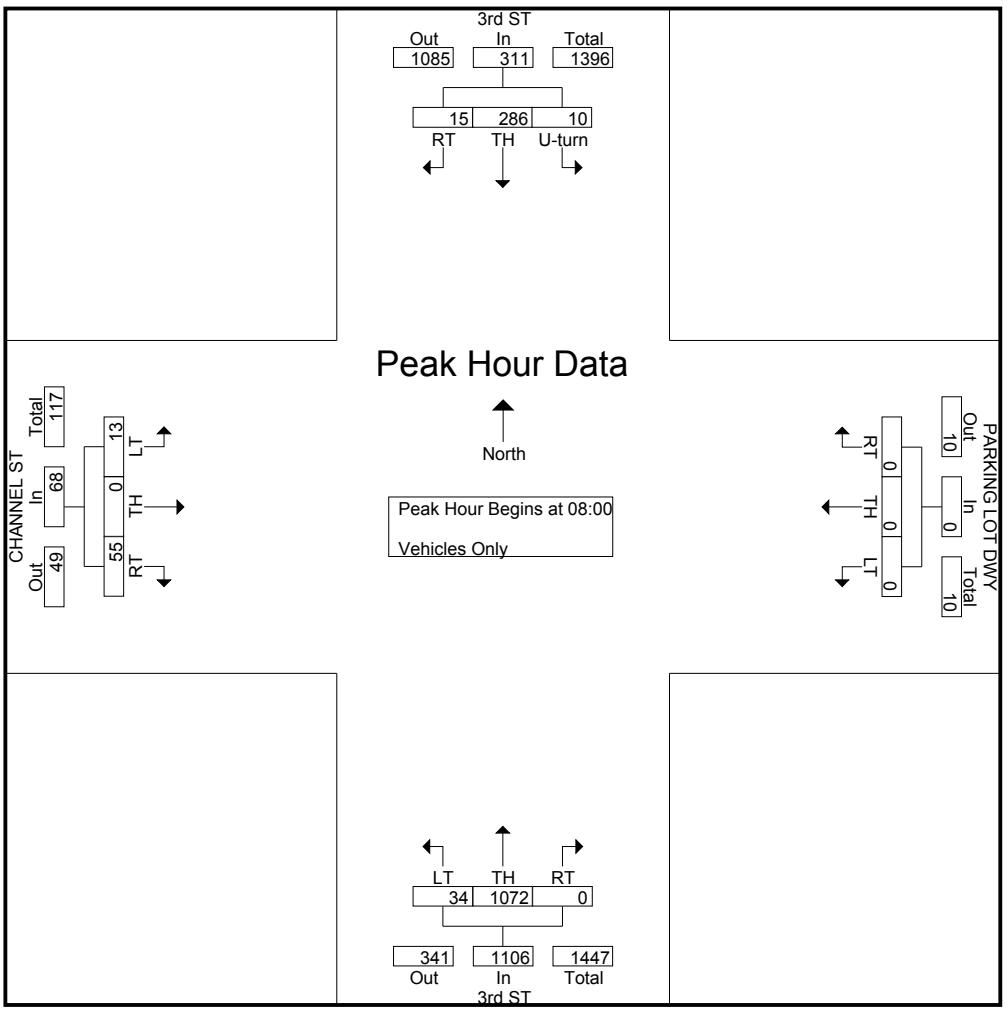
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-channel-a
Site Code : 3
Start Date : 5/8/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd ST Southbound				PARKING LOT DWY Westbound				3rd ST Northbound				CHANNEL ST Eastbound				
Start Time	RT	TH	U-turn	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	2	43	2	47	0	0	0	0	0	90	3	93	10	0	1	11	151
07:15	3	38	2	43	0	0	0	0	0	116	3	119	3	0	2	5	167
07:30	2	62	2	66	0	0	0	0	0	159	3	162	12	0	3	15	243
07:45	2	68	4	74	0	0	0	0	0	215	8	223	8	0	3	11	308
Total	9	211	10	230	0	0	0	0	0	580	17	597	33	0	9	42	869
08:00	5	60	2	67	0	0	0	0	0	256	11	267	20	0	1	21	355
08:15	1	71	0	72	0	0	0	0	0	264	5	269	10	0	0	10	351
08:30	3	78	0	81	0	0	0	0	0	255	7	262	8	0	5	13	356
08:45	6	77	8	91	0	0	0	0	0	297	11	308	17	0	7	24	423
Total	15	286	10	311	0	0	0	0	0	1072	34	1106	55	0	13	68	1485
Grand Total	24	497	20	541	0	0	0	0	0	1652	51	1703	88	0	22	110	2354
Apprch %	4.4	91.9	3.7		0	0	0		0	97	3		80	0	20		
Total %	1	21.1	0.8	23	0	0	0	0	0	70.2	2.2	72.3	3.7	0	0.9	4.7	

	3rd ST Southbound				PARKING LOT DWY Westbound				3rd ST Northbound				CHANNEL ST Eastbound				
Start Time	RT	TH	U-turn	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	5	60	2	67	0	0	0	0	0	256	**11**	267	**20**	0	1	21	355
08:15	1	71	0	72	0	0	0	0	0	264	5	269	10	0	0	10	351
08:30	3	**78**	0	81	0	0	0	0	0	255	7	262	8	0	5	13	356
08:45	**6**	77	**8**	**91**	0	0	0	0	0	**297**	11	**308**	17	0	**7**	**24**	**423**
Total Volume	15	286	10	311	0	0	0	0	0	1072	34	1106	55	0	13	68	1485
% App. Total	4.8	92	3.2		0	0	0		0	96.9	3.1		80.9	0	19.1		
PHF	.625	.917	.313	.854	.000	.000	.000	.000	.000	.902	.773	.898	.688	.000	.464	.708	.878



MARKS TRAFFIC DATA

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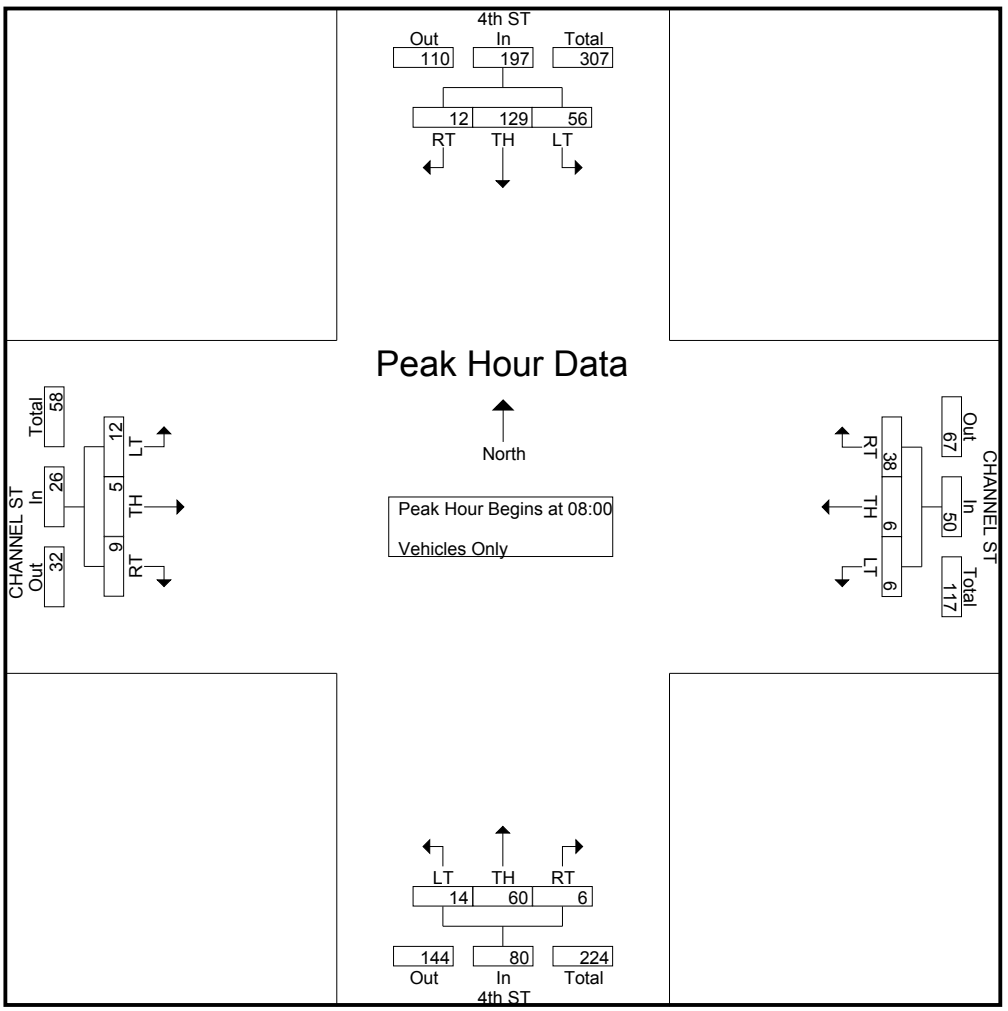
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-channel-a
Site Code : 4
Start Date : 5/8/2013
Page No : 1

Groups Printed- Vehicles Only

	4th ST Southbound				CHANNEL ST Westbound				4th ST Northbound				CHANNEL ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	7	24	8	39	2	2	0	4	2	10	2	14	2	1	4	7	64
07:15	7	21	5	33	2	2	2	6	3	9	2	14	4	1	2	7	60
07:30	2	20	7	29	2	2	1	5	1	5	2	8	3	4	2	9	51
07:45	1	27	10	38	7	1	1	9	2	7	2	11	4	1	5	10	68
Total	17	92	30	139	13	7	4	24	8	31	8	47	13	7	13	33	243
08:00	1	31	16	48	13	2	2	17	1	17	4	22	2	2	2	6	93
08:15	2	35	12	49	6	0	1	7	0	13	2	15	1	0	4	5	76
08:30	2	35	13	50	8	1	1	10	1	14	2	17	1	0	2	3	80
08:45	7	28	15	50	11	3	2	16	4	16	6	26	5	3	4	12	104
Total	12	129	56	197	38	6	6	50	6	60	14	80	9	5	12	26	353
Grand Total	29	221	86	336	51	13	10	74	14	91	22	127	22	12	25	59	596
Apprch %	8.6	65.8	25.6		68.9	17.6	13.5		11	71.7	17.3		37.3	20.3	42.4		
Total %	4.9	37.1	14.4	56.4	8.6	2.2	1.7	12.4	2.3	15.3	3.7	21.3	3.7	2	4.2	9.9	

	4th ST Southbound				CHANNEL ST Westbound				4th ST Northbound				CHANNEL ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	1	31	**16**	48	**13**	2	**2**	**17**	1	**17**	4	22	2	2	2	6	93
08:15	2	**35**	12	49	6	0	1	7	0	13	2	15	1	0	**4**	5	76
08:30	2	35	13	**50**	8	1	1	10	1	14	2	17	1	0	2	3	80
08:45	**7**	28	15	50	11	**3**	2	16	**4**	16	**6**	**26**	**5**	**3**	4	**12**	**104**
Total Volume	12	129	56	197	38	6	6	50	6	60	14	80	9	5	12	26	353
% App. Total	6.1	65.5	28.4		76	12	12		7.5	75	17.5		34.6	19.2	46.2		
PHF	.429	.921	.875	.985	.731	.500	.750	.735	.375	.882	.583	.769	.450	.417	.750	.542	.849



MARKS TRAFFIC DATA

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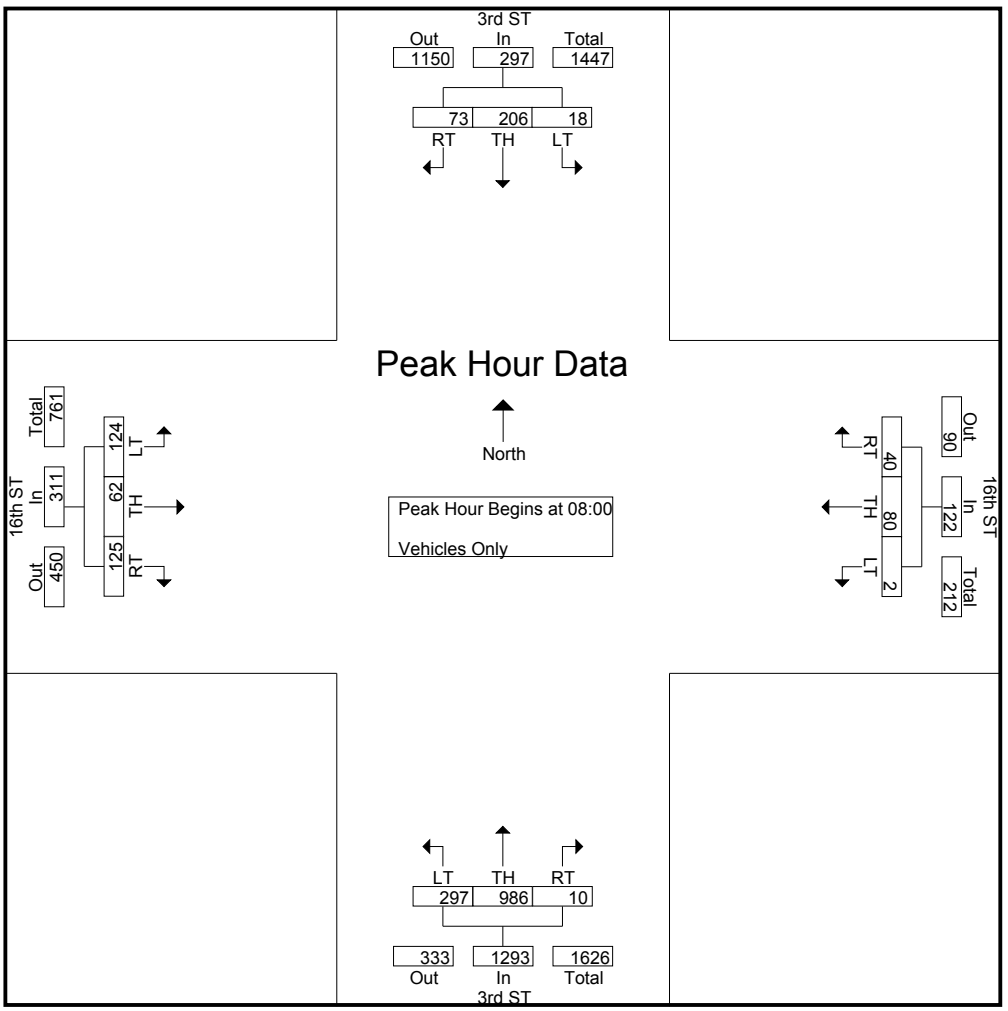
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-16-a
Site Code : 10
Start Date : 5/8/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd ST Southbound				16th ST Westbound				3rd ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	17	25	3	45	5	11	0	16	1	92	46	139	24	4	7	35	235
07:15	11	31	4	46	3	9	0	12	1	103	75	179	24	8	16	48	285
07:30	24	38	1	63	8	22	0	30	1	172	86	259	26	7	21	54	406
07:45	26	42	1	69	14	24	0	38	2	202	68	272	21	11	20	52	431
Total	78	136	9	223	30	66	0	96	5	569	275	849	95	30	64	189	1357
08:00	15	47	4	66	13	21	1	35	3	246	68	317	25	19	21	65	483
08:15	19	60	5	84	4	23	1	28	1	237	89	327	29	17	24	70	509
08:30	20	43	6	69	9	20	0	29	1	261	81	343	36	13	36	85	526
08:45	19	56	3	78	14	16	0	30	5	242	59	306	35	13	43	91	505
Total	73	206	18	297	40	80	2	122	10	986	297	1293	125	62	124	311	2023
Grand Total	151	342	27	520	70	146	2	218	15	1555	572	2142	220	92	188	500	3380
Apprch %	29	65.8	5.2		32.1	67	0.9		0.7	72.6	26.7		44	18.4	37.6		
Total %	4.5	10.1	0.8	15.4	2.1	4.3	0.1	6.4	0.4	46	16.9	63.4	6.5	2.7	5.6	14.8	

	3rd ST Southbound				16th ST Westbound				3rd ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	15	47	4	66	13	21	**1**	**35**	3	246	68	317	25	**19**	21	65	483
08:15	19	**60**	5	**84**	4	**23**	1	28	1	237	**89**	327	29	17	24	70	509
08:30	**20**	43	**6**	69	9	20	0	29	1	**261**	81	**343**	**36**	13	36	85	**526**
08:45	19	56	3	78	**14**	16	0	30	**5**	242	59	306	35	13	**43**	**91**	505
Total Volume	73	206	18	297	40	80	2	122	10	986	297	1293	125	62	124	311	2023
% App. Total	24.6	69.4	6.1		32.8	65.6	1.6		0.8	76.3	23		40.2	19.9	39.9		
PHF	.913	.858	.750	.884	.714	.870	.500	.871	.500	.944	.834	.942	.868	.816	.721	.854	.962



MARKS TRAFFIC DATA

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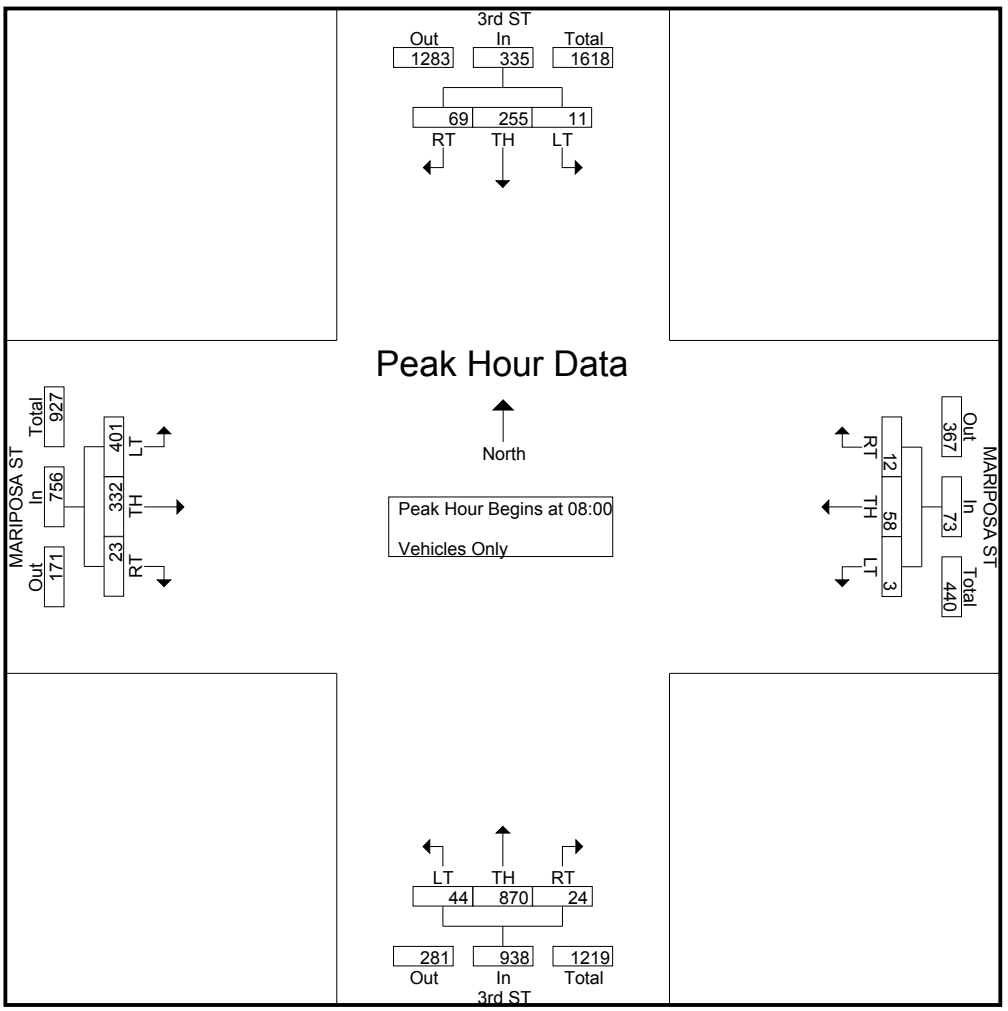
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-mariposa-a
Site Code : 16
Start Date : 5/8/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd ST Southbound				MARIPOSA ST Westbound				3rd ST Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	6	41	1	48	4	8	0	12	0	80	3	83	7	30	56	93	236
07:15	19	40	1	60	1	8	1	10	2	110	4	116	5	40	70	115	301
07:30	17	47	1	65	1	13	1	15	3	153	3	159	2	68	99	169	408
07:45	10	54	1	65	1	11	1	13	2	179	15	196	1	81	111	193	467
Total	52	182	4	238	7	40	3	50	7	522	25	554	15	219	336	570	1412
08:00	15	53	3	71	3	15	2	20	4	203	10	217	6	90	100	196	504
08:15	17	70	3	90	3	14	0	17	8	226	13	247	8	71	105	184	538
08:30	21	60	1	82	5	8	0	13	7	218	10	235	5	77	105	187	517
08:45	16	72	4	92	1	21	1	23	5	223	11	239	4	94	91	189	543
Total	69	255	11	335	12	58	3	73	24	870	44	938	23	332	401	756	2102
Grand Total	121	437	15	573	19	98	6	123	31	1392	69	1492	38	551	737	1326	3514
Apprch %	21.1	76.3	2.6		15.4	79.7	4.9		2.1	93.3	4.6		2.9	41.6	55.6		
Total %	3.4	12.4	0.4	16.3	0.5	2.8	0.2	3.5	0.9	39.6	2	42.5	1.1	15.7	21	37.7	

	3rd ST Southbound				MARIPOSA ST Westbound				3rd ST Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	15	53	3	71	3	15	**2**	20	4	203	10	217	6	90	100	**196**	504
08:15	17	70	3	90	3	14	0	17	**8**	**226**	**13**	**247**	**8**	71	**105**	184	538
08:30	**21**	60	1	82	**5**	8	0	13	7	218	10	235	5	77	105	187	517
08:45	16	**72**	**4**	**92**	1	**21**	1	**23**	5	223	11	239	4	**94**	91	189	**543**
Total Volume	69	255	11	335	12	58	3	73	24	870	44	938	23	332	401	756	2102
% App. Total	20.6	76.1	3.3		16.4	79.5	4.1		2.6	92.8	4.7		3	43.9	53		
PHF	.821	.885	.688	.910	.600	.690	.375	.793	.750	.962	.846	.949	.719	.883	.955	.964	.968



MARKS TRAFFIC DATA

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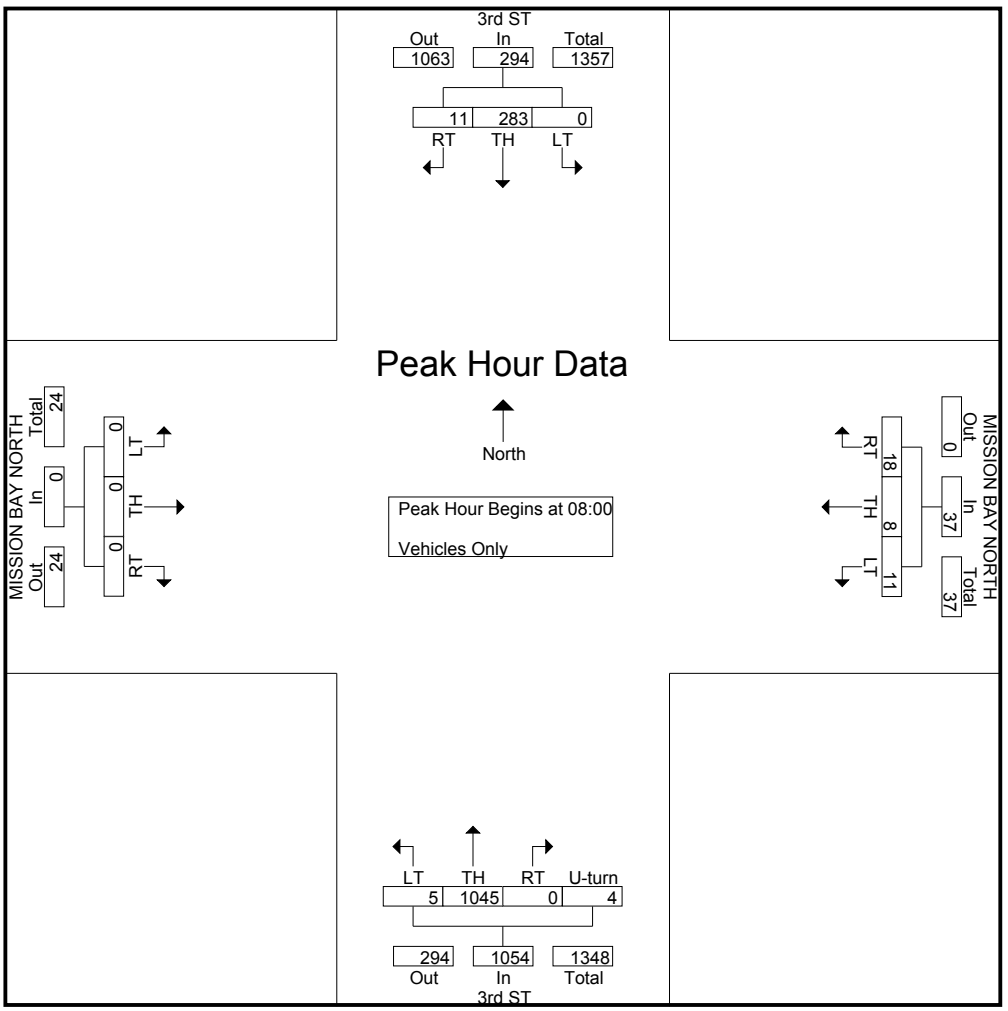
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-mission north-a
Site Code : 8
Start Date : 5/8/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd ST Southbound				MISSION BAY NORTH Westbound				3rd ST Northbound					MISSION BAY NORTH Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	1	43	0	44	1	0	4	5	0	93	1	0	94	0	0	0	0	143
07:15	2	42	0	44	8	1	5	14	0	120	0	1	121	0	0	0	0	179
07:30	4	58	0	62	2	2	9	13	0	185	2	0	187	0	0	0	0	262
07:45	1	70	0	71	3	1	7	11	0	220	4	1	225	0	0	0	0	307
Total	8	213	0	221	14	4	25	43	0	618	7	2	627	0	0	0	0	891
08:00	2	72	0	74	4	4	4	12	0	261	0	1	262	0	0	0	0	348
08:15	1	63	0	64	7	0	5	12	0	230	0	1	231	0	0	0	0	307
08:30	3	76	0	79	6	3	0	9	0	279	5	0	284	0	0	0	0	372
08:45	5	72	0	77	1	1	2	4	0	275	0	2	277	0	0	0	0	358
Total	11	283	0	294	18	8	11	37	0	1045	5	4	1054	0	0	0	0	1385
Grand Total	19	496	0	515	32	12	36	80	0	1663	12	6	1681	0	0	0	0	2276
Apprch %	3.7	96.3	0		40	15	45		0	98.9	0.7	0.4		0	0	0		
Total %	0.8	21.8	0	22.6	1.4	0.5	1.6	3.5	0	73.1	0.5	0.3	73.9	0	0	0	0	

	3rd ST Southbound				MISSION BAY NORTH Westbound				3rd ST Northbound					MISSION BAY NORTH Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:00																		
08:00	2	72	0	74	4	**4**	4	**12**	0	261	0	1	262	0	0	0	0	348
08:15	1	63	0	64	**7**	0	**5**	12	0	230	0	1	231	0	0	0	0	307
08:30	3	**76**	0	**79**	6	3	0	9	0	**279**	**5**	0	**284**	0	0	0	0	**372**
08:45	**5**	72	0	77	1	1	2	4	0	275	0	**2**	277	0	0	0	0	358
Total Volume	11	283	0	294	18	8	11	37	0	1045	5	4	1054	0	0	0	0	1385
% App. Total	3.7	96.3	0		48.6	21.6	29.7		0	99.1	0.5	0.4		0	0	0		
PHF	.550	.931	.000	.930	.643	.500	.550	.771	.000	.936	.250	.500	.928	.000	.000	.000	.000	.931



MARKS TRAFFIC DATA

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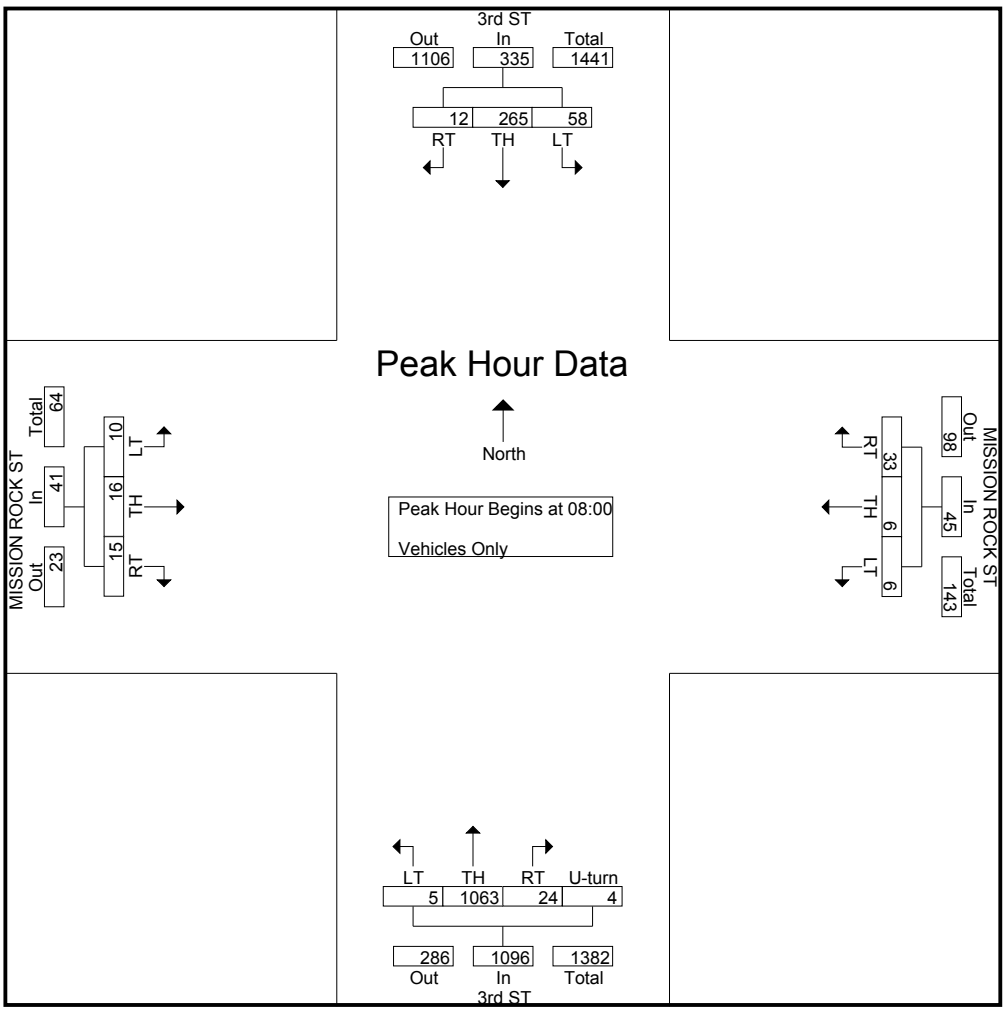
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-mission rock-a
Site Code : 5
Start Date : 5/8/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd ST Southbound				MISSION ROCK ST Westbound				3rd ST Northbound					MISSION ROCK ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	2	41	10	53	3	0	1	4	8	77	8	2	95	2	0	3	5	157
07:15	1	37	6	44	2	1	0	3	2	116	1	0	119	3	1	2	6	172
07:30	6	59	8	73	1	1	2	4	6	169	1	0	176	6	5	1	12	265
07:45	2	63	16	81	11	2	0	13	5	202	2	0	209	4	1	6	11	314
Total	11	200	40	251	17	4	3	24	21	564	12	2	599	15	7	12	34	908
08:00	2	58	18	78	3	0	2	5	2	259	1	1	263	2	5	3	10	356
08:15	4	65	15	84	6	5	1	12	10	254	0	1	265	7	4	2	13	374
08:30	3	70	12	85	10	0	1	11	5	251	2	0	258	3	4	1	8	362
08:45	3	72	13	88	14	1	2	17	7	299	2	2	310	3	3	4	10	425
Total	12	265	58	335	33	6	6	45	24	1063	5	4	1096	15	16	10	41	1517
Grand Total	23	465	98	586	50	10	9	69	45	1627	17	6	1695	30	23	22	75	2425
Apprch %	3.9	79.4	16.7		72.5	14.5	13		2.7	96	1	0.4		40	30.7	29.3		
Total %	0.9	19.2	4	24.2	2.1	0.4	0.4	2.8	1.9	67.1	0.7	0.2	69.9	1.2	0.9	0.9	3.1	

	3rd ST Southbound				MISSION ROCK ST Westbound				3rd ST Northbound					MISSION ROCK ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:00																		
08:00	2	58	**18**	78	3	0	**2**	5	2	259	1	1	263	2	**5**	3	10	356
08:15	**4**	65	15	84	6	**5**	1	12	**10**	254	0	1	265	**7**	4	2	**13**	374
08:30	3	70	12	85	10	0	1	11	5	251	**2**	0	258	3	4	1	8	362
08:45	3	**72**	13	**88**	**14**	1	2	**17**	7	**299**	2	**2**	**310**	3	3	**4**	10	**425**
Total Volume	12	265	58	335	33	6	6	45	24	1063	5	4	1096	15	16	10	41	1517
% App. Total	3.6	79.1	17.3		73.3	13.3	13.3		2.2	97	0.5	0.4		36.6	39	24.4		
PHF	.750	.920	.806	.952	.589	.300	.750	.662	.600	.889	.625	.500	.884	.536	.800	.625	.788	.892



MARKS TRAFFIC DATA

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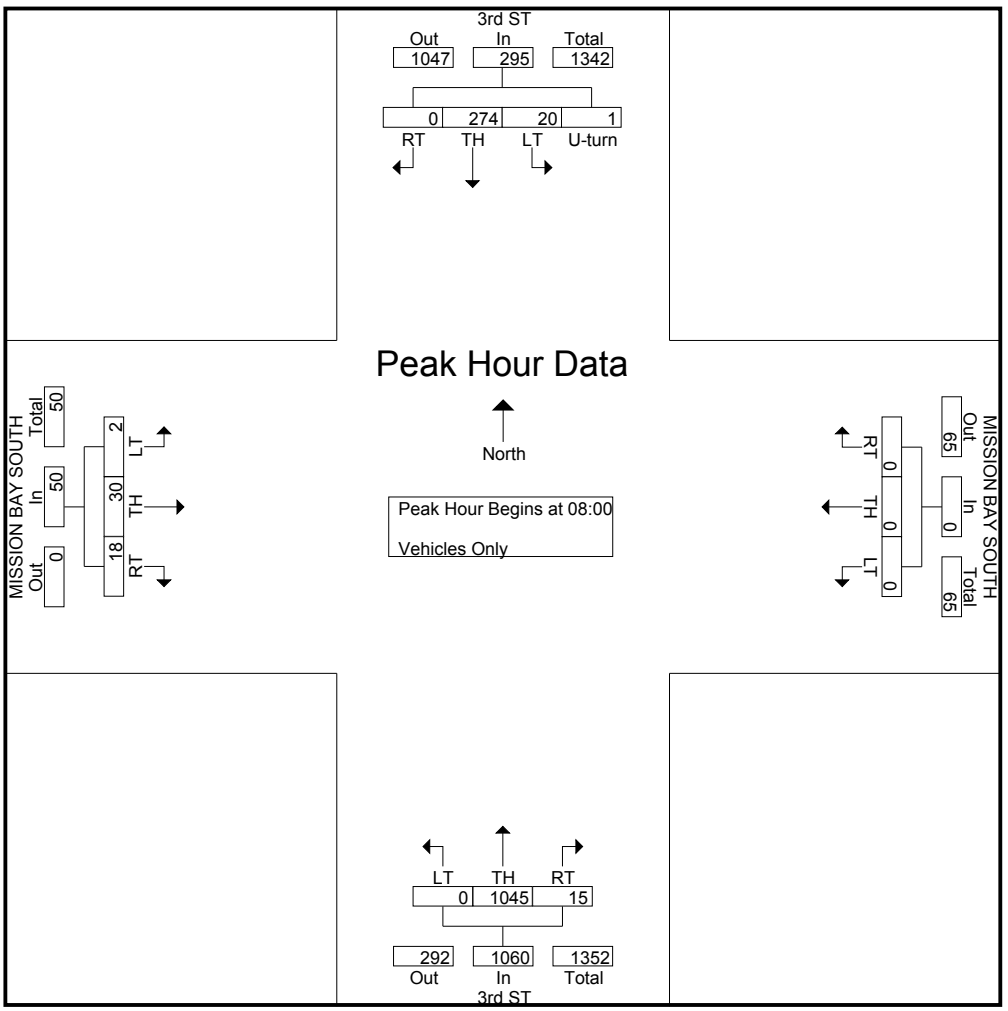
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 3-mission south-a
Site Code : 9
Start Date : 5/8/2013
Page No : 1

Groups Printed- Vehicles Only

	3rd ST Southbound					MISSION BAY SOUTH Westbound				3rd ST Northbound				MISSION BAY SOUTH Eastbound				
Start Time	RT	TH	LT	U-turn	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	41	2	3	46	0	0	0	0	1	93	0	94	2	4	0	6	146
07:15	0	44	1	3	48	0	0	0	0	2	113	0	115	4	2	4	10	173
07:30	0	63	3	2	68	0	0	0	0	6	184	0	190	3	4	0	7	265
07:45	0	77	2	1	80	0	0	0	0	7	221	0	228	2	3	2	7	315
Total	0	225	8	9	242	0	0	0	0	16	611	0	627	11	13	6	30	899
08:00	0	71	4	0	75	0	0	0	0	3	262	0	265	5	9	0	14	354
08:15	0	65	5	0	70	0	0	0	0	5	230	0	235	4	6	0	10	315
08:30	0	70	6	0	76	0	0	0	0	3	276	0	279	5	6	1	12	367
08:45	0	68	5	1	74	0	0	0	0	4	277	0	281	4	9	1	14	369
Total	0	274	20	1	295	0	0	0	0	15	1045	0	1060	18	30	2	50	1405
Grand Total	0	499	28	10	537	0	0	0	0	31	1656	0	1687	29	43	8	80	2304
Apprch %	0	92.9	5.2	1.9		0	0	0		1.8	98.2	0		36.2	53.8	10		
Total %	0	21.7	1.2	0.4	23.3	0	0	0	0	1.3	71.9	0	73.2	1.3	1.9	0.3	3.5	

	3rd ST Southbound					MISSION BAY SOUTH Westbound				3rd ST Northbound				MISSION BAY SOUTH Eastbound				
Start Time	RT	TH	LT	U-turn	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:00																		
08:00	0	**71**	4	0	75	0	0	0	0	3	262	0	265	**5**	**9**	0	**14**	354
08:15	0	65	5	0	70	0	0	0	0	**5**	230	0	235	4	6	0	10	315
08:30	0	70	**6**	0	**76**	0	0	0	0	3	276	0	279	5	6	**1**	12	367
08:45	0	68	5	**1**	74	0	0	0	0	4	**277**	0	**281**	4	9	1	14	**369**
Total Volume	0	274	20	1	295	0	0	0	0	15	1045	0	1060	18	30	2	50	1405
% App. Total	0	92.9	6.8	0.3		0	0	0		1.4	98.6	0		36	60	4		
PHF	.000	.965	.833	.250	.970	.000	.000	.000	.000	.750	.943	.000	.943	.900	.833	.500	.893	.952



MARKS TRAFFIC DATA

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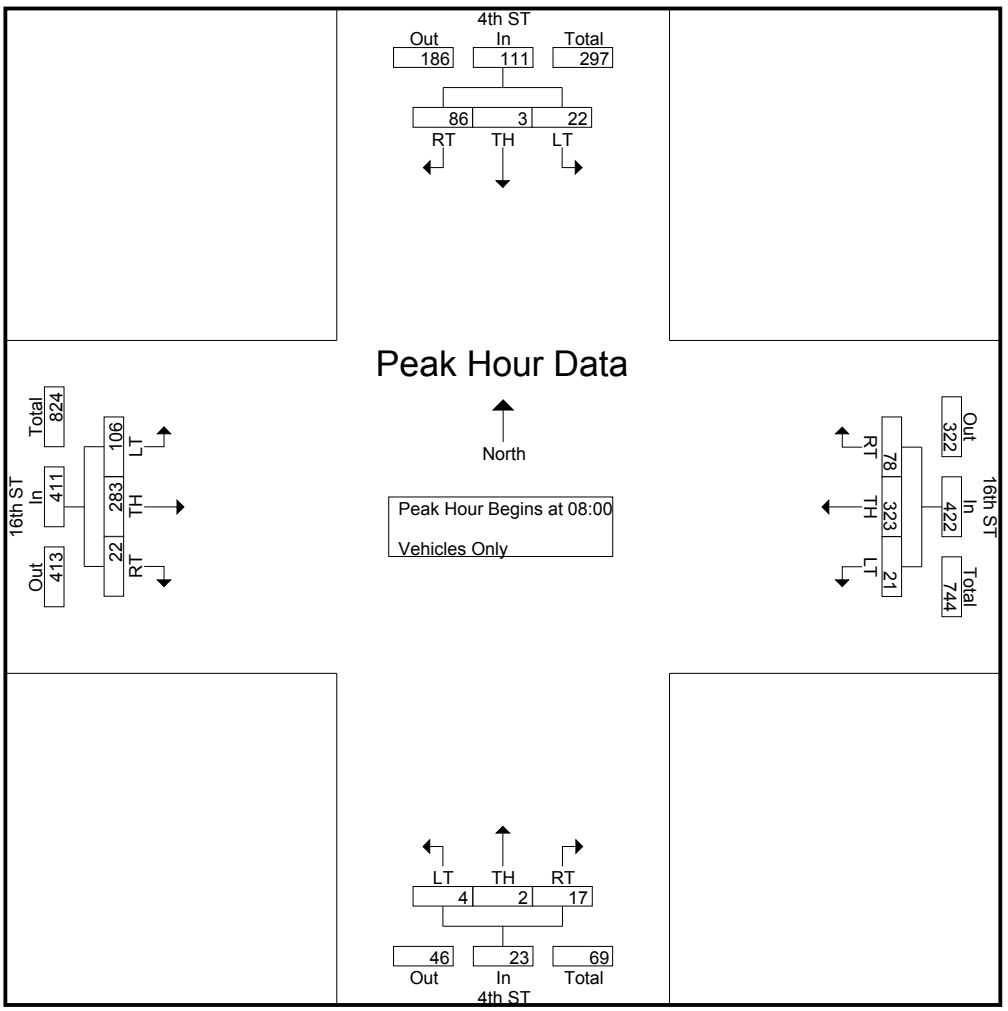
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 4-16-a
Site Code : 11
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	4th ST Southbound				16th ST Westbound				4th ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	7	5	13	25	18	43	16	77	5	0	0	5	15	20	17	52	159
07:15	13	6	9	28	21	41	20	82	2	0	2	4	20	42	17	79	193
07:30	17	2	8	27	21	87	23	131	2	1	2	5	29	50	11	90	253
07:45	8	7	7	22	18	73	19	110	3	1	2	6	13	60	19	92	230
Total	45	20	37	102	78	244	78	400	12	2	6	20	77	172	64	313	835
08:00	26	2	5	33	22	68	7	97	3	0	1	4	10	58	22	90	224
08:15	21	0	6	27	18	87	3	108	6	1	0	7	4	63	29	96	238
08:30	23	1	5	29	15	85	7	107	6	0	3	9	2	77	30	109	254
08:45	16	0	6	22	23	83	4	110	2	1	0	3	6	85	25	116	251
Total	86	3	22	111	78	323	21	422	17	2	4	23	22	283	106	411	967
Grand Total	131	23	59	213	156	567	99	822	29	4	10	43	99	455	170	724	1802
Apprch %	61.5	10.8	27.7		19	69	12		67.4	9.3	23.3		13.7	62.8	23.5		
Total %	7.3	1.3	3.3	11.8	8.7	31.5	5.5	45.6	1.6	0.2	0.6	2.4	5.5	25.2	9.4	40.2	

	4th ST Southbound				16th ST Westbound				4th ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	**26**	**2**	5	**33**	22	68	**7**	97	3	0	1	4	**10**	58	22	90	224
08:15	21	0	**6**	27	18	**87**	3	108	**6**	**1**	0	7	4	63	29	96	238
08:30	23	1	5	29	15	85	7	107	6	0	**3**	**9**	2	77	**30**	109	**254**
08:45	16	0	6	22	**23**	83	4	**110**	2	1	0	3	6	**85**	25	**116**	251
Total Volume	86	3	22	111	78	323	21	422	17	2	4	23	22	283	106	411	967
% App. Total	77.5	2.7	19.8		18.5	76.5	5		73.9	8.7	17.4		5.4	68.9	25.8		
PHF	.827	.375	.917	.841	.848	.928	.750	.959	.708	.500	.333	.639	.550	.832	.883	.886	.952



MARKS TRAFFIC DATA

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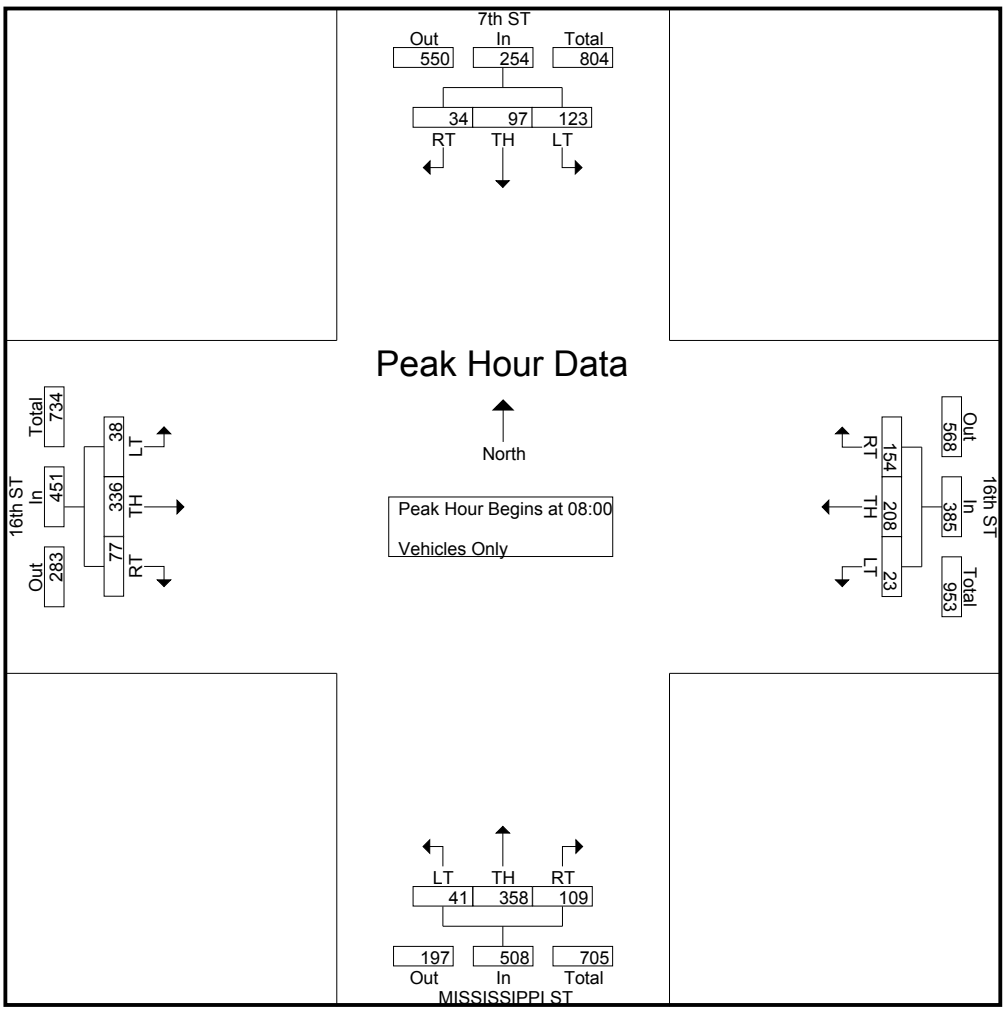
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-16-a
Site Code : 13
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	7th ST Southbound				16th ST Westbound				MISSISSIPPI ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	1	10	9	20	11	41	7	59	18	44	12	74	22	40	0	62	215
07:15	3	21	26	50	24	21	0	45	14	71	19	104	12	55	3	70	269
07:30	4	13	20	37	41	40	8	89	20	83	16	119	26	74	1	101	346
07:45	2	30	31	63	28	40	5	73	25	89	9	123	20	66	4	90	349
Total	10	74	86	170	104	142	20	266	77	287	56	420	80	235	8	323	1179
08:00	12	25	25	62	40	57	2	99	27	83	11	121	23	74	6	103	385
08:15	5	23	31	59	35	57	5	97	23	89	5	117	16	95	10	121	394
08:30	9	29	28	66	35	50	5	90	23	95	15	133	21	83	10	114	403
08:45	8	20	39	67	44	44	11	99	36	91	10	137	17	84	12	113	416
Total	34	97	123	254	154	208	23	385	109	358	41	508	77	336	38	451	1598
Grand Total	44	171	209	424	258	350	43	651	186	645	97	928	157	571	46	774	2777
Apprch %	10.4	40.3	49.3		39.6	53.8	6.6		20	69.5	10.5		20.3	73.8	5.9		
Total %	1.6	6.2	7.5	15.3	9.3	12.6	1.5	23.4	6.7	23.2	3.5	33.4	5.7	20.6	1.7	27.9	

	7th ST Southbound				16th ST Westbound				MISSISSIPPI ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	**12**	25	25	62	40	**57**	2	**99**	27	83	11	121	**23**	74	6	103	385
08:15	5	23	31	59	35	57	5	97	23	89	5	117	16	**95**	10	**121**	394
08:30	9	**29**	28	66	35	50	5	90	23	**95**	**15**	133	21	83	10	114	403
08:45	8	20	**39**	**67**	**44**	44	**11**	99	**36**	91	10	**137**	17	84	**12**	113	**416**
Total Volume	34	97	123	254	154	208	23	385	109	358	41	508	77	336	38	451	1598
% App. Total	13.4	38.2	48.4		40	54	6		21.5	70.5	8.1		17.1	74.5	8.4		
PHF	.708	.836	.788	.948	.875	.912	.523	.972	.757	.942	.683	.927	.837	.884	.792	.932	.960



MARKS TRAFFIC DATA

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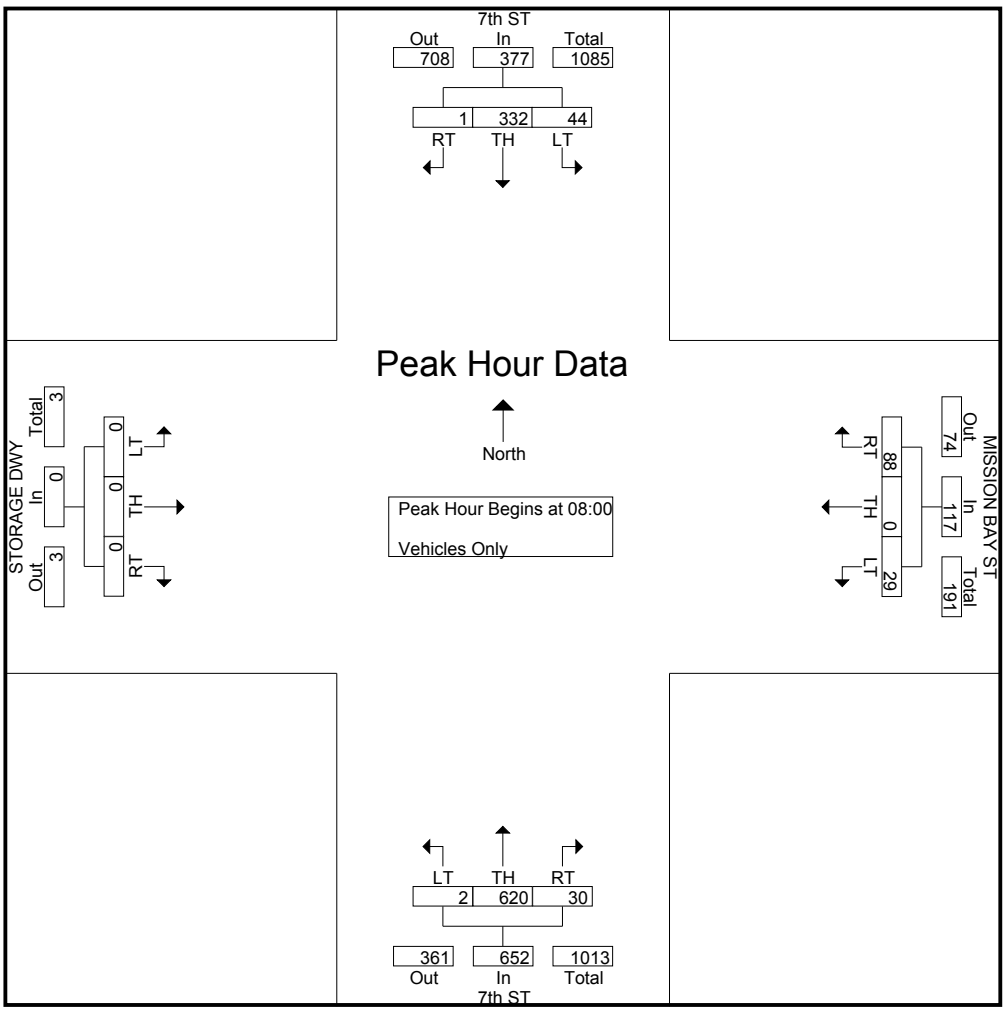
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 7-mission bay-a
Site Code : 7
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	7th ST Southbound				MISSION BAY ST Westbound				7th ST Northbound				STORAGE DWY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	40	4	44	18	0	2	20	4	52	2	58	0	0	0	0	122
07:15	0	68	8	76	12	0	6	18	1	108	1	110	0	0	0	0	204
07:30	5	62	3	70	12	0	4	16	3	134	0	137	0	0	0	0	223
07:45	2	75	6	83	20	0	4	24	2	158	2	162	0	0	0	0	269
Total	7	245	21	273	62	0	16	78	10	452	5	467	0	0	0	0	818
08:00	0	90	11	101	22	0	3	25	4	153	0	157	0	0	0	0	283
08:15	0	78	10	88	28	0	6	34	7	150	1	158	0	0	0	0	280
08:30	1	88	12	101	19	0	12	31	7	159	1	167	0	0	0	0	299
08:45	0	76	11	87	19	0	8	27	12	158	0	170	0	0	0	0	284
Total	1	332	44	377	88	0	29	117	30	620	2	652	0	0	0	0	1146
Grand Total	8	577	65	650	150	0	45	195	40	1072	7	1119	0	0	0	0	1964
Apprch %	1.2	88.8	10		76.9	0	23.1		3.6	95.8	0.6		0	0	0		
Total %	0.4	29.4	3.3	33.1	7.6	0	2.3	9.9	2	54.6	0.4	57	0	0	0	0	

	7th ST Southbound				MISSION BAY ST Westbound				7th ST Northbound				STORAGE DWY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	0	**90**	11	**101**	22	0	3	25	4	153	0	157	0	0	0	0	283
08:15	0	78	10	88	**28**	0	6	**34**	7	150	**1**	158	0	0	0	0	280
08:30	**1**	88	**12**	101	19	0	**12**	31	7	**159**	1	167	0	0	0	0	**299**
08:45	0	76	11	87	19	0	8	27	**12**	158	0	**170**	0	0	0	0	284
Total Volume	1	332	44	377	88	0	29	117	30	620	2	652	0	0	0	0	1146
% App. Total	0.3	88.1	11.7		75.2	0	24.8		4.6	95.1	0.3		0	0	0		
PHF	.250	.922	.917	.933	.786	.000	.604	.860	.625	.975	.500	.959	.000	.000	.000	.000	.958



MARKS TRAFFIC DATA
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CITY OF SAN FRANCISCO

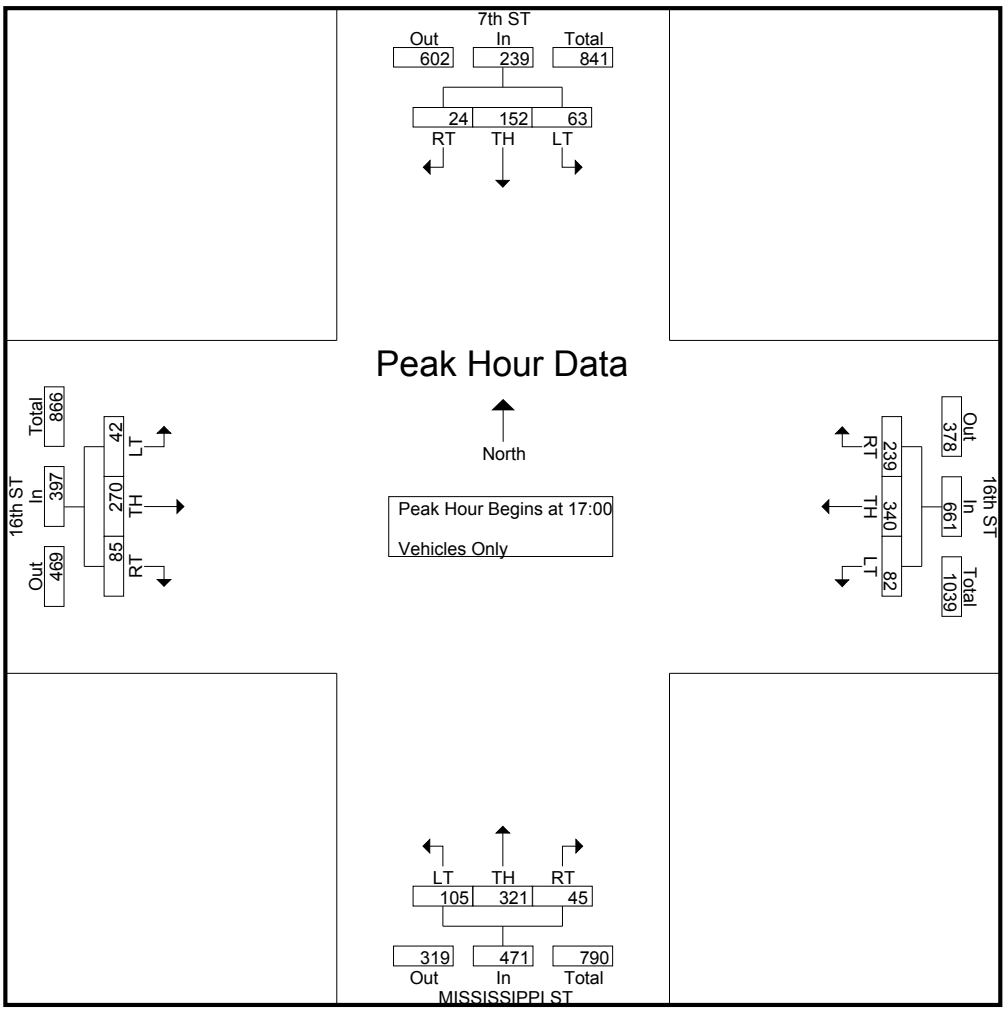
File Name : 7th-16-p
Site Code : 28
Start Date : 11/9/2011
Page No : 1

fp

Groups Printed- Vehicles Only

	7th ST Southbound				16th ST Westbound				MISSISSIPPI ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	3	25	18	46	38	49	11	98	14	62	18	94	15	52	6	73	311
16:15	7	31	25	63	42	56	15	113	18	73	19	110	18	61	8	87	373
16:30	5	38	22	65	48	62	13	123	12	77	16	105	24	53	8	85	378
16:45	8	33	16	57	53	71	16	140	12	81	21	114	21	59	13	93	404
Total	23	127	81	231	181	238	55	474	56	293	74	423	78	225	35	338	1466
17:00	6	36	18	60	58	78	19	155	10	86	22	118	28	70	10	108	441
17:15	7	42	15	64	66	86	20	172	15	72	24	111	23	72	11	106	453
17:30	5	43	19	67	61	84	25	170	11	78	30	119	16	63	9	88	444
17:45	6	31	11	48	54	92	18	164	9	85	29	123	18	65	12	95	430
Total	24	152	63	239	239	340	82	661	45	321	105	471	85	270	42	397	1768
Grand Total	47	279	144	470	420	578	137	1135	101	614	179	894	163	495	77	735	3234
Apprch %	10	59.4	30.6		37	50.9	12.1		11.3	68.7	20		22.2	67.3	10.5		
Total %	1.5	8.6	4.5	14.5	13	17.9	4.2	35.1	3.1	19	5.5	27.6	5	15.3	2.4	22.7	

	7th ST Southbound				16th ST Westbound				MISSISSIPPI ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	6	36	18	60	58	78	19	155	10	**86**	22	118	**28**	70	10	**108**	441
17:15	**7**	42	15	64	**66**	86	20	**172**	**15**	72	24	111	23	**72**	11	106	**453**
17:30	5	**43**	**19**	**67**	61	84	**25**	170	11	78	**30**	119	16	63	9	88	444
17:45	6	31	11	48	54	**92**	18	164	9	85	29	**123**	18	65	**12**	95	430
Total Volume	24	152	63	239	239	340	82	661	45	321	105	471	85	270	42	397	1768
% App. Total	10	63.6	26.4		36.2	51.4	12.4		9.6	68.2	22.3		21.4	68	10.6		
PHF	.857	.884	.829	.892	.905	.924	.820	.961	.750	.933	.875	.957	.759	.938	.875	.919	.976



MARKS TRAFFIC DATA

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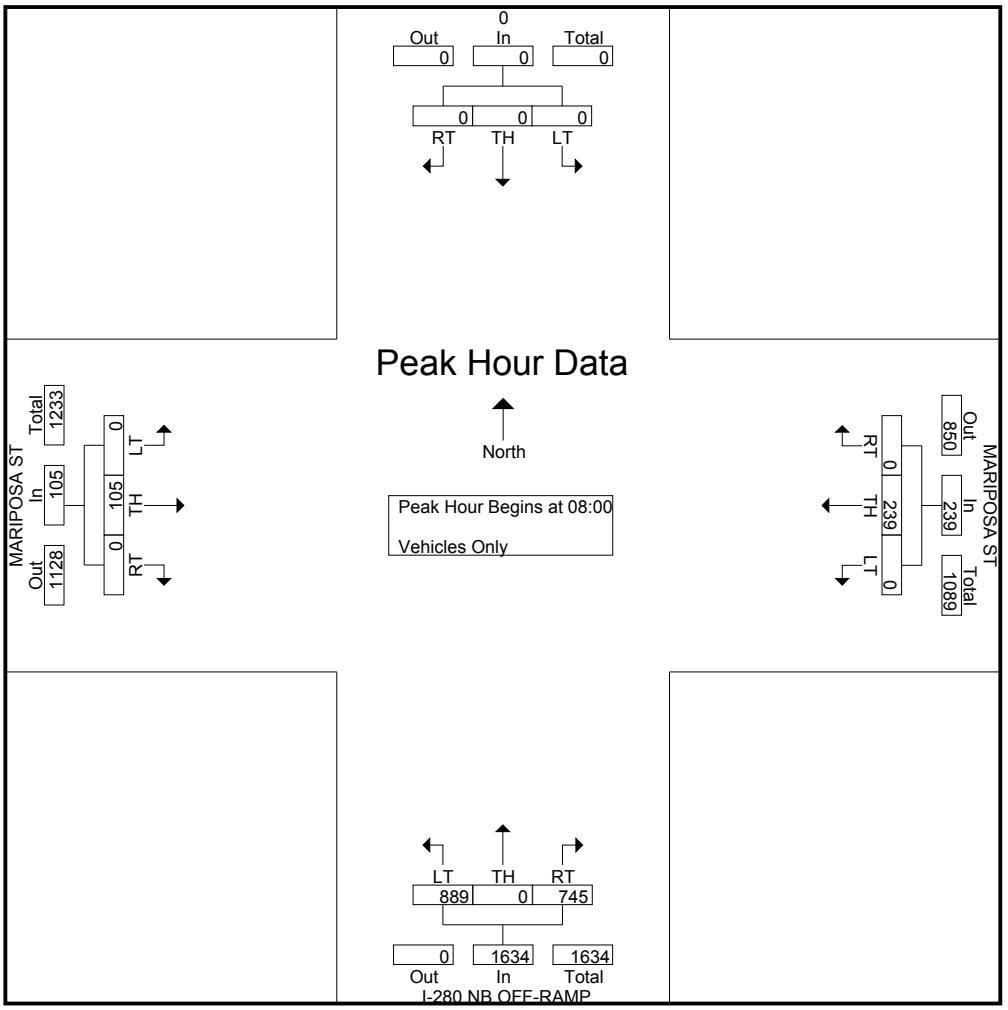
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 280nb-mariposa-a
Site Code : 18
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				MARIPOSA ST Westbound				I-280 NB OFF-RAMP Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	0	0	0	0	48	0	48	78	0	111	189	0	22	0	22	259
07:15	0	0	0	0	0	38	0	38	143	0	166	309	0	14	0	14	361
07:30	0	0	0	0	0	56	0	56	149	0	208	357	0	20	0	20	433
07:45	0	0	0	0	0	42	0	42	184	0	228	412	0	38	0	38	492
Total	0	0	0	0	0	184	0	184	554	0	713	1267	0	94	0	94	1545
08:00	0	0	0	0	0	43	0	43	190	0	220	410	0	21	0	21	474
08:15	0	0	0	0	0	65	0	65	175	0	218	393	0	27	0	27	485
08:30	0	0	0	0	0	67	0	67	192	0	220	412	0	34	0	34	513
08:45	0	0	0	0	0	64	0	64	188	0	231	419	0	23	0	23	506
Total	0	0	0	0	0	239	0	239	745	0	889	1634	0	105	0	105	1978
Grand Total	0	0	0	0	0	423	0	423	1299	0	1602	2901	0	199	0	199	3523
Apprch %	0	0	0		0	100	0		44.8	0	55.2		0	100	0		
Total %	0	0	0	0	0	12	0	12	36.9	0	45.5	82.3	0	5.6	0	5.6	

	0 Southbound				MARIPOSA ST Westbound				I-280 NB OFF-RAMP Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	0	0	0	0	0	43	0	43	190	0	220	410	0	21	0	21	474
08:15	0	0	0	0	0	65	0	65	175	0	218	393	0	27	0	27	485
08:30	0	0	0	0	0	**67**	0	**67**	**192**	0	220	412	0	**34**	0	**34**	**513**
08:45	0	0	0	0	0	64	0	64	188	0	**231**	**419**	0	23	0	23	506
Total Volume	0	0	0	0	0	239	0	239	745	0	889	1634	0	105	0	105	1978
% App. Total	0	0	0		0	100	0		45.6	0	54.4		0	100	0		
PHF	.000	.000	.000	.000	.000	.892	.000	.892	.970	.000	.962	.975	.000	.772	.000	.772	.964



MARKS TRAFFIC DATA

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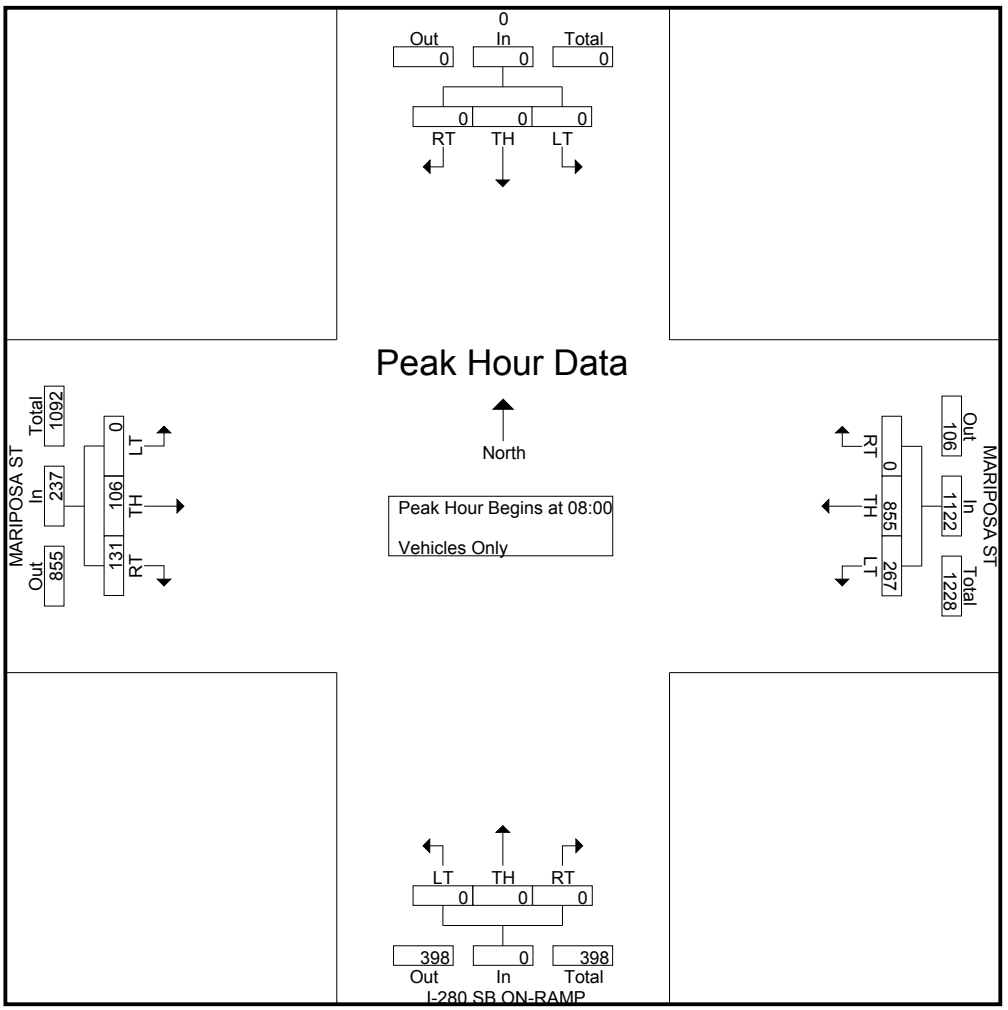
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : 280sb-mariposa-a
Site Code : 19
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				MARIPOSA ST Westbound				I-280 SB ON-RAMP Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	0	0	0	0	107	51	158	0	0	0	0	19	21	0	40	198
07:15	0	0	0	0	0	152	51	203	0	0	0	0	31	15	0	46	249
07:30	0	0	0	0	0	205	61	266	0	0	0	0	37	20	0	57	323
07:45	0	0	0	0	0	214	55	269	0	0	0	0	25	39	0	64	333
Total	0	0	0	0	0	678	218	896	0	0	0	0	112	95	0	207	1103
08:00	0	0	0	0	0	200	63	263	0	0	0	0	30	22	0	52	315
08:15	0	0	0	0	0	203	79	282	0	0	0	0	33	29	0	62	344
08:30	0	0	0	0	0	224	62	286	0	0	0	0	35	34	0	69	355
08:45	0	0	0	0	0	228	63	291	0	0	0	0	33	21	0	54	345
Total	0	0	0	0	0	855	267	1122	0	0	0	0	131	106	0	237	1359
Grand Total	0	0	0	0	0	1533	485	2018	0	0	0	0	243	201	0	444	2462
Apprch %	0	0	0		0	76	24		0	0	0		54.7	45.3	0		
Total %	0	0	0	0	0	62.3	19.7	82	0	0	0	0	9.9	8.2	0	18	

	0 Southbound				MARIPOSA ST Westbound				I-280 SB ON-RAMP Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	0	0	0	0	0	200	63	263	0	0	0	0	30	22	0	52	315
08:15	0	0	0	0	0	203	**79**	282	0	0	0	0	33	29	0	62	344
08:30	0	0	0	0	0	224	62	286	0	0	0	0	**35**	**34**	0	**69**	**355**
08:45	0	0	0	0	0	**228**	63	**291**	0	0	0	0	33	21	0	54	345
Total Volume	0	0	0	0	0	855	267	1122	0	0	0	0	131	106	0	237	1359
% App. Total	0	0	0		0	76.2	23.8		0	0	0		55.3	44.7	0		
PHF	.000	.000	.000	.000	.000	.938	.845	.964	.000	.000	.000	.000	.936	.779	.000	.859	.957



MARKS TRAFFIC DATA

mietekm@comcast.net
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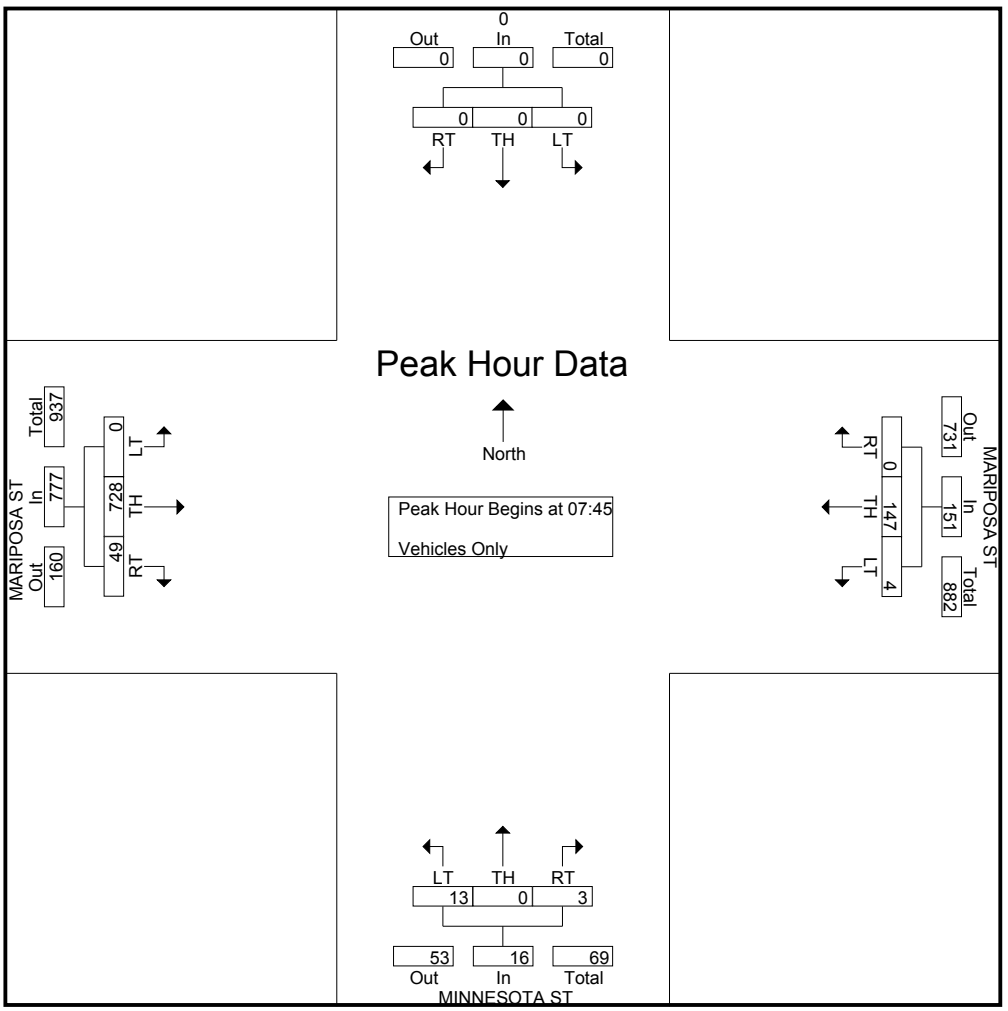
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : minnesota-mariposa-a
Site Code : 17
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				MARIPOSA ST Westbound				MINNESOTA ST Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	0	0	0	0	34	1	35	1	0	2	3	4	74	0	78	116
07:15	0	0	0	0	0	25	0	25	1	0	5	6	5	134	0	139	170
07:30	0	0	0	0	0	33	3	36	2	0	3	5	8	152	0	160	201
07:45	0	0	0	0	0	32	0	32	0	0	6	6	7	194	0	201	239
Total	0	0	0	0	0	124	4	128	4	0	16	20	24	554	0	578	726
08:00	0	0	0	0	0	41	0	41	2	0	1	3	14	186	0	200	244
08:15	0	0	0	0	0	35	2	37	1	0	2	3	11	154	0	165	205
08:30	0	0	0	0	0	39	2	41	0	0	4	4	17	194	0	211	256
08:45	0	0	0	0	0	41	2	43	0	0	7	7	9	177	0	186	236
Total	0	0	0	0	0	156	6	162	3	0	14	17	51	711	0	762	941
Grand Total	0	0	0	0	0	280	10	290	7	0	30	37	75	1265	0	1340	1667
Apprch %	0	0	0		0	96.6	3.4		18.9	0	81.1		5.6	94.4	0		
Total %	0	0	0	0	0	16.8	0.6	17.4	0.4	0	1.8	2.2	4.5	75.9	0	80.4	

	0 Southbound				MARIPOSA ST Westbound				MINNESOTA ST Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	0	0	0	0	32	0	32	0	0	**6**	**6**	7	**194**	0	201	239
08:00	0	0	0	0	0	**41**	0	**41**	**2**	0	1	3	14	186	0	200	244
08:15	0	0	0	0	0	35	**2**	37	1	0	2	3	11	154	0	165	205
08:30	0	0	0	0	0	39	2	41	0	0	4	4	**17**	194	0	**211**	**256**
Total Volume	0	0	0	0	0	147	4	151	3	0	13	16	49	728	0	777	944
% App. Total	0	0	0		0	97.4	2.6		18.8	0	81.2		6.3	93.7	0		
PHF	.000	.000	.000	.000	.000	.896	.500	.921	.375	.000	.542	.667	.721	.938	.000	.921	.922



MARKS TRAFFIC DATA

mietekm@comcast.net
916.806.0250

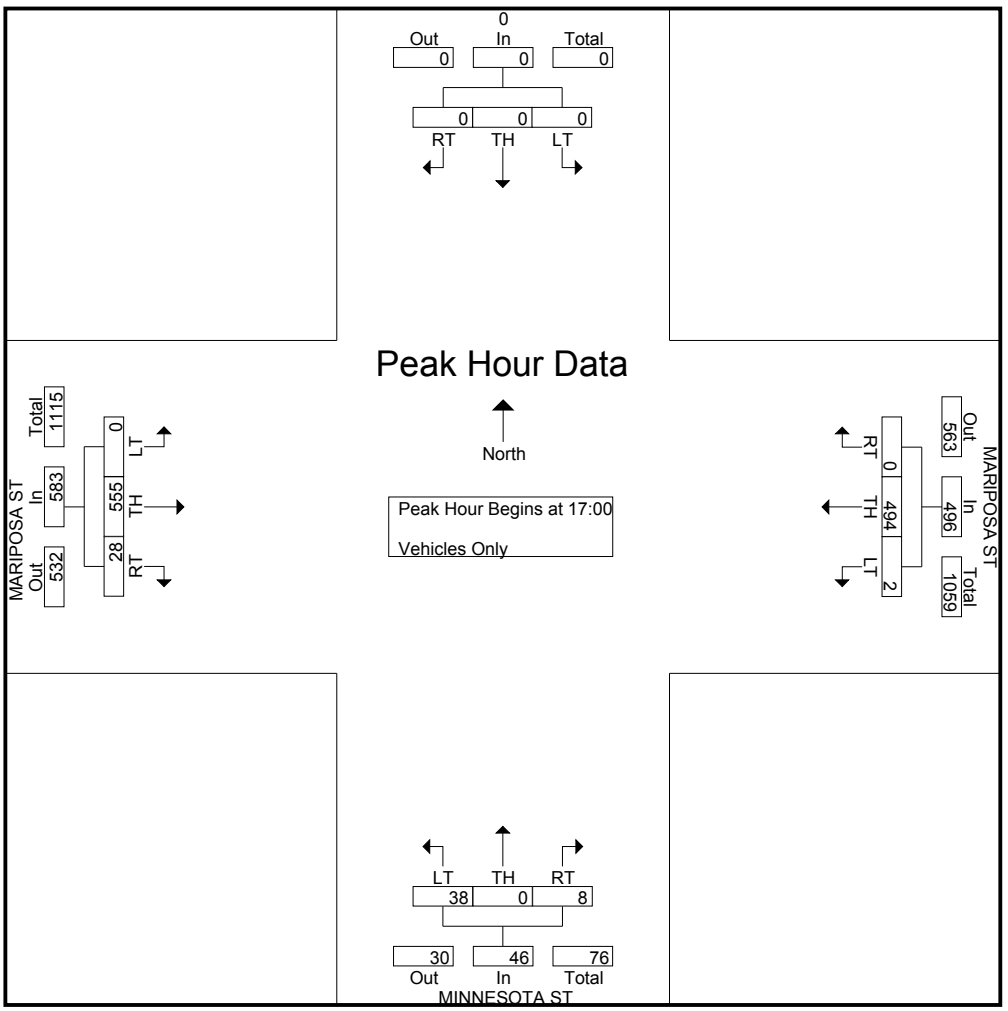
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : minnesota-mariposa-p
Site Code : 17
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	0 Southbound				MARIPOSA ST Westbound				MINNESOTA ST Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	0	0	0	0	0	121	1	122	1	0	4	5	10	88	0	98	225
16:15	0	0	0	0	0	91	0	91	1	0	12	13	5	88	0	93	197
16:30	0	0	0	0	0	109	0	109	0	0	8	8	7	79	0	86	203
16:45	0	0	0	0	0	120	0	120	2	0	15	17	7	113	0	120	257
Total	0	0	0	0	0	441	1	442	4	0	39	43	29	368	0	397	882
17:00	0	0	0	0	0	150	0	150	1	0	13	14	5	117	0	122	286
17:15	0	0	0	0	0	112	1	113	4	0	10	14	6	106	0	112	239
17:30	0	0	0	0	0	121	1	122	2	0	8	10	4	157	0	161	293
17:45	0	0	0	0	0	111	0	111	1	0	7	8	13	175	0	188	307
Total	0	0	0	0	0	494	2	496	8	0	38	46	28	555	0	583	1125
Grand Total	0	0	0	0	0	935	3	938	12	0	77	89	57	923	0	980	2007
Apprch %	0	0	0		0	99.7	0.3		13.5	0	86.5		5.8	94.2	0		
Total %	0	0	0	0	0	46.6	0.1	46.7	0.6	0	3.8	4.4	2.8	46	0	48.8	

	0 Southbound				MARIPOSA ST Westbound				MINNESOTA ST Northbound				MARIPOSA ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	0	0	0	0	**150**	0	**150**	1	0	**13**	**14**	5	117	0	122	286
17:15	0	0	0	0	0	112	**1**	113	**4**	0	10	14	6	106	0	112	239
17:30	0	0	0	0	0	121	1	122	2	0	8	10	4	157	0	161	293
17:45	0	0	0	0	0	111	0	111	1	0	7	8	**13**	**175**	0	**188**	**307**
Total Volume	0	0	0	0	0	494	2	496	8	0	38	46	28	555	0	583	1125
% App. Total	0	0	0		0	99.6	0.4		17.4	0	82.6		4.8	95.2	0		
PHF	.000	.000	.000	.000	.000	.823	.500	.827	.500	.000	.731	.821	.538	.793	.000	.775	.916



MARKS TRAFFIC DATA

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916.806.0250

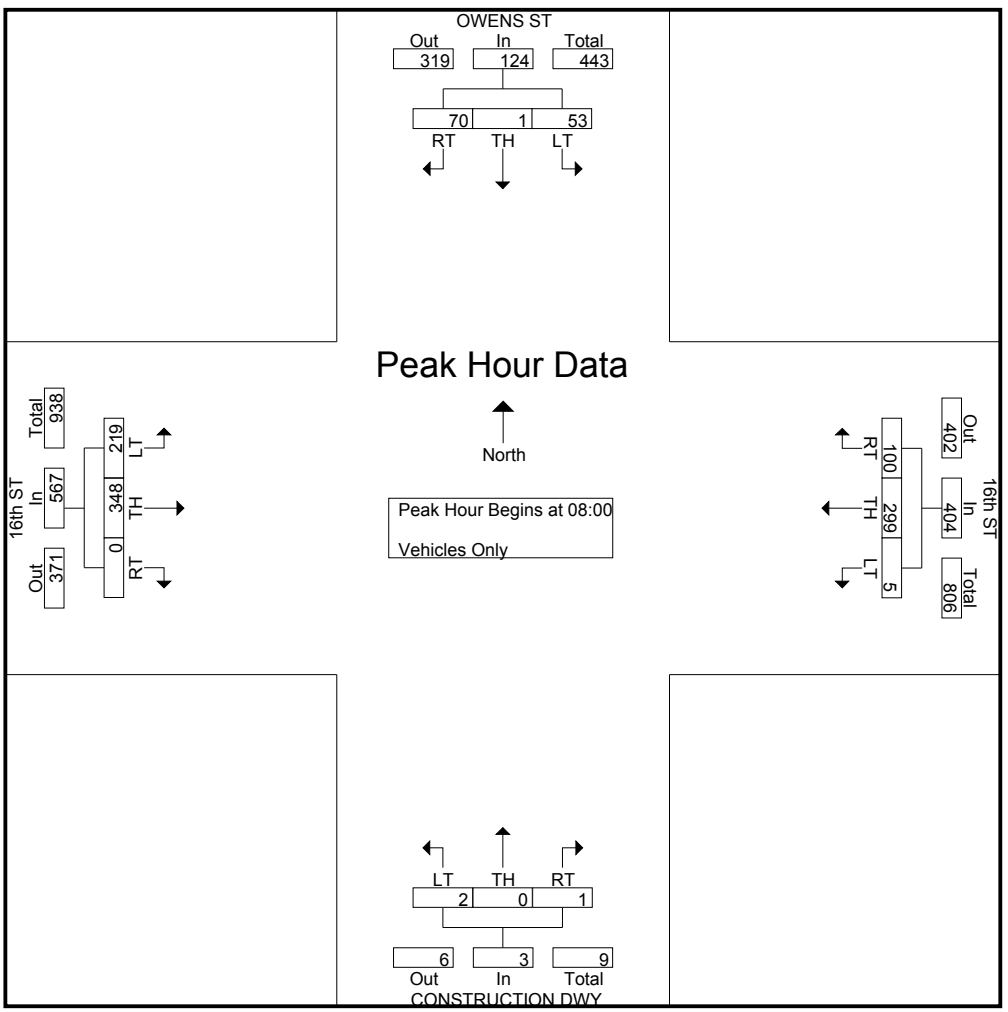
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : owens-16-a
Site Code : 12
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	OWENS ST Southbound				16th ST Westbound				CONSTRUCTION DWY Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	25	1	9	35	14	42	1	57	0	0	0	0	0	40	22	62	154
07:15	6	0	10	16	15	39	0	54	3	0	0	3	0	69	22	91	164
07:30	14	0	7	21	17	84	3	104	0	0	0	0	0	89	30	119	244
07:45	10	0	6	16	10	65	0	75	1	1	0	2	1	67	57	125	218
Total	55	1	32	88	56	230	4	290	4	1	0	5	1	265	131	397	780
08:00	20	0	6	26	21	75	0	96	0	0	0	0	0	88	37	125	247
08:15	15	1	10	26	23	83	1	107	0	0	2	2	0	79	62	141	276
08:30	14	0	18	32	20	82	0	102	1	0	0	1	0	82	61	143	278
08:45	21	0	19	40	36	59	4	99	0	0	0	0	0	99	59	158	297
Total	70	1	53	124	100	299	5	404	1	0	2	3	0	348	219	567	1098
Grand Total	125	2	85	212	156	529	9	694	5	1	2	8	1	613	350	964	1878
Apprch %	59	0.9	40.1		22.5	76.2	1.3		62.5	12.5	25		0.1	63.6	36.3		
Total %	6.7	0.1	4.5	11.3	8.3	28.2	0.5	37	0.3	0.1	0.1	0.4	0.1	32.6	18.6	51.3	

	OWENS ST Southbound				16th ST Westbound				CONSTRUCTION DWY Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	20	0	6	26	21	75	0	96	0	0	0	0	0	88	37	125	247
08:15	15	**1**	10	26	23	**83**	1	**107**	0	0	**2**	**2**	0	79	**62**	141	276
08:30	14	0	18	32	20	82	0	102	**1**	0	0	1	0	82	61	143	278
08:45	**21**	0	**19**	**40**	**36**	59	**4**	99	0	0	0	0	0	**99**	59	**158**	**297**
Total Volume	70	1	53	124	100	299	5	404	1	0	2	3	0	348	219	567	1098
% App. Total	56.5	0.8	42.7		24.8	74	1.2		33.3	0	66.7		0	61.4	38.6		
PHF	.833	.250	.697	.775	.694	.901	.313	.944	.250	.000	.250	.375	.000	.879	.883	.897	.924



MARKS TRAFFIC DATA

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916.806.0250

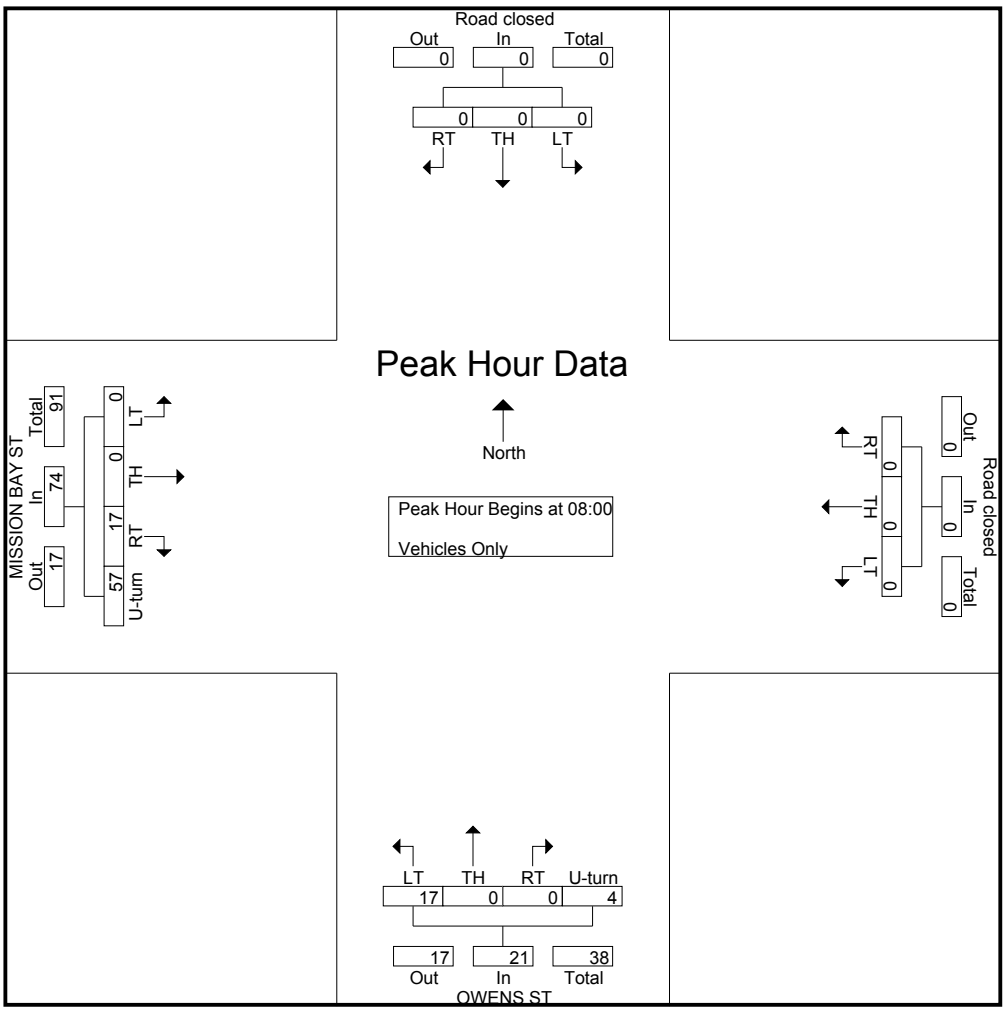
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : owens-mission bay-a
Site Code : 6
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	Road closed Southbound				Road closed Westbound				OWENS ST Northbound					MISSION BAY ST Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
07:00	0	0	0	0	0	0	0	0	0	0	4	1	5	5	0	0	3	8	13
07:15	0	0	0	0	0	0	0	0	0	0	3	0	3	4	0	0	4	8	11
07:30	0	0	0	0	0	0	0	0	0	0	1	1	2	2	0	0	4	6	8
07:45	0	0	0	0	0	0	0	0	0	0	4	0	4	2	0	0	7	9	13
Total	0	0	0	0	0	0	0	0	0	0	12	2	14	13	0	0	18	31	45
08:00	0	0	0	0	0	0	0	0	0	0	4	0	4	1	0	0	13	14	18
08:15	0	0	0	0	0	0	0	0	0	0	3	1	4	5	0	0	15	20	24
08:30	0	0	0	0	0	0	0	0	0	0	4	0	4	5	0	0	11	16	20
08:45	0	0	0	0	0	0	0	0	0	0	6	3	9	6	0	0	18	24	33
Total	0	0	0	0	0	0	0	0	0	0	17	4	21	17	0	0	57	74	95
Grand Total	0	0	0	0	0	0	0	0	0	0	29	6	35	30	0	0	75	105	140
Apprch %	0	0	0		0	0	0		0	0	82.9	17.1		28.6	0	0	71.4		
Total %	0	0	0	0	0	0	0	0	0	0	20.7	4.3	25	21.4	0	0	53.6	75	

	Road closed Southbound				Road closed Westbound				OWENS ST Northbound					MISSION BAY ST Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:00																			
08:00	0	0	0	0	0	0	0	0	0	0	4	0	4	1	0	0	13	14	18
08:15	0	0	0	0	0	0	0	0	0	0	3	1	4	5	0	0	15	20	24
08:30	0	0	0	0	0	0	0	0	0	0	4	0	4	5	0	0	11	16	20
08:45	0	0	0	0	0	0	0	0	0	0	**6**	**3**	**9**	**6**	0	0	**18**	**24**	**33**
Total Volume	0	0	0	0	0	0	0	0	0	0	17	4	21	17	0	0	57	74	95
% App. Total	0	0	0		0	0	0		0	0	81	19		23	0	0	77		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.708	.333	.583	.708	.000	.000	.792	.771	.720



MARKS TRAFFIC DATA

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916.806.0250

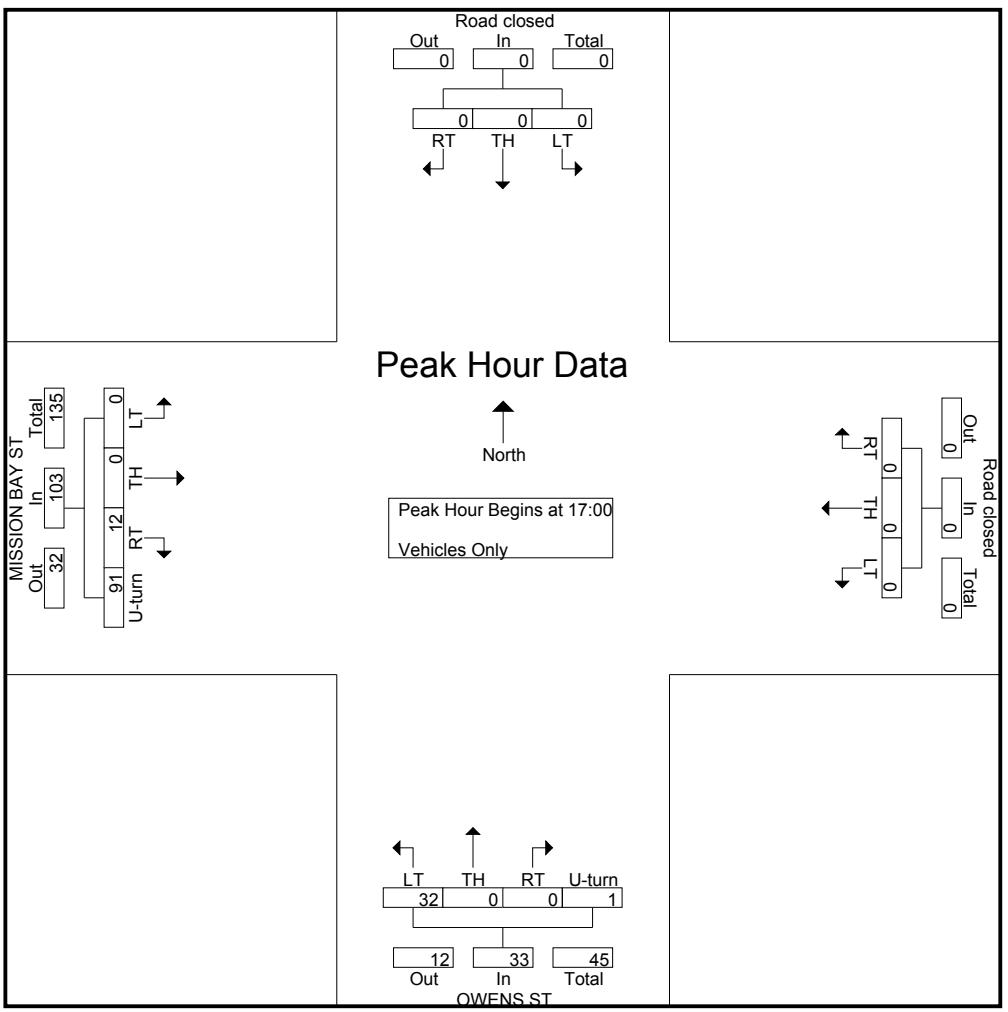
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : owens-mission bay-p
Site Code : 6
Start Date : 5/9/2013
Page No : 1

Groups Printed- Vehicles Only

	Road closed Southbound				Road closed Westbound				OWENS ST Northbound					MISSION BAY ST Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
16:00	0	0	0	0	0	0	0	0	0	0	8	1	9	5	0	0	14	19	28
16:15	0	0	0	0	0	0	0	0	0	0	7	1	8	2	0	0	22	24	32
16:30	0	0	0	0	0	0	0	0	0	0	4	0	4	3	0	0	15	18	22
16:45	0	0	0	0	0	0	0	0	0	0	8	0	8	3	0	0	18	21	29
Total	0	0	0	0	0	0	0	0	0	0	27	2	29	13	0	0	69	82	111
17:00	0	0	0	0	0	0	0	0	0	0	6	0	6	1	0	0	19	20	26
17:15	0	0	0	0	0	0	0	0	0	0	10	0	10	2	0	0	25	27	37
17:30	0	0	0	0	0	0	0	0	0	0	8	1	9	5	0	0	24	29	38
17:45	0	0	0	0	0	0	0	0	0	0	8	0	8	4	0	0	23	27	35
Total	0	0	0	0	0	0	0	0	0	0	32	1	33	12	0	0	91	103	136
Grand Total	0	0	0	0	0	0	0	0	0	0	59	3	62	25	0	0	160	185	247
Apprch %	0	0	0		0	0	0		0	0	95.2	4.8		13.5	0	0	86.5		
Total %	0	0	0	0	0	0	0	0	0	0	23.9	1.2	25.1	10.1	0	0	64.8	74.9	

	Road closed Southbound				Road closed Westbound				OWENS ST Northbound					MISSION BAY ST Eastbound					
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	U-turn	App. Total	RT	TH	LT	U-turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 17:00																			
17:00	0	0	0	0	0	0	0	0	0	0	6	0	6	1	0	0	19	20	26
17:15	0	0	0	0	0	0	0	0	0	0	**10**	0	**10**	2	0	0	**25**	27	37
17:30	0	0	0	0	0	0	0	0	0	0	8	**1**	9	**5**	0	0	24	**29**	**38**
17:45	0	0	0	0	0	0	0	0	0	0	8	0	8	4	0	0	23	27	35
Total Volume	0	0	0	0	0	0	0	0	0	0	32	1	33	12	0	0	91	103	136
% App. Total	0	0	0		0	0	0		0	0	97	3		11.7	0	0	88.3		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.800	.250	.825	.600	.000	.000	.910	.888	.895



MARKS TRAFFIC DATA

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916.806.0250

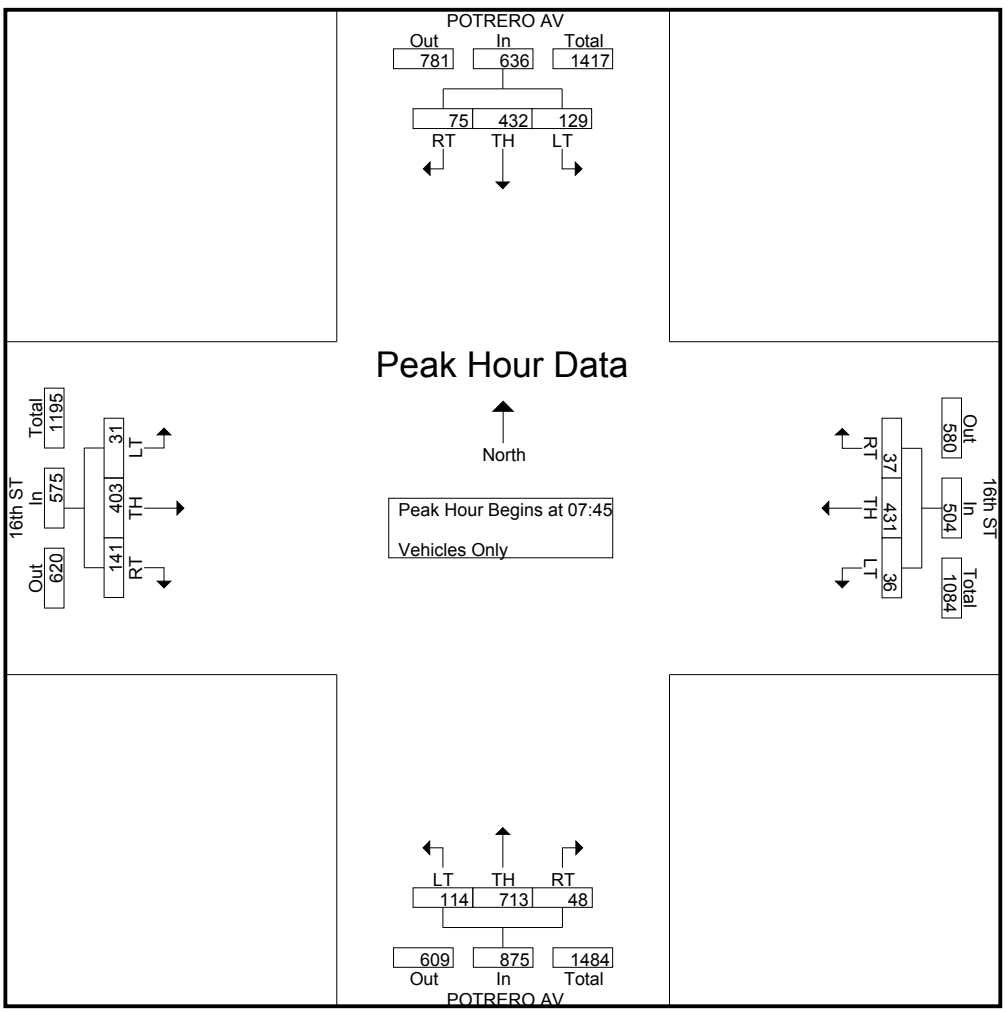
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : potrero-16-a
Site Code : 15
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	POTRERO AV Southbound				16th ST Westbound				POTRERO AV Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	9	74	16	99	5	93	4	102	6	70	21	97	27	55	6	88	386
07:15	17	82	17	116	9	90	5	104	8	106	24	138	20	62	3	85	443
07:30	21	83	22	126	4	121	5	130	6	160	34	200	23	90	5	118	574
07:45	16	104	26	146	4	98	6	108	12	180	31	223	28	93	8	129	606
Total	63	343	81	487	22	402	20	444	32	516	110	658	98	300	22	420	2009
08:00	17	125	31	173	8	121	14	143	6	167	28	201	40	97	4	141	658
08:15	20	111	36	167	12	97	7	116	14	179	32	225	34	103	11	148	656
08:30	22	92	36	150	13	115	9	137	16	187	23	226	39	110	8	157	670
08:45	24	95	31	150	10	105	7	122	13	192	24	229	36	107	5	148	649
Total	83	423	134	640	43	438	37	518	49	725	107	881	149	417	28	594	2633
Grand Total	146	766	215	1127	65	840	57	962	81	1241	217	1539	247	717	50	1014	4642
Apprch %	13	68	19.1		6.8	87.3	5.9		5.3	80.6	14.1		24.4	70.7	4.9		
Total %	3.1	16.5	4.6	24.3	1.4	18.1	1.2	20.7	1.7	26.7	4.7	33.2	5.3	15.4	1.1	21.8	

	POTRERO AV Southbound				16th ST Westbound				POTRERO AV Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:30 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	16	104	26	146	4	98	6	108	12	180	31	223	28	93	8	129	606
08:00	17	**125**	31	**173**	8	**121**	**14**	**143**	6	167	28	201	**40**	97	4	141	658
08:15	20	111	**36**	167	12	97	7	116	14	179	**32**	225	34	103	**11**	148	656
08:30	**22**	92	36	150	**13**	115	9	137	**16**	**187**	23	**226**	39	**110**	8	**157**	**670**
Total Volume	75	432	129	636	37	431	36	504	48	713	114	875	141	403	31	575	2590
% App. Total	11.8	67.9	20.3		7.3	85.5	7.1		5.5	81.5	13		24.5	70.1	5.4		
PHF	.852	.864	.896	.919	.712	.890	.643	.881	.750	.953	.891	.968	.881	.916	.705	.916	.966



MARKS TRAFFIC DATA

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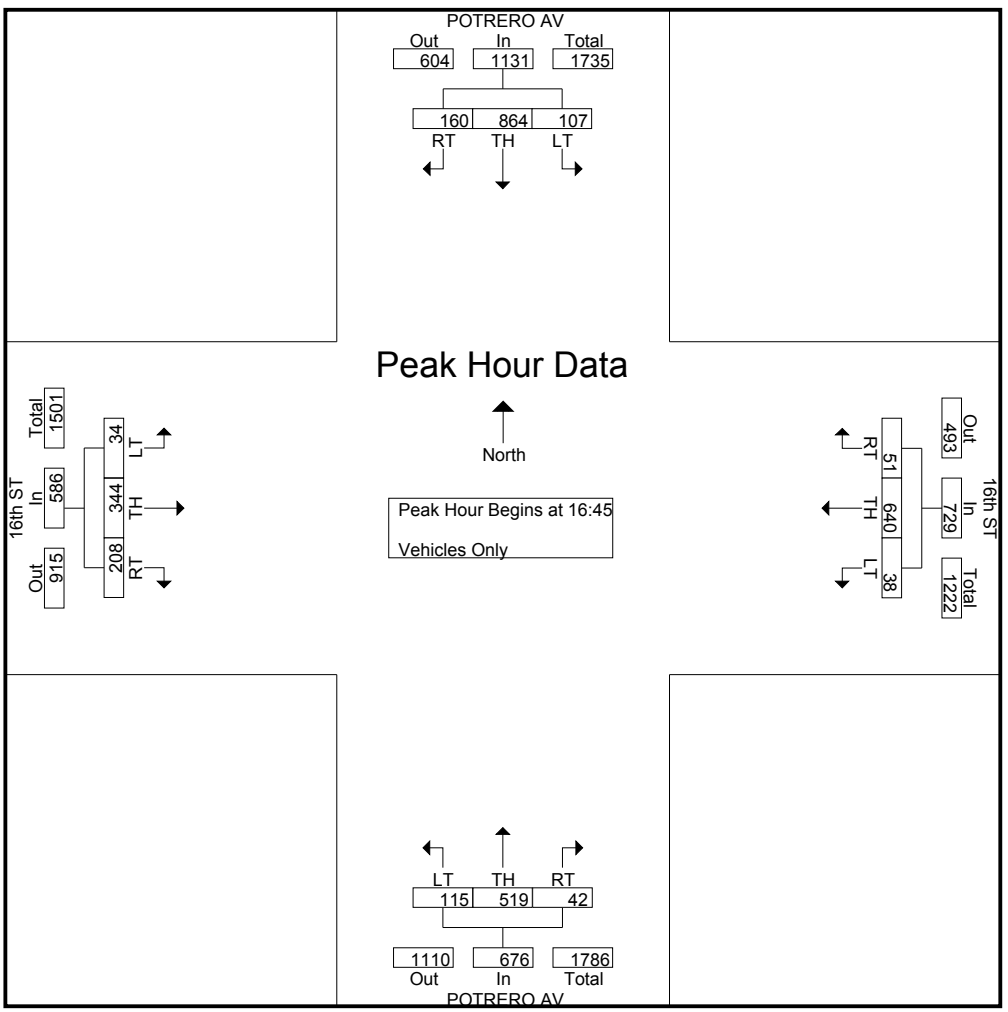
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : potrero-16-p
Site Code : 15
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	POTRERO AV Southbound				16th ST Westbound				POTRERO AV Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	48	235	22	305	16	140	14	170	14	134	35	183	63	85	9	157	815
16:15	43	173	24	240	12	153	13	178	13	123	28	164	59	81	13	153	735
16:30	47	184	19	250	10	139	16	165	8	129	28	165	54	84	6	144	724
16:45	39	175	26	240	14	152	8	174	9	139	34	182	52	78	6	136	732
Total	177	767	91	1035	52	584	51	687	44	525	125	694	228	328	34	590	3006
17:00	43	235	19	297	19	153	10	182	9	146	35	190	47	83	11	141	810
17:15	40	239	27	306	10	167	9	186	6	126	20	152	56	89	8	153	797
17:30	38	215	35	288	8	168	11	187	18	108	26	152	53	94	9	156	783
17:45	37	184	36	257	13	175	15	203	9	94	31	134	64	81	9	154	748
Total	158	873	117	1148	50	663	45	758	42	474	112	628	220	347	37	604	3138
Grand Total	335	1640	208	2183	102	1247	96	1445	86	999	237	1322	448	675	71	1194	6144
Apprch %	15.3	75.1	9.5		7.1	86.3	6.6		6.5	75.6	17.9		37.5	56.5	5.9		
Total %	5.5	26.7	3.4	35.5	1.7	20.3	1.6	23.5	1.4	16.3	3.9	21.5	7.3	11	1.2	19.4	

	POTRERO AV Southbound				16th ST Westbound				POTRERO AV Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:30 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	39	175	26	240	14	152	8	174	9	139	34	182	52	78	6	136	732
17:00	**43**	235	19	297	**19**	153	10	182	9	**146**	**35**	**190**	47	83	**11**	141	**810**
17:15	40	**239**	27	**306**	10	167	9	186	6	126	20	152	**56**	89	8	153	797
17:30	38	215	**35**	288	8	**168**	**11**	**187**	**18**	108	26	152	53	**94**	9	**156**	783
Total Volume	160	864	107	1131	51	640	38	729	42	519	115	676	208	344	34	586	3122
% App. Total	14.1	76.4	9.5		7	87.8	5.2		6.2	76.8	17		35.5	58.7	5.8		
PHF	.930	.904	.764	.924	.671	.952	.864	.975	.583	.889	.821	.889	.929	.915	.773	.939	.964



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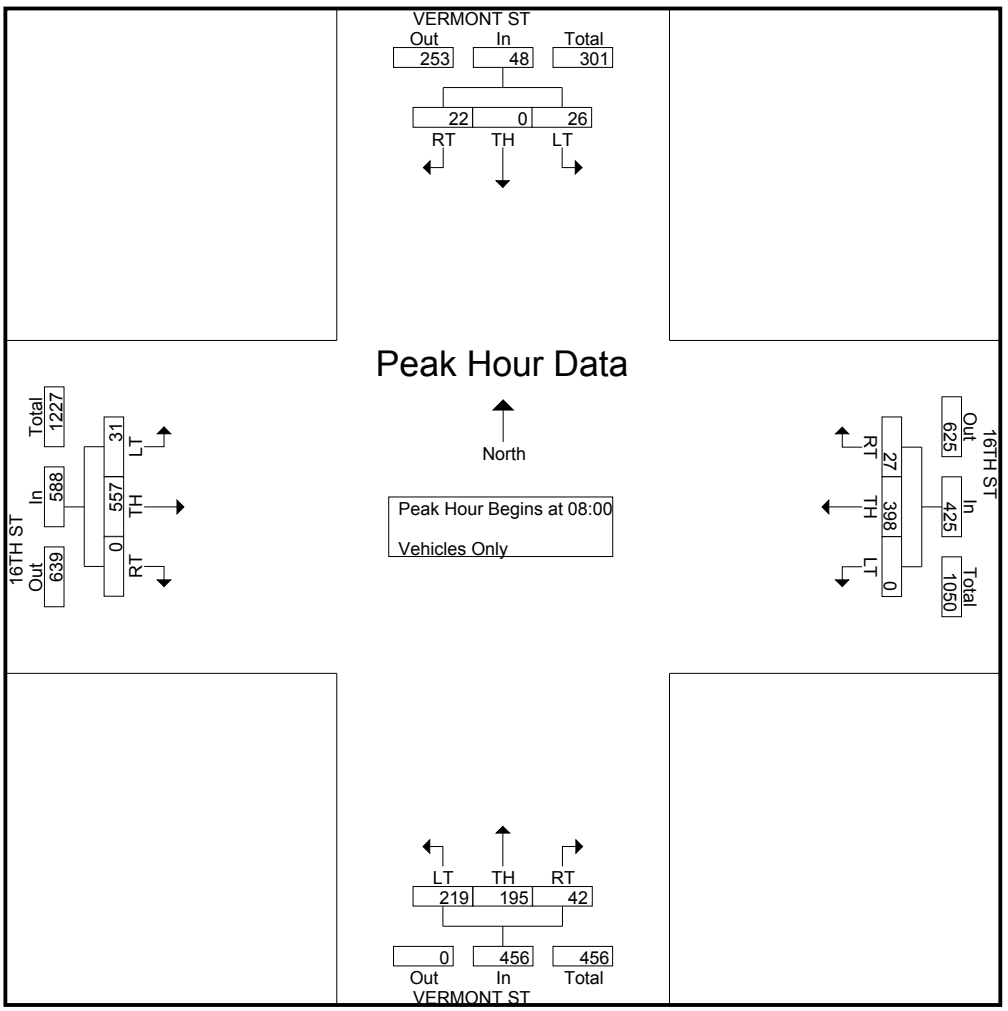
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : vermont-16-a
Site Code : 14
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	VERMONT ST Southbound				16TH ST Westbound				VERMONT ST Northbound				16TH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	5	0	0	5	1	56	0	57	7	19	54	80	0	78	4	82	224
07:15	5	0	3	8	2	66	0	68	5	36	56	97	0	76	6	82	255
07:30	1	0	0	1	7	74	0	81	3	48	69	120	0	124	3	127	329
07:45	6	0	2	8	5	87	0	92	6	47	53	106	0	99	6	105	311
Total	17	0	5	22	15	283	0	298	21	150	232	403	0	377	19	396	1119
08:00	6	0	5	11	8	105	0	113	8	46	67	121	0	117	4	121	366
08:15	9	0	4	13	5	89	0	94	10	46	50	106	0	150	5	155	368
08:30	6	0	5	11	9	98	0	107	12	46	49	107	0	140	10	150	375
08:45	1	0	12	13	5	106	0	111	12	57	53	122	0	150	12	162	408
Total	22	0	26	48	27	398	0	425	42	195	219	456	0	557	31	588	1517
Grand Total	39	0	31	70	42	681	0	723	63	345	451	859	0	934	50	984	2636
Apprch %	55.7	0	44.3		5.8	94.2	0		7.3	40.2	52.5		0	94.9	5.1		
Total %	1.5	0	1.2	2.7	1.6	25.8	0	27.4	2.4	13.1	17.1	32.6	0	35.4	1.9	37.3	

	VERMONT ST Southbound				16TH ST Westbound				VERMONT ST Northbound				16TH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	6	0	5	11	8	105	0	**113**	8	46	**67**	121	0	117	4	121	366
08:15	**9**	0	4	**13**	5	89	0	94	10	46	50	106	0	**150**	5	155	368
08:30	6	0	5	11	**9**	98	0	107	**12**	46	49	107	0	140	10	150	375
08:45	1	0	**12**	13	5	**106**	0	111	12	**57**	53	**122**	0	150	**12**	**162**	**408**
Total Volume	22	0	26	48	27	398	0	425	42	195	219	456	0	557	31	588	1517
% App. Total	45.8	0	54.2		6.4	93.6	0		9.2	42.8	48		0	94.7	5.3		
PHF	.611	.000	.542	.923	.750	.939	.000	.940	.875	.855	.817	.934	.000	.928	.646	.907	.930



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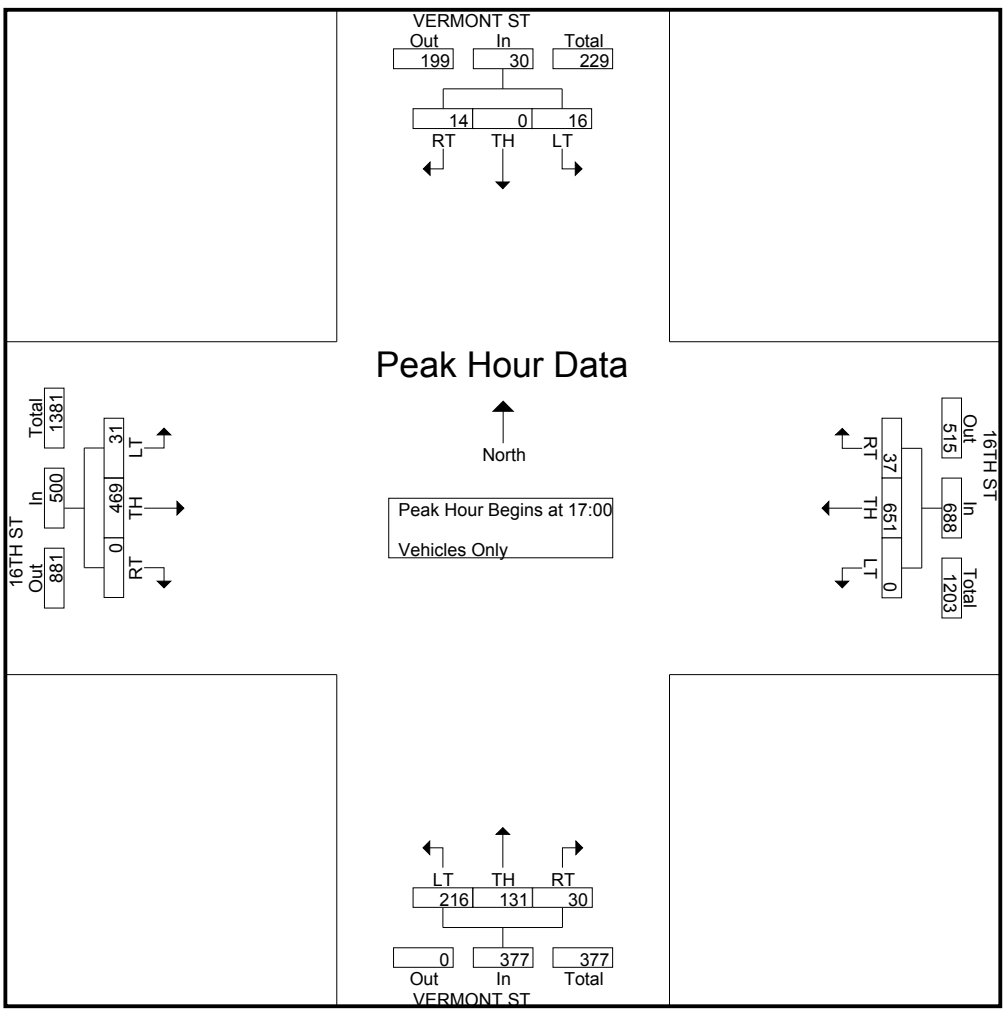
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : vermont-16-p
Site Code : 14
Start Date : 5/7/2013
Page No : 1

Groups Printed- Vehicles Only

	VERMONT ST Southbound				16TH ST Westbound				VERMONT ST Northbound				16TH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	4	0	9	13	5	147	0	152	5	52	59	116	0	113	6	119	400
16:15	0	0	2	2	5	134	0	139	4	47	66	117	0	108	3	111	369
16:30	1	0	4	5	1	137	0	138	7	56	54	117	0	117	4	121	381
16:45	1	0	4	5	4	126	0	130	4	30	41	75	0	103	5	108	318
Total	6	0	19	25	15	544	0	559	20	185	220	425	0	441	18	459	1468
17:00	3	0	0	3	6	151	0	157	3	35	50	88	0	111	8	119	367
17:15	1	0	7	8	8	155	0	163	8	28	51	87	0	111	4	115	373
17:30	4	0	7	11	8	167	0	175	10	30	57	97	0	121	13	134	417
17:45	6	0	2	8	15	178	0	193	9	38	58	105	0	126	6	132	438
Total	14	0	16	30	37	651	0	688	30	131	216	377	0	469	31	500	1595
Grand Total	20	0	35	55	52	1195	0	1247	50	316	436	802	0	910	49	959	3063
Apprch %	36.4	0	63.6		4.2	95.8	0		6.2	39.4	54.4		0	94.9	5.1		
Total %	0.7	0	1.1	1.8	1.7	39	0	40.7	1.6	10.3	14.2	26.2	0	29.7	1.6	31.3	

	VERMONT ST Southbound				16TH ST Westbound				VERMONT ST Northbound				16TH ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	3	0	0	3	6	151	0	157	3	35	50	88	0	111	8	119	367
17:15	1	0	**7**	8	8	155	0	163	8	28	51	87	0	111	4	115	373
17:30	4	0	7	**11**	8	167	0	175	**10**	30	57	97	0	121	**13**	**134**	417
17:45	**6**	0	2	8	**15**	**178**	0	**193**	9	**38**	**58**	**105**	0	**126**	6	132	**438**
Total Volume	14	0	16	30	37	651	0	688	30	131	216	377	0	469	31	500	1595
% App. Total	46.7	0	53.3		5.4	94.6	0		8	34.7	57.3		0	93.8	6.2		
PHF	.583	.000	.571	.682	.617	.914	.000	.891	.750	.862	.931	.898	.000	.931	.596	.933	.910



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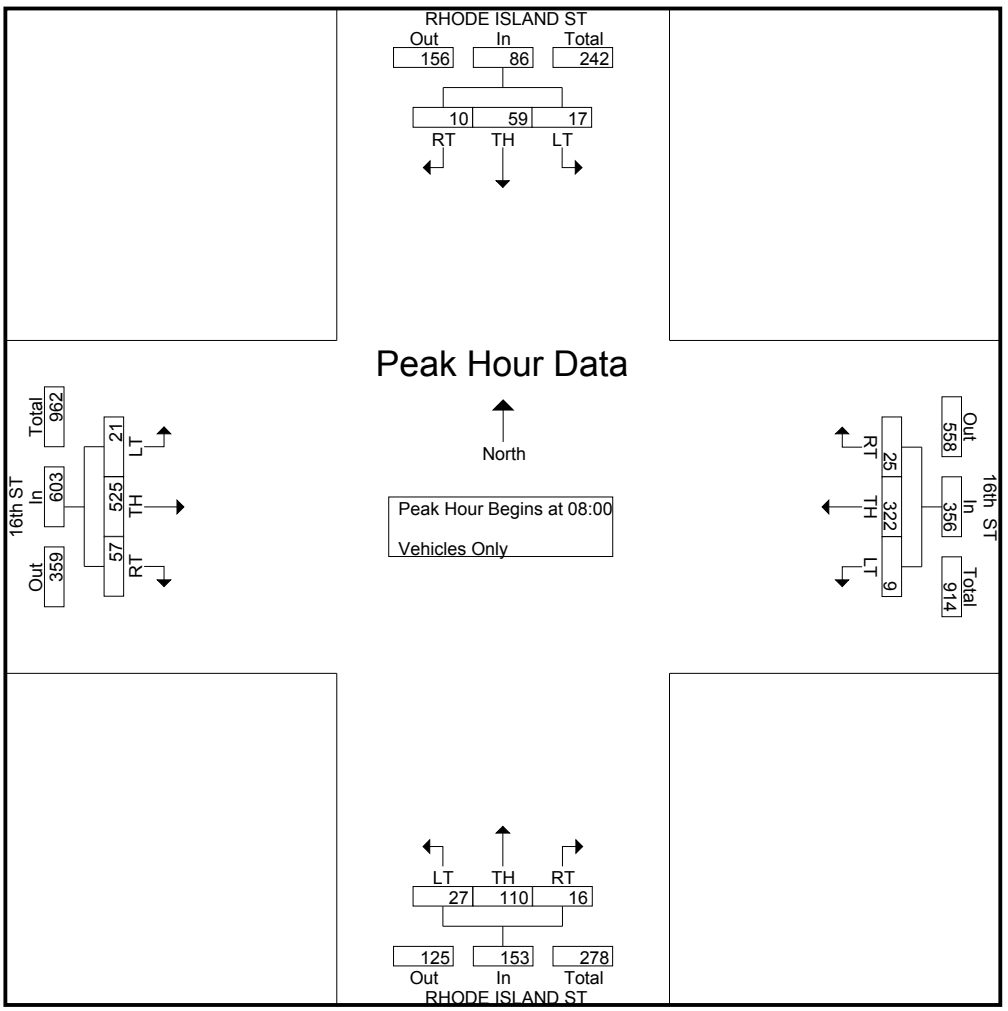
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : rhode island-16-a
Site Code : 00000000
Start Date : 5/29/2013
Page No : 1

Groups Printed- Vehicles Only

	RHODE ISLAND ST Southbound				16th ST Westbound				RHODE ISLAND ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
07:00	0	6	1	7	4	51	1	56	2	4	1	7	1	72	1	74	144
07:15	3	9	1	13	10	73	3	86	4	14	5	23	8	78	3	89	211
07:30	2	8	1	11	8	69	1	78	2	11	3	16	7	92	3	102	207
07:45	4	10	1	15	8	76	2	86	7	20	9	36	7	102	3	112	249
Total	9	33	4	46	30	269	7	306	15	49	18	82	23	344	10	377	811
08:00	5	16	5	26	6	87	1	94	4	15	4	23	5	106	3	114	257
08:15	2	13	2	17	3	83	1	87	3	24	7	34	13	143	5	161	299
08:30	2	13	7	22	10	77	2	89	6	38	4	48	20	130	4	154	313
08:45	1	17	3	21	6	75	5	86	3	33	12	48	19	146	9	174	329
Total	10	59	17	86	25	322	9	356	16	110	27	153	57	525	21	603	1198
Grand Total	19	92	21	132	55	591	16	662	31	159	45	235	80	869	31	980	2009
Apprch %	14.4	69.7	15.9		8.3	89.3	2.4		13.2	67.7	19.1		8.2	88.7	3.2		
Total %	0.9	4.6	1	6.6	2.7	29.4	0.8	33	1.5	7.9	2.2	11.7	4	43.3	1.5	48.8	

	RHODE ISLAND ST Southbound				16th ST Westbound				RHODE ISLAND ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	**5**	16	5	**26**	6	**87**	1	**94**	4	15	4	23	5	106	3	114	257
08:15	2	13	2	17	3	83	1	87	3	24	7	34	13	143	5	161	299
08:30	2	13	**7**	22	**10**	77	2	89	**6**	**38**	4	**48**	**20**	130	4	154	313
08:45	1	**17**	3	21	6	75	**5**	86	3	33	**12**	48	19	**146**	**9**	**174**	**329**
Total Volume	10	59	17	86	25	322	9	356	16	110	27	153	57	525	21	603	1198
% App. Total	11.6	68.6	19.8		7	90.4	2.5		10.5	71.9	17.6		9.5	87.1	3.5		
PHF	.500	.868	.607	.827	.625	.925	.450	.947	.667	.724	.563	.797	.713	.899	.583	.866	.910



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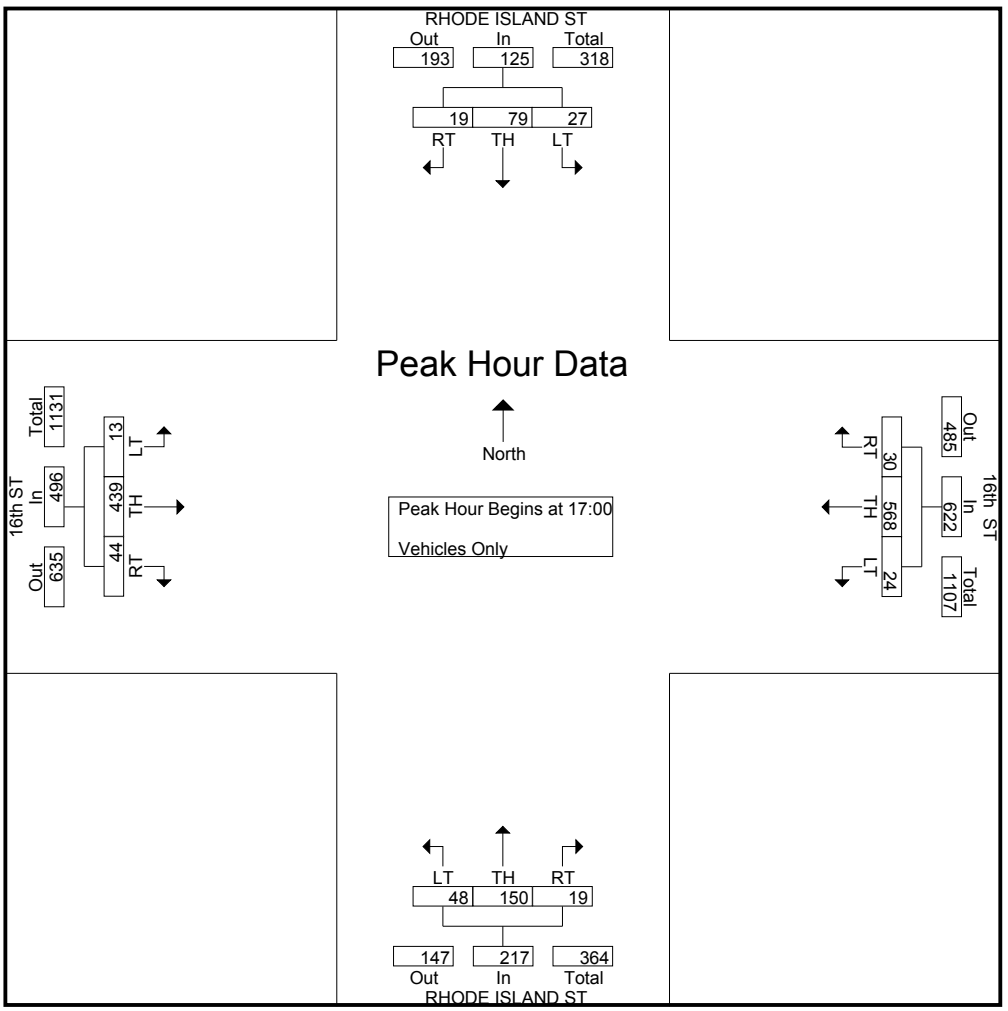
CITY OF SAN FRANCISCO
UCSF Intersections

File Name : rhode island-16-p
Site Code : 00000000
Start Date : 5/29/2013
Page No : 1

Groups Printed- Vehicles Only

	RHODE ISLAND ST Southbound				16th ST Westbound				RHODE ISLAND ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
16:00	4	14	5	23	4	119	0	123	4	25	10	39	11	86	2	99	284
16:15	4	13	4	21	9	106	3	118	5	27	12	44	4	114	0	118	301
16:30	1	18	4	23	5	107	4	116	6	36	7	49	15	90	2	107	295
16:45	2	18	6	26	8	112	1	121	4	38	15	57	12	88	2	102	306
Total	11	63	19	93	26	444	8	478	19	126	44	189	42	378	6	426	1186
17:00	3	20	6	29	8	137	2	147	7	44	10	61	10	107	1	118	355
17:15	5	23	9	37	6	147	10	163	2	38	12	52	9	106	3	118	370
17:30	4	17	5	26	9	143	8	160	8	38	17	63	12	118	3	133	382
17:45	7	19	7	33	7	141	4	152	2	30	9	41	13	108	6	127	353
Total	19	79	27	125	30	568	24	622	19	150	48	217	44	439	13	496	1460
Grand Total	30	142	46	218	56	1012	32	1100	38	276	92	406	86	817	19	922	2646
Apprch %	13.8	65.1	21.1		5.1	92	2.9		9.4	68	22.7		9.3	88.6	2.1		
Total %	1.1	5.4	1.7	8.2	2.1	38.2	1.2	41.6	1.4	10.4	3.5	15.3	3.3	30.9	0.7	34.8	

	RHODE ISLAND ST Southbound				16th ST Westbound				RHODE ISLAND ST Northbound				16th ST Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	3	20	6	29	8	137	2	147	7	**44**	10	61	10	107	1	118	355
17:15	5	**23**	**9**	**37**	6	**147**	**10**	**163**	2	38	12	52	9	106	3	118	370
17:30	4	17	5	26	**9**	143	8	160	**8**	38	**17**	**63**	12	**118**	3	**133**	**382**
17:45	**7**	19	7	33	7	141	4	152	2	30	9	41	**13**	108	**6**	127	353
Total Volume	19	79	27	125	30	568	24	622	19	150	48	217	44	439	13	496	1460
% App. Total	15.2	63.2	21.6		4.8	91.3	3.9		8.8	69.1	22.1		8.9	88.5	2.6		
PHF	.679	.859	.750	.845	.833	.966	.600	.954	.594	.852	.706	.861	.846	.930	.542	.932	.955



UCSF LRDP EIR

Weekday PM Peak Hour (4 to 6 PM)

#	Intersection Name	Date of Count	TABLE 1A - INTERSECTION TURNING MOVEMENT VOLUMES																
			Northbound				Southbound				Eastbound				Westbound				Total All
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Approaches
EXISTING COUNTS																			
Mission Bay																			
12	King St / Third St	GSW 2013	53	948	255	1,256	0	0	0	0	872	732	12	1,616	130	886	36	1,052	3,924
13	King St / Fourth St	GSW 2013	5	60	61	126	34	250	301	585	151	1,521	25	1,697	24	907	19	950	3,358
14	Fifth St / King St - I-280 ramps	11/15/2012	86	0	8	94	0	0	0	0	0	1,573	138	1,711	0	1,226	0	1,226	3,031
29	Third St / Channel St	GSW 2013	20	768	18	806	12	154	13	179	7	12	50	69	19	10	67	96	1,150
30	Third St / Mission Rock St	GSW 2013	9	804	8	821	11	196	2	209	5	4	7	16	9	6	23	38	1,084
31	Third St / 16th St	GSW 2013	254	556	5	815	18	348	146	512	78	43	257	378	3	71	47	121	1,826
32	Third St / Mariposa St	06/11/2013	38	743	35	816	16	342	234	592	131	69	40	240	19	202	11	232	1,880
33	Fourth St / Channel St	GSW 2013	7	57	4	68	70	110	10	190	19	6	10	35	3	1	30	34	327
34	Owens St / 16th St	GSW 2013	0	0	1	1	102	0	163	265	117	289	0	406	0	486	72	558	1,230
35	Seventh St / Mission Bay Drive	GSW 2013	0	786	29	815	57	215	0	272	0	0	0	0	26	0	67	93	1,180
36	Seventh St / Mississippi / 16th St	06/11/2013	71	329	38	438	68	138	35	241	47	289	75	411	58	320	290	668	1,758
37	Mariposa St / I-280 SB on-ramp	GSW 2013	0	0	0	0	0	0	0	0	0	86	596	682	485	628	0	1,113	1,795
38	Mariposa St / I-280 NB off-ramp	GSW 2013	482	0	180	662	0	0	0	0	0	84	0	84	0	639	0	639	1,385
201	Owens St / Mission Bay Dr	05/09/2013	33	0	0	33	0	0	0	0	91	0	12	103	0	0	0	0	136
202	Third St / Mission Bay Dr North	F and P	6	784	0	790	0	315	2	317	0	0	0	0	0	0	0	0	1,107
203	Third St / Mission Bay Dr South	F and P	0	772	13	785	5	310	0	315	18	2	9	29	0	0	0	0	1,129
204	Fourth St / 16th St	F and P	8	1	35	44	46	1	142	189	82	348	4	434	1	428	44	473	1,140
205	Mariposa St / Minnesota St / Fourth St	05/07/2013	38	0	8	46	0	0	0	0	0	555	28	583	2	494	0	496	1,125
206	Rhode Island St / 16th St	05/29/2013	48	150	19	217	27	79	19	125	13	439	44	496	24	568	30	622	1,460
207	Vermont St / 16th St	05/07/2013	216	131	30	377	16	0	14	30	31	469	0	500	0	651	37	688	1,595
208	Potrero Av / 16th St	05/07/2013	115	519	42	676	107	864	160	1,131	34	344	208	586	38	640	51	729	3,122
209	Seventh St/Brannan St	05/29/2013	44	1,109	98	1,251	0	0	0	0	248	753	154	1,155	66	365	201	632	3,038

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Sutter St

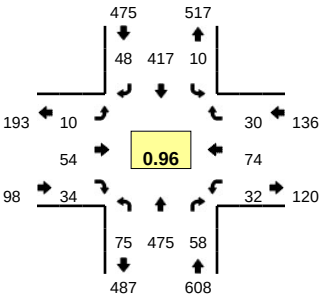
CITY/STATE: San Francisco, CA

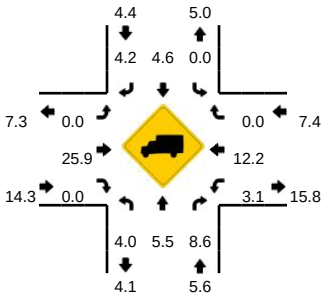
QC JOB #: 10944927

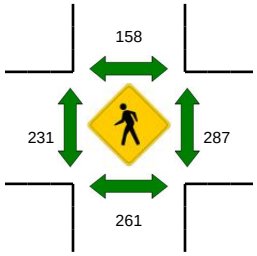
DATE: Wed, May 15 2013

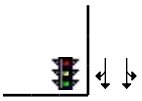
Peak-Hour: 7:45 AM -- 8:45 AM

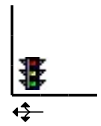
Peak 15-Min: 8:15 AM -- 8:30 AM

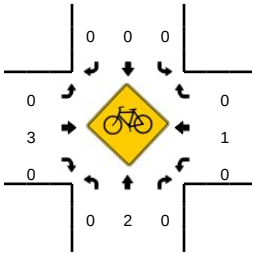


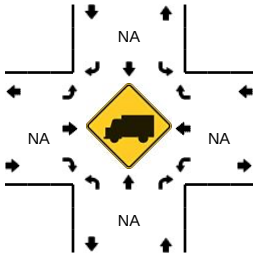


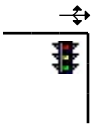


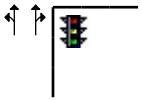


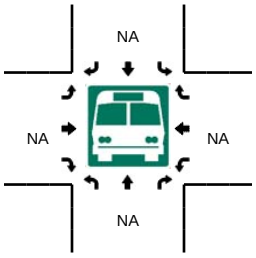












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	67	8	1	1	66	11	0	1	12	4	0	3	16	6	0	206	
7:15 AM	13	100	12	2	3	74	11	0	1	12	3	0	11	20	9	0	271	
7:30 AM	10	101	19	2	0	102	8	0	0	20	9	0	3	14	8	0	296	
7:45 AM	17	123	19	1	4	109	11	0	2	10	6	0	10	18	8	0	338	1111
8:00 AM	16	100	11	1	0	112	15	2	2	19	11	0	10	18	9	0	326	1231
8:15 AM	24	130	11	1	3	106	10	0	3	13	9	0	7	19	7	0	343	1303
8:30 AM	14	122	17	1	1	90	12	0	3	12	8	0	5	19	6	0	310	1317
8:45 AM	17	122	16	2	1	101	9	0	2	16	5	0	9	23	10	0	333	1312

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	96	520	44	4	12	424	40	0	12	52	36	0	28	76	28	0	1372
Heavy Trucks	8	28	4		0	20	0		0	8	0		0	12	0		80
Pedestrians		264				172				224				308			968
Bicycles	0	0	0		0	0	0		0	3	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Sutter St

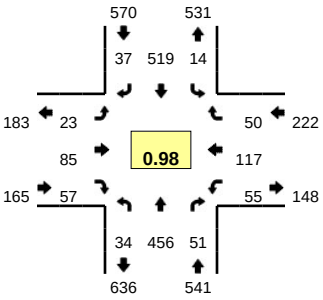
CITY/STATE: San Francisco, CA

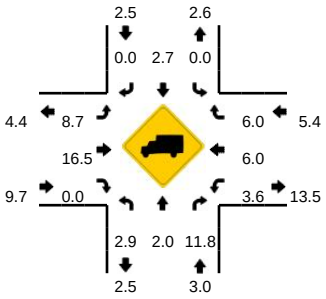
QC JOB #: 10944928

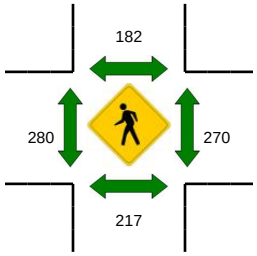
DATE: Wed, May 15 2013

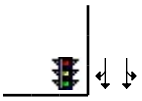
Peak-Hour: 4:15 PM -- 5:15 PM

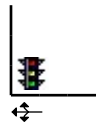
Peak 15-Min: 4:15 PM -- 4:30 PM

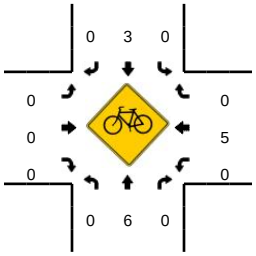


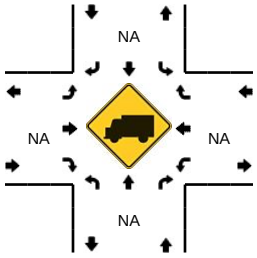


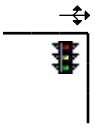


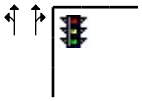


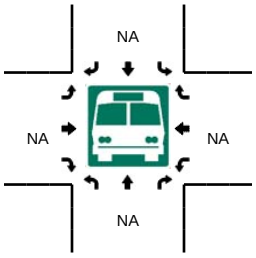












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	119	13	1	3	115	10	0	2	27	21	0	8	27	12	0	373	
4:15 PM	11	106	16	1	5	131	10	0	8	22	19	0	14	22	18	0	383	
4:30 PM	13	113	10	2	5	115	12	1	6	24	11	0	13	35	10	0	370	
4:45 PM	3	112	15	1	2	118	7	1	2	28	9	0	15	39	11	0	363	1489
5:00 PM	2	125	10	1	0	155	8	0	7	11	18	0	13	21	11	0	382	1498
5:15 PM	8	137	17	0	0	117	7	0	5	23	10	0	14	26	9	0	373	1488
5:30 PM	4	116	9	0	3	137	12	0	8	26	15	0	6	25	5	0	366	1484
5:45 PM	2	120	10	2	0	112	9	0	6	16	6	0	12	27	13	0	335	1456

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	424	64	4	20	524	40	0	32	88	76	0	56	88	72	0	1532
Heavy Trucks	0	16	4		0	8	0		0	12	0		4	4	12		60
Pedestrians		260				296				340				296			1192
Bicycles	0	1	0		0	1	0		0	0	0		0	3	0		5
Railroad Stopped Buses																	

Comments:

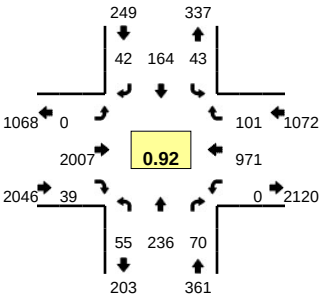
Report generated on 5/30/2013 1:32 PM

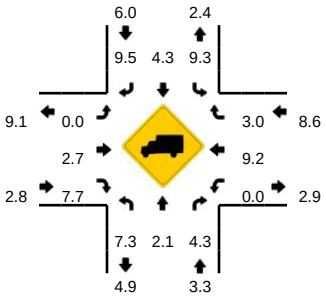
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

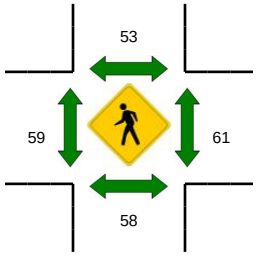
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

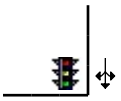
LOCATION: Scott St -- Geary Blvd | **QC JOB #:** 10944929
CITY/STATE: San Francisco, CA | **DATE:** Wed, May 15 2013

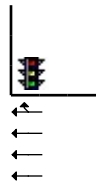
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

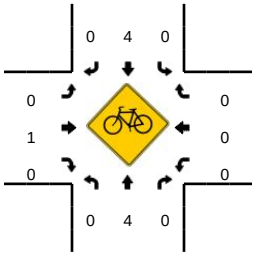


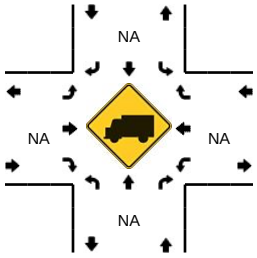


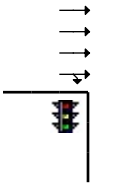


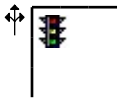


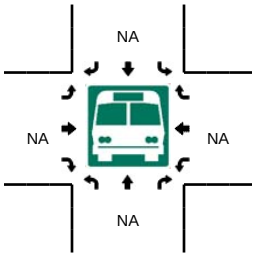












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Geary Blvd (Eastbound)				Geary Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	21	13	0	5	20	8	0	0	261	5	0	0	154	22	0	515	
7:15 AM	7	37	22	0	11	20	7	0	0	346	8	0	1	154	23	0	636	
7:30 AM	15	41	21	0	11	25	11	0	0	485	9	0	0	180	18	0	816	
7:45 AM	12	65	14	0	11	37	7	0	0	572	14	0	0	257	23	0	1012	2979
8:00 AM	12	61	13	0	10	41	11	0	0	460	3	0	0	222	28	0	861	3325
8:15 AM	14	62	21	0	10	42	9	0	0	480	8	0	0	247	25	0	918	3607
8:30 AM	17	48	22	0	12	44	15	0	0	495	14	0	0	245	25	0	937	3728
8:45 AM	29	76	25	0	8	34	16	0	0	506	14	0	0	221	21	0	950	3666

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	260	56	0	44	148	28	0	0	2288	56	0	0	1028	92	0	4048
Heavy Trucks	4	4	0		0	8	4		0	80	4		0	104	0		208
Pedestrians		40				44				64				60			208
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

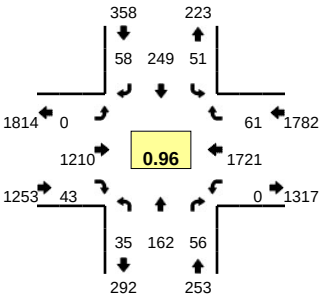
Type of peak hour being reported: Intersection Peak

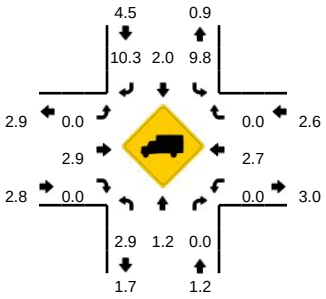
Method for determining peak hour: Total Entering Volume

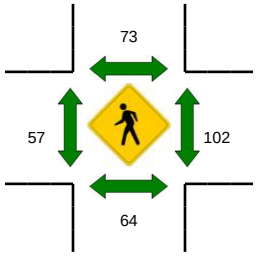
LOCATION: Scott St -- Geary Blvd
CITY/STATE: San Francisco, CA

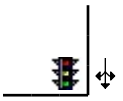
QC JOB #: 10944930
DATE: Wed, May 15 2013

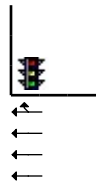
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

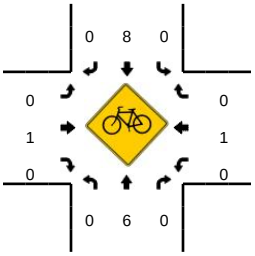


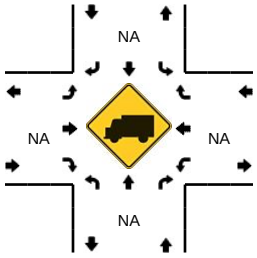


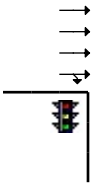


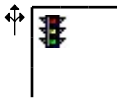


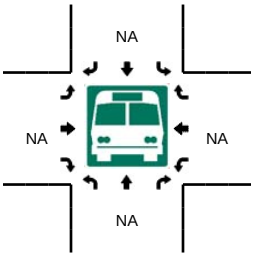












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Geary Blvd (Eastbound)				Geary Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	29	12	0	10	55	23	0	0	274	10	0	0	390	16	0	833	
4:15 PM	6	49	19	0	14	44	15	0	0	273	17	0	0	376	16	1	830	
4:30 PM	17	46	15	0	11	58	16	0	0	278	14	0	0	352	31	0	838	
4:45 PM	9	45	16	0	11	53	16	0	0	307	10	0	0	375	13	0	855	3356
5:00 PM	9	45	17	0	13	56	18	0	0	285	13	0	0	409	12	0	877	3400
5:15 PM	10	36	17	0	12	70	19	0	0	305	14	0	0	421	18	0	922	3492
5:30 PM	4	50	14	0	14	65	9	0	0	333	8	0	0	435	17	0	949	3603
5:45 PM	12	31	8	0	12	58	12	0	0	287	8	0	0	456	14	0	898	3646

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	200	56	0	56	260	36	0	0	1332	32	0	0	1740	68	0	3796
Heavy Trucks	0	0	0		0	12	4		0	44	0		0	60	0		120
Pedestrians		56				84				52				116			308
Bicycles	0	1	0		0	2	0		0	0	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

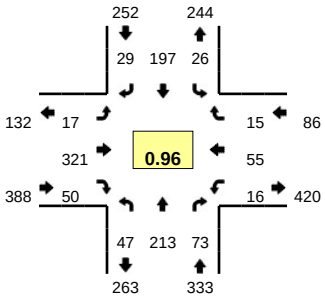
Type of peak hour being reported: Intersection Peak

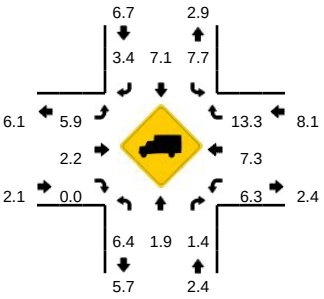
Method for determining peak hour: Total Entering Volume

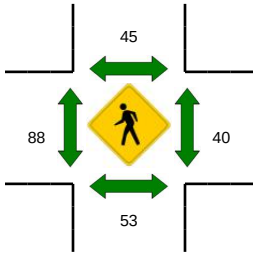
LOCATION: Scott St -- Post St
CITY/STATE: San Francisco, CA

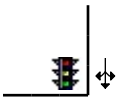
QC JOB #: 10944931
DATE: Wed, May 15 2013

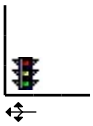
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

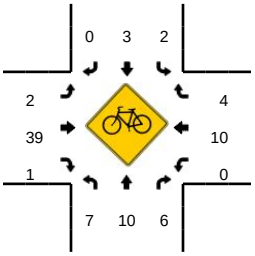


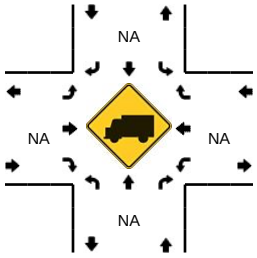


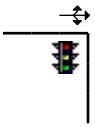


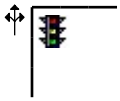


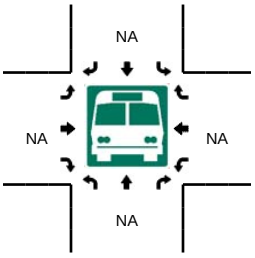












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	25	9	0	2	19	6	0	0	36	7	0	5	8	3	0	130	
7:15 AM	7	31	17	0	4	22	4	0	3	46	9	0	8	8	2	0	161	
7:30 AM	8	33	14	0	3	38	7	0	3	59	5	0	0	12	5	0	187	
7:45 AM	12	57	16	0	12	40	4	0	3	80	8	0	7	7	2	0	248	726
8:00 AM	10	60	13	0	5	54	8	0	3	83	13	1	4	11	4	0	269	865
8:15 AM	12	45	24	0	4	44	9	0	3	79	9	0	4	16	2	0	251	955
8:30 AM	11	51	11	0	11	53	8	0	8	84	17	0	3	13	7	0	277	1045
8:45 AM	14	57	25	0	6	46	4	0	2	75	11	0	5	15	2	0	262	1059

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	204	44	0	44	212	32	0	32	336	68	0	12	52	28	0	1108
Heavy Trucks	4	4	4		4	20	0		0	4	0		0	0	4		44
Pedestrians		68				44				68				40			220
Bicycles	1	1	1		0	1	0		1	10	0		0	2	3		20
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

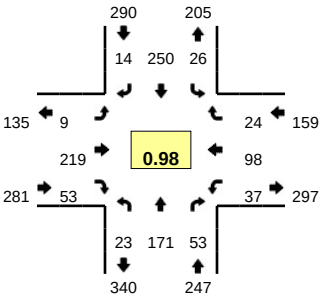
Type of peak hour being reported: Intersection Peak

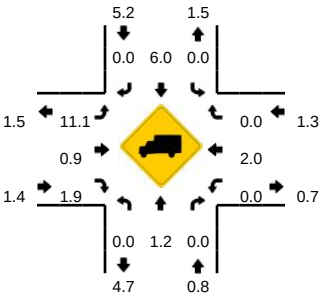
Method for determining peak hour: Total Entering Volume

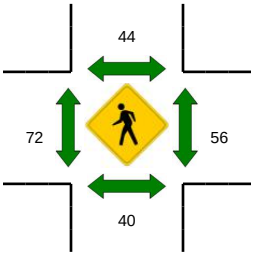
LOCATION: Scott St -- Post St
CITY/STATE: San Francisco, CA

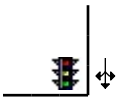
QC JOB #: 10944932
DATE: Wed, May 15 2013

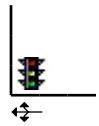
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

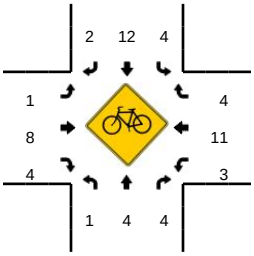


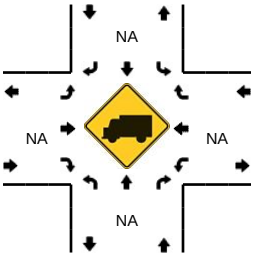


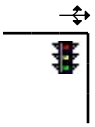


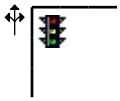


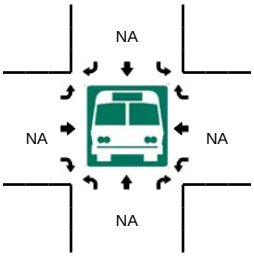












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	33	4	0	6	59	9	0	5	61	19	1	6	17	4	0	233	
4:15 PM	7	45	9	0	2	63	6	0	6	57	10	0	6	17	6	1	235	
4:30 PM	8	48	17	0	2	56	7	0	2	57	16	1	5	20	5	0	244	
4:45 PM	4	43	14	0	5	55	2	0	3	57	14	0	11	31	9	0	248	960
5:00 PM	1	43	16	0	5	66	7	0	2	58	13	0	8	25	5	0	249	976
5:15 PM	10	35	11	0	7	71	3	1	1	46	14	0	10	18	7	0	234	975
5:30 PM	8	50	12	0	8	58	2	0	3	58	12	0	8	24	3	0	246	977
5:45 PM	6	26	7	0	3	60	6	0	1	46	8	0	10	24	4	0	201	930

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	172	64	0	20	264	28	0	8	232	52	0	32	100	20	0	996
Heavy Trucks	0	0	0		0	16	0		0	0	0		0	0	0		16
Pedestrians		24				28				76				68			196
Bicycles	0	2	1		1	4	0		0	2	2		1	6	0		19
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

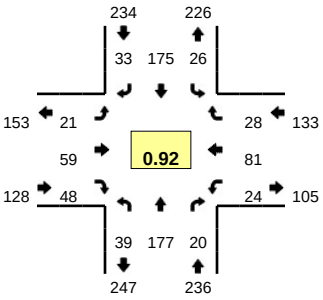
Type of peak hour being reported: Intersection Peak

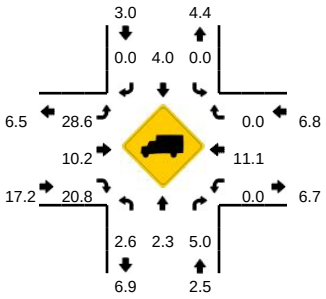
Method for determining peak hour: Total Entering Volume

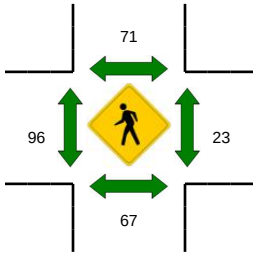
LOCATION: Scott St -- Sutter St
CITY/STATE: San Francisco, CA

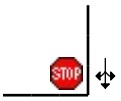
QC JOB #: 10944933
DATE: Wed, May 15 2013

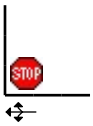
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

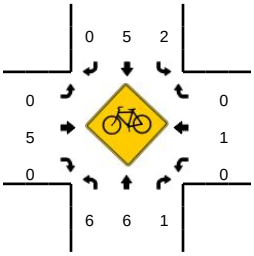


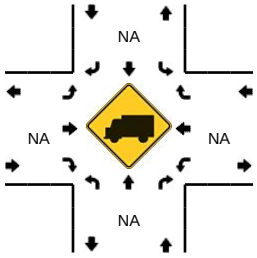


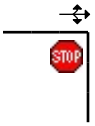


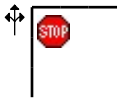


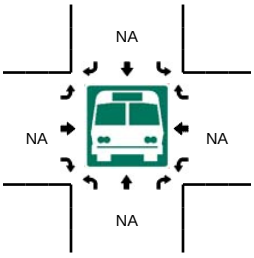












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	22	1	0	2	24	3	0	0	11	5	0	1	17	0	0	90	
7:15 AM	11	22	2	0	3	21	5	0	5	12	8	0	1	21	6	0	117	
7:30 AM	3	35	5	0	4	34	6	0	4	16	10	1	3	13	2	0	136	
7:45 AM	8	48	7	0	5	41	7	0	5	9	13	0	4	20	6	0	173	516
8:00 AM	10	53	3	0	2	48	2	0	6	13	11	0	5	24	6	0	183	609
8:15 AM	6	29	6	0	8	41	9	0	3	17	9	0	6	20	8	0	162	654
8:30 AM	10	51	5	0	6	53	7	0	6	12	12	0	4	19	2	0	187	705
8:45 AM	13	44	6	0	10	33	15	0	6	17	16	0	9	18	12	0	199	731

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	176	24	0	40	132	60	0	24	68	64	0	36	72	48	0	796
Heavy Trucks	4	4	0		0	0	0		4	12	12		0	12	0		48
Pedestrians		84				80				80				16			260
Bicycles	3	1	0		1	1	0		0	1	0		0	0	0		7
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

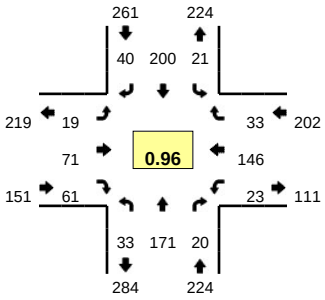
Type of peak hour being reported: Intersection Peak

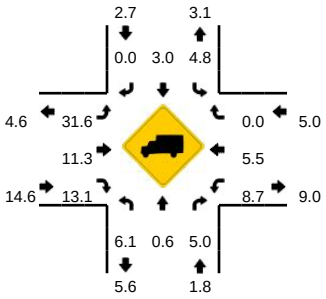
Method for determining peak hour: Total Entering Volume

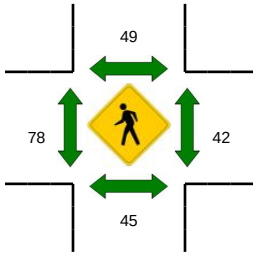
LOCATION: Scott St -- Sutter St
CITY/STATE: San Francisco, CA

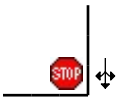
QC JOB #: 10944934
DATE: Wed, May 15 2013

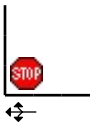
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

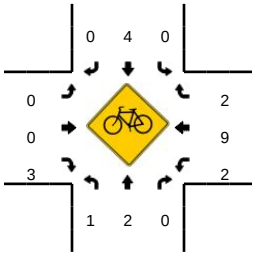


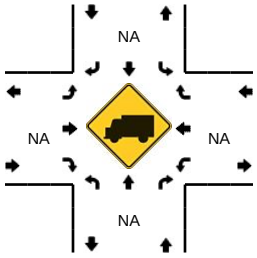


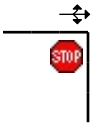


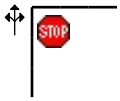


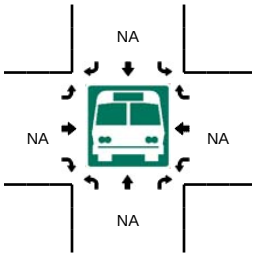












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	29	5	0	3	52	14	0	8	21	16	0	4	28	7	1	196	
4:15 PM	10	42	6	0	4	51	11	0	7	17	15	0	5	36	9	0	213	
4:30 PM	8	39	6	0	4	45	7	1	7	19	15	0	6	44	8	0	209	
4:45 PM	6	49	3	0	6	44	13	0	5	24	16	0	4	40	9	0	219	837
5:00 PM	9	41	5	0	6	60	9	0	0	11	15	0	8	26	7	0	197	838
5:15 PM	8	32	1	0	1	62	8	0	4	26	11	0	10	30	6	0	199	824
5:30 PM	5	45	2	0	6	56	7	0	9	15	9	0	3	28	8	0	193	808
5:45 PM	3	25	3	0	7	55	11	0	4	17	8	0	4	34	9	1	181	770

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	196	12	0	24	176	52	0	20	96	64	0	16	160	36	0	876
Heavy Trucks	0	4	0		0	4	0		8	12	8		4	4	0		44
Pedestrians		68				28				48				44			188
Bicycles	0	0	0		0	0	0		0	0	0		1	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Pine St

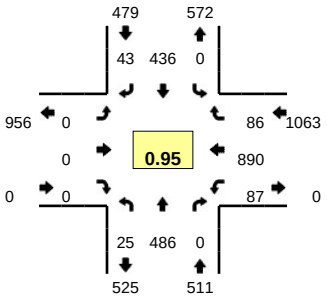
CITY/STATE: San Francisco, CA

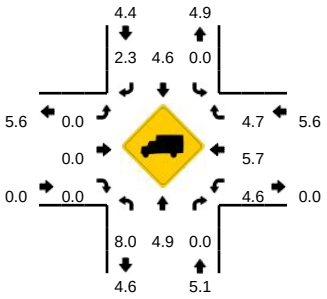
QC JOB #: 10944935

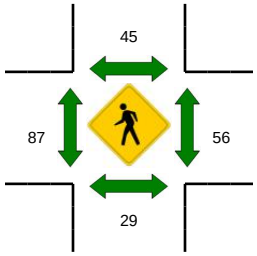
DATE: Wed, May 15 2013

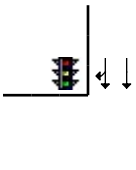
Peak-Hour: 7:45 AM -- 8:45 AM

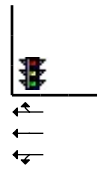
Peak 15-Min: 8:00 AM -- 8:15 AM

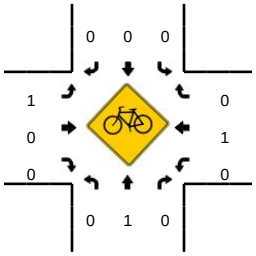


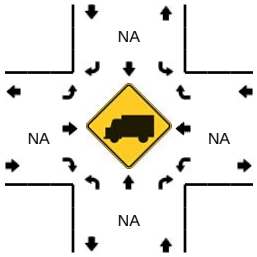


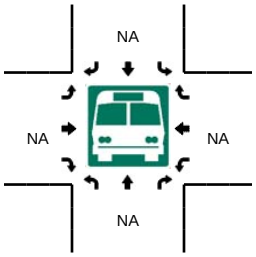












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Pine St (Eastbound)				Pine St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	61	0	0	0	83	6	0	0	0	0	0	13	138	3	0	308	
7:15 AM	4	89	0	3	0	86	8	0	1	0	0	0	11	133	9	0	344	
7:30 AM	5	98	0	0	0	110	6	0	0	0	0	0	16	194	11	0	440	
7:45 AM	7	134	0	1	0	121	11	0	0	0	0	0	20	213	13	0	520	1612
8:00 AM	7	108	0	1	0	121	12	0	0	0	0	0	21	255	16	0	541	1845
8:15 AM	3	127	0	0	0	100	13	0	0	0	0	0	22	219	26	0	510	2011
8:30 AM	6	117	0	0	0	94	7	0	0	0	0	0	24	203	31	0	482	2053
8:45 AM	8	113	0	1	0	98	12	0	0	0	0	0	26	227	20	0	505	2038

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	432	0	4	0	484	48	0	0	0	0	0	84	1020	64	0	2164
Heavy Trucks	4	20	0		0	24	0		0	0	0		8	52	0		108
Pedestrians		52				44				100				40			236
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Pine St

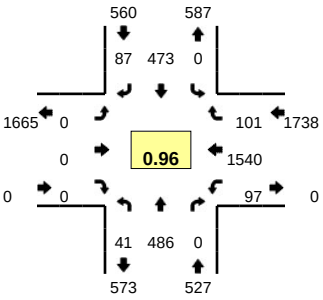
CITY/STATE: San Francisco, CA

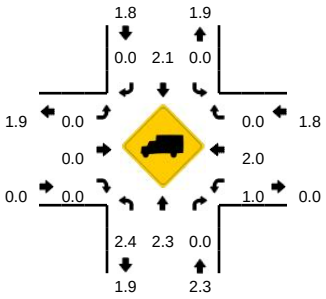
QC JOB #: 10944936

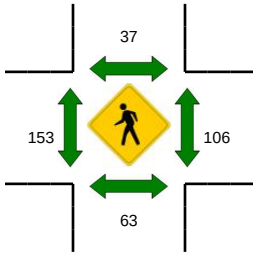
DATE: Wed, May 15 2013

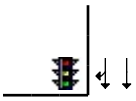
Peak-Hour: 5:00 PM -- 6:00 PM

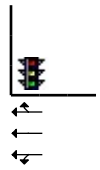
Peak 15-Min: 5:30 PM -- 5:45 PM

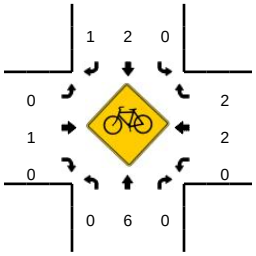


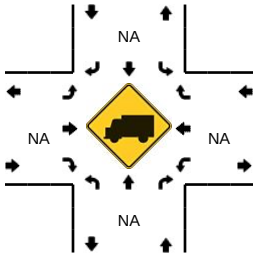


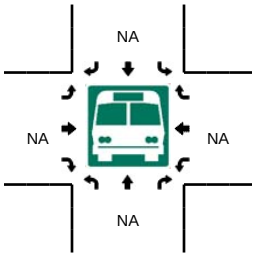












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Pine St (Eastbound)				Pine St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	107	0	0	0	111	25	0	0	0	0	0	21	330	23	0	629	
4:15 PM	11	119	0	0	0	118	14	0	0	0	0	0	19	379	21	0	681	
4:30 PM	14	118	0	1	0	104	15	0	0	0	0	0	17	323	13	0	605	
4:45 PM	9	130	0	2	0	101	17	0	0	0	0	0	20	341	16	0	636	2551
5:00 PM	10	116	0	3	0	139	18	0	0	0	0	0	21	369	23	0	699	2621
5:15 PM	12	130	0	0	0	97	31	0	0	0	0	0	25	405	19	0	719	2659
5:30 PM	6	126	0	0	0	132	23	0	0	0	0	0	22	406	23	0	738	2792
5:45 PM	10	114	0	0	0	105	15	0	0	0	0	0	29	360	36	0	669	2825

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	504	0	0	0	528	92	0	0	0	0	0	88	1624	92	0	2952
Heavy Trucks	0	8	0		0	8	0		0	0	0		4	36	0		56
Pedestrians		68				36				144				64			312
Bicycles	0	1	0		0	0	1		0	0	0		0	1	1		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Bush St

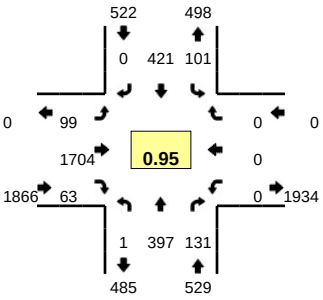
QC JOB #: 10944937

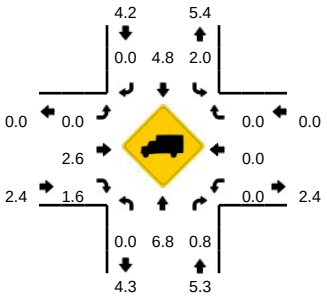
CITY/STATE: San Francisco, CA

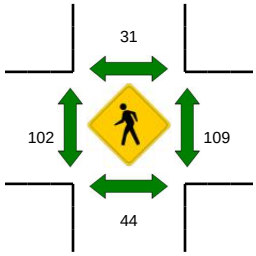
DATE: Wed, May 15 2013

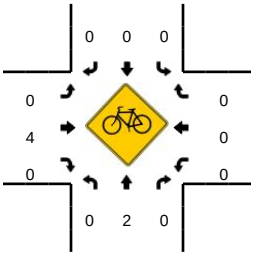
Peak-Hour: 7:45 AM -- 8:45 AM

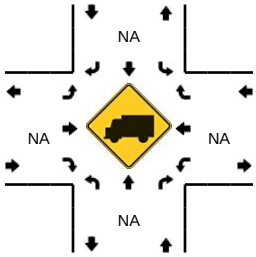
Peak 15-Min: 7:45 AM -- 8:00 AM

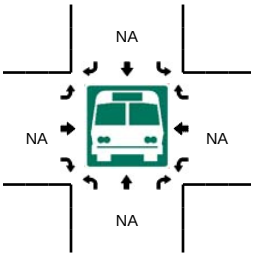












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	56	18	0	30	66	0	0	12	223	14	0	0	0	0	0	419	
7:15 AM	0	84	29	0	17	83	1	1	15	318	8	0	0	0	0	0	556	
7:30 AM	0	92	28	0	24	107	0	1	14	392	12	0	0	0	0	0	670	
7:45 AM	0	110	29	0	30	111	0	1	26	447	16	0	0	0	0	0	770	2415
8:00 AM	0	86	33	0	21	119	0	1	29	441	11	0	0	0	0	0	741	2737
8:15 AM	0	100	31	1	24	99	0	0	31	404	20	0	0	0	0	0	710	2891
8:30 AM	0	101	38	0	24	92	0	0	13	412	16	0	0	0	0	0	696	2917
8:45 AM	0	102	42	0	21	104	0	0	20	390	15	0	0	0	0	0	694	2841

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	440	116	0	120	444	0	4	104	1788	64	0	0	0	0	0	3080
Heavy Trucks	0	16	0		4	16	0		0	52	4		0	0	0		92
Pedestrians		44				32				60				72			208
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

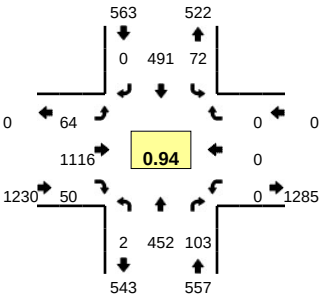
Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Bush St

QC JOB #: 10944938

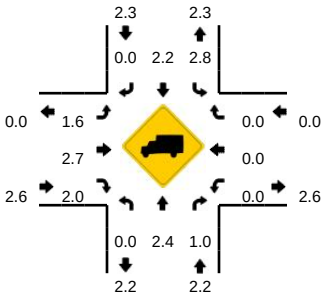
CITY/STATE: San Francisco, CA

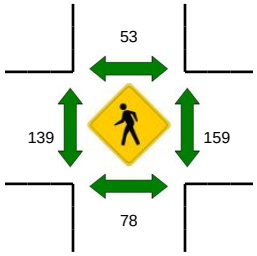
DATE: Wed, May 15 2013

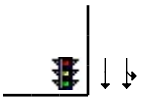


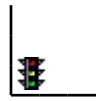
Peak-Hour: 5:00 PM -- 6:00 PM

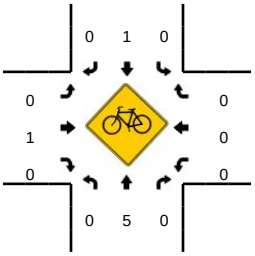
Peak 15-Min: 5:30 PM -- 5:45 PM

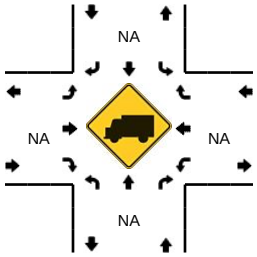


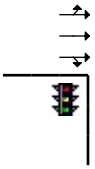


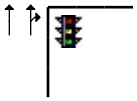


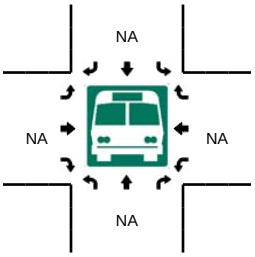












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	102	34	0	16	112	0	0	17	210	11	0	0	0	0	0	502	
4:15 PM	0	111	25	0	18	117	0	1	15	230	23	0	0	0	0	0	540	
4:30 PM	0	106	23	0	16	109	0	0	34	246	22	0	0	0	0	0	556	
4:45 PM	0	104	23	1	19	105	0	0	29	240	18	0	0	0	0	0	539	2137
5:00 PM	0	109	25	0	15	141	0	2	20	268	16	0	0	0	0	0	596	2231
5:15 PM	0	125	23	1	13	103	0	0	10	282	11	0	0	0	0	0	568	2259
5:30 PM	0	111	26	0	20	135	0	1	17	304	13	0	0	0	0	0	627	2330
5:45 PM	0	107	29	1	18	112	0	3	17	262	10	0	0	0	0	0	559	2350

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	444	104	0	80	540	0	4	68	1216	52	0	0	0	0	0	2508
Heavy Trucks	0	12	0		4	12	0		0	20	0		0	0	0		48
Pedestrians		68				48				124				148			388
Bicycles	0	2	0		0	0	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Post St

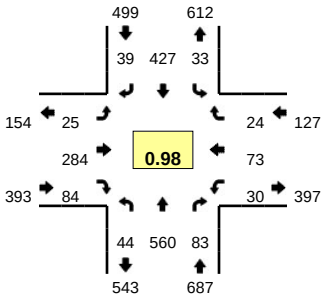
CITY/STATE: San Francisco, CA

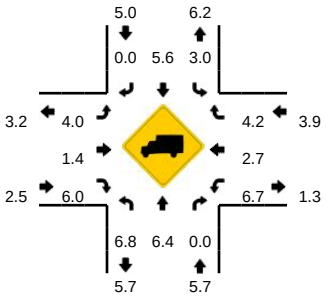
QC JOB #: 10944939

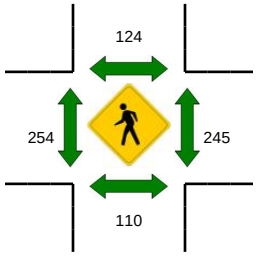
DATE: Wed, May 15 2013

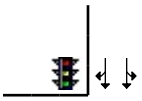
Peak-Hour: 7:45 AM -- 8:45 AM

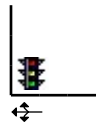
Peak 15-Min: 8:30 AM -- 8:45 AM

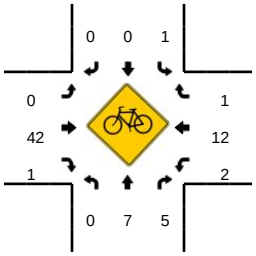


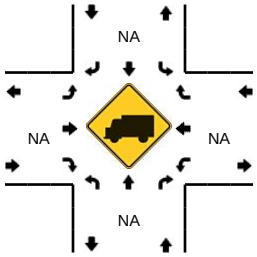


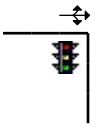


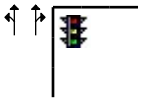


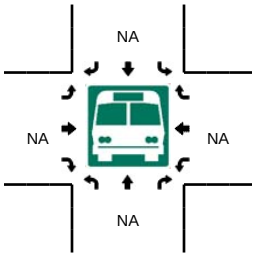












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	76	14	1	7	56	8	0	2	24	4	0	6	11	3	0	219	
7:15 AM	7	112	8	0	3	74	9	0	4	41	12	0	2	11	2	0	285	
7:30 AM	11	126	14	0	3	92	10	0	3	52	14	0	7	15	5	0	352	
7:45 AM	13	145	14	0	11	114	6	1	6	62	16	0	7	16	4	0	415	1271
8:00 AM	11	128	19	0	9	110	13	0	1	77	25	0	9	18	4	0	424	1476
8:15 AM	10	138	28	1	5	100	12	1	7	65	24	0	9	23	8	0	431	1622
8:30 AM	8	149	22	1	5	103	8	1	11	80	19	0	5	16	8	0	436	1706
8:45 AM	14	138	22	0	11	89	16	0	2	60	27	0	8	14	13	0	414	1705

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	596	88	4	20	412	32	4	44	320	76	0	20	64	32	0	1744
Heavy Trucks	0	36	0		0	20	0		0	4	4		0	0	4		68
Pedestrians		100				112				300				244			756
Bicycles	0	1	2		0	0	0		0	9	0		1	3	0		16
Railroad Stopped Buses																	

Comments:

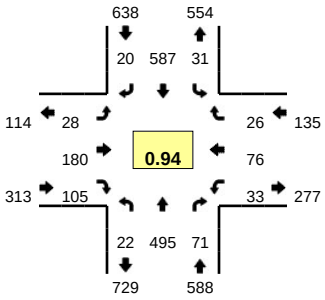
Report generated on 5/30/2013 1:32 PM

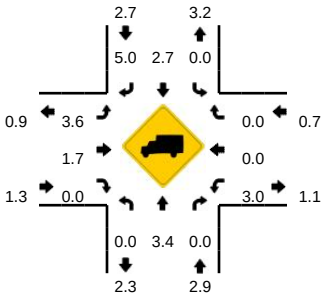
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

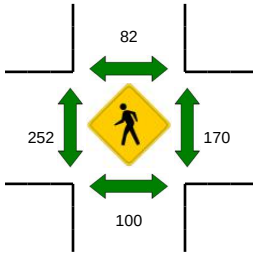
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

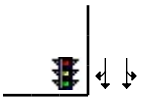
LOCATION: Divisadero St -- Post St | **QC JOB #:** 10944940
CITY/STATE: San Francisco, CA | **DATE:** Wed, May 15 2013

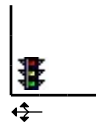
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

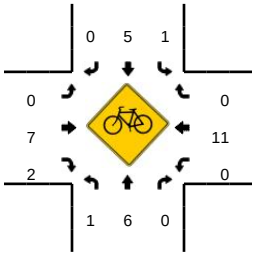


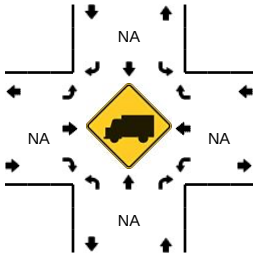


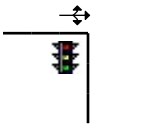


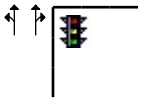


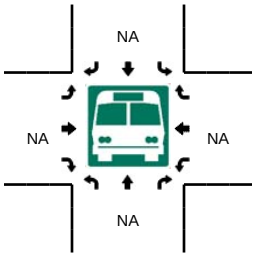












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	129	31	1	13	115	11	0	7	44	31	0	13	17	10	0	429	
4:15 PM	6	111	22	0	7	147	5	4	8	35	37	0	8	13	11	0	414	
4:30 PM	3	116	16	1	6	126	6	3	7	46	37	0	10	14	10	0	401	
4:45 PM	3	119	16	0	8	133	4	2	6	50	32	0	5	23	7	0	408	1652
5:00 PM	6	116	19	1	9	167	9	1	5	44	33	0	7	25	4	0	446	1669
5:15 PM	1	137	20	1	4	134	4	1	9	43	24	0	11	17	6	0	412	1667
5:30 PM	8	123	16	2	5	153	3	1	8	43	16	0	10	11	9	0	408	1674
5:45 PM	5	119	10	0	7	125	1	0	5	43	18	0	10	20	5	0	368	1634

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	464	76	4	36	668	36	4	20	176	132	0	28	100	16	0	1784
Heavy Trucks	0	12	0		0	20	0		0	4	0		0	0	0		36
Pedestrians		104				96				324				224			748
Bicycles	0	0	0		0	1	0		0	2	1		0	4	0		8
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Geary Blvd

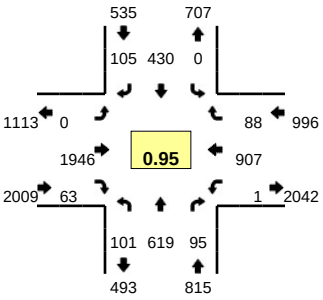
CITY/STATE: San Francisco, CA

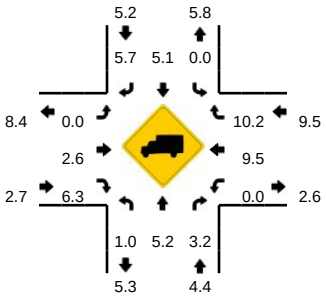
QC JOB #: 10944941

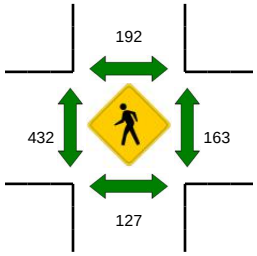
DATE: Wed, May 15 2013

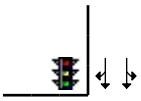
Peak-Hour: 7:45 AM -- 8:45 AM

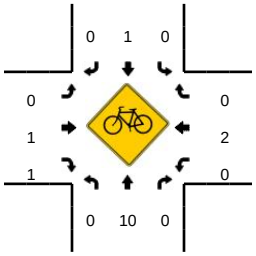
Peak 15-Min: 7:45 AM -- 8:00 AM

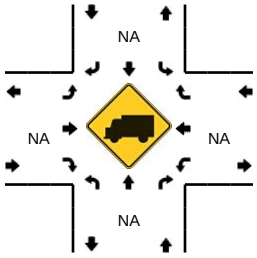


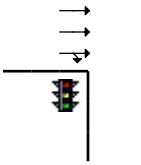


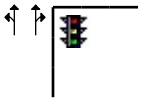


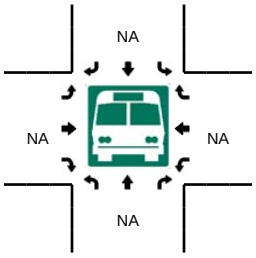












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Geary Blvd (Eastbound)				Geary Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	16	89	9	0	1	61	7	0	0	257	12	0	0	142	15	0	609	
7:15 AM	17	121	13	0	0	88	9	0	0	342	8	0	0	144	14	0	756	
7:30 AM	16	137	13	0	0	93	28	0	0	475	12	0	0	166	11	0	951	
7:45 AM	23	149	27	0	0	105	18	0	0	562	11	0	0	228	26	0	1149	3465
8:00 AM	29	139	13	0	0	125	21	0	0	442	15	0	0	211	19	0	1014	3870
8:15 AM	23	164	26	0	0	111	28	0	0	465	17	0	0	234	22	1	1091	4205
8:30 AM	26	167	29	0	0	89	38	0	0	477	20	0	0	234	21	0	1101	4355
8:45 AM	26	160	20	0	0	82	40	0	0	508	24	0	0	233	18	0	1111	4317

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	596	108	0	0	420	72	0	0	2248	44	0	0	912	104	0	4596
Heavy Trucks	0	16	8		0	16	4		0	68	0		0	88	8		208
Pedestrians		148				220				356				168			892
Bicycles	0	3	0		0	0	0		0	0	1		0	1	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Divisadero St -- Geary Blvd

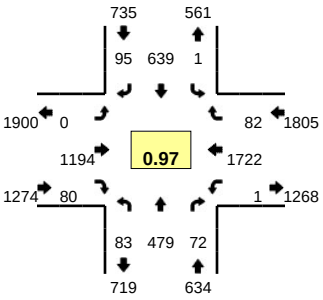
CITY/STATE: San Francisco, CA

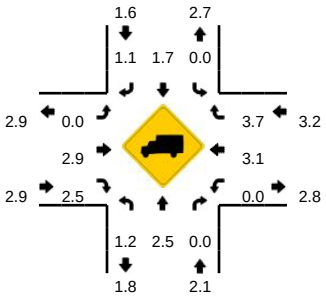
QC JOB #: 10944942

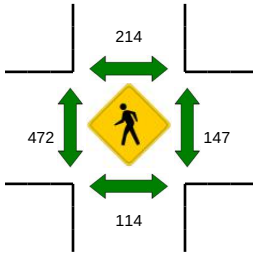
DATE: Wed, May 15 2013

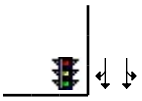
Peak-Hour: 5:00 PM -- 6:00 PM

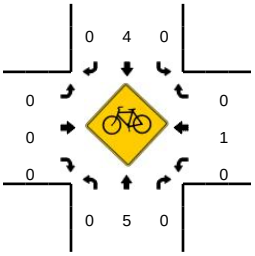
Peak 15-Min: 5:15 PM -- 5:30 PM

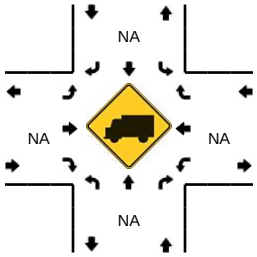


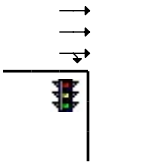


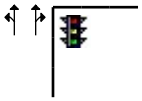


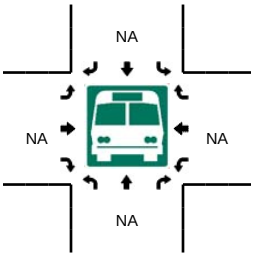












15-Min Count Period Beginning At	Divisadero St (Northbound)				Divisadero St (Southbound)				Geary Blvd (Eastbound)				Geary Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	24	124	25	1	2	137	24	0	0	275	13	0	0	385	36	0	1046	
4:15 PM	24	118	12	0	0	170	22	0	0	279	27	0	0	365	18	0	1035	
4:30 PM	31	109	16	0	1	152	26	0	0	270	17	0	0	361	23	0	1006	
4:45 PM	30	110	25	0	0	139	30	0	0	291	18	0	0	382	22	0	1047	4134
5:00 PM	11	126	16	0	0	182	33	0	0	286	21	0	0	414	21	0	1110	4198
5:15 PM	25	135	19	0	0	157	18	0	0	309	28	0	0	438	19	0	1148	4311
5:30 PM	25	105	22	0	1	158	24	0	0	326	18	0	0	425	20	1	1125	4430
5:45 PM	22	113	15	0	0	142	20	0	0	273	13	0	0	445	22	0	1065	4448

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	100	540	76	0	0	628	72	0	0	1236	112	0	0	1752	76	0	4592
Heavy Trucks	0	16	0		0	16	0		0	36	4		0	48	4		124
Pedestrians		96				232				496				128			952
Bicycles	0	0	0		0	2	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Broderick St -- Geary Blvd

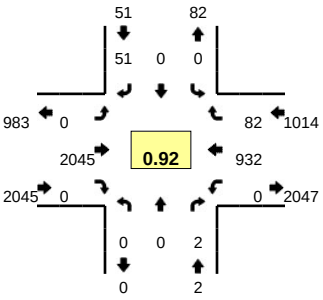
CITY/STATE: San Francisco, CA

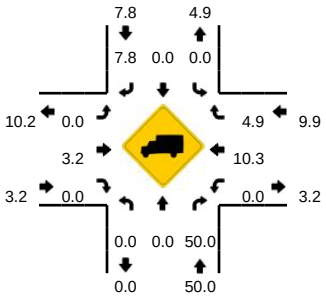
QC JOB #: 10944943

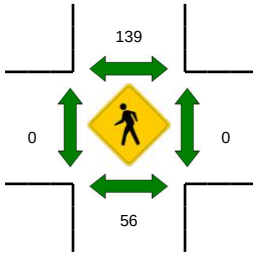
DATE: Wed, May 15 2013

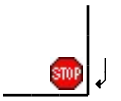
Peak-Hour: 7:45 AM -- 8:45 AM

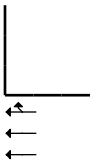
Peak 15-Min: 7:45 AM -- 8:00 AM

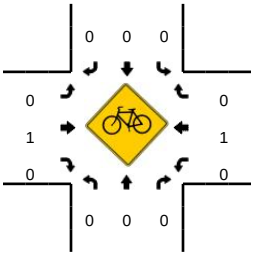


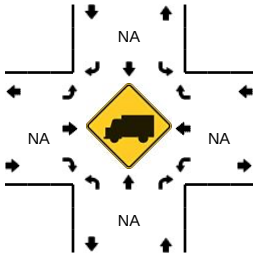


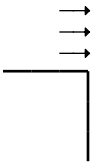


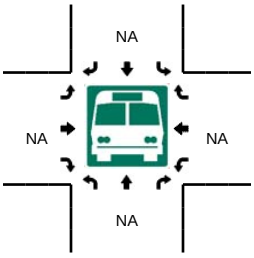












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Geary Blvd (Eastbound)				Geary Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	3	0	0	278	0	0	0	157	10	0	449	
7:15 AM	0	0	0	0	0	0	5	0	0	365	1	0	0	153	11	0	535	
7:30 AM	0	0	1	0	0	0	7	0	0	482	0	0	0	176	12	0	678	
7:45 AM	0	0	1	0	0	0	6	0	0	585	0	0	0	239	17	0	848	2510
8:00 AM	0	0	1	0	0	0	11	0	0	473	0	0	0	215	20	0	720	2781
8:15 AM	0	0	0	0	0	0	17	0	0	484	0	0	0	226	20	0	747	2993
8:30 AM	0	0	0	0	0	0	17	0	0	503	0	0	0	252	25	0	797	3112
8:45 AM	0	0	0	0	0	0	11	0	0	514	0	0	0	215	25	0	765	3029

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	0	0	24	0	0	2340	0	0	0	956	68	0	3392
Heavy Trucks	0	0	0		0	0	4		0	84	0		0	104	4		196
Pedestrians		60				120				0				0			180
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Broderick St -- Geary Blvd

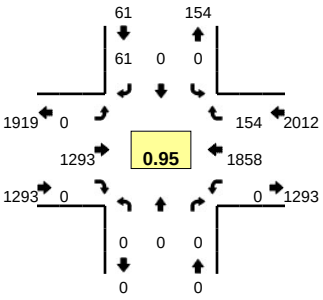
CITY/STATE: San Francisco, CA

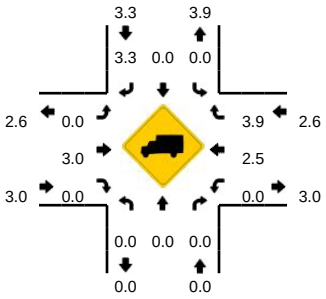
QC JOB #: 10944944

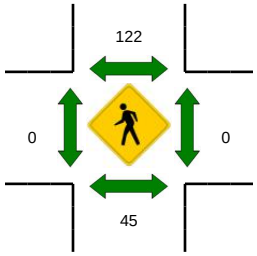
DATE: Wed, May 15 2013

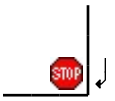
Peak-Hour: 4:45 PM -- 5:45 PM

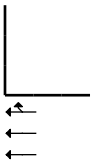
Peak 15-Min: 5:30 PM -- 5:45 PM

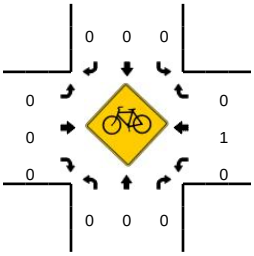


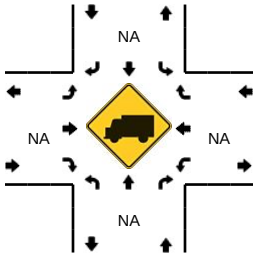


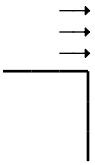


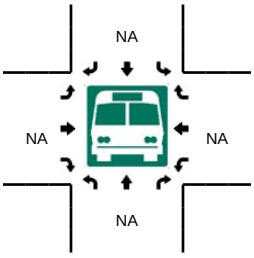












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Geary Blvd (Eastbound)				Geary Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	7	0	0	293	0	0	0	402	33	0	735	
4:15 PM	0	0	0	0	0	0	18	0	0	312	0	0	0	407	47	0	784	
4:30 PM	0	0	0	0	0	0	15	0	0	288	0	0	0	404	45	0	752	
4:45 PM	0	0	0	0	0	0	18	0	0	311	0	0	0	432	44	0	805	3076
5:00 PM	0	0	0	0	0	0	15	0	0	307	0	0	0	440	43	0	805	3146
5:15 PM	0	0	0	0	0	0	10	0	0	334	0	0	0	494	34	0	872	3234
5:30 PM	0	0	0	0	0	0	18	0	0	341	0	0	0	492	33	0	884	3366
5:45 PM	0	0	0	0	0	0	12	0	0	285	0	0	0	471	32	0	800	3361

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	72	0	0	1364	0	0	0	1968	132	0	3536
Heavy Trucks	0	0	0		0	0	4		0	40	0		0	52	12		108
Pedestrians		28				148				0				0			176
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

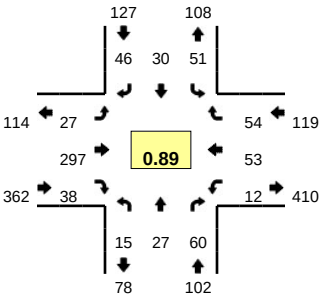
Type of peak hour being reported: Intersection Peak

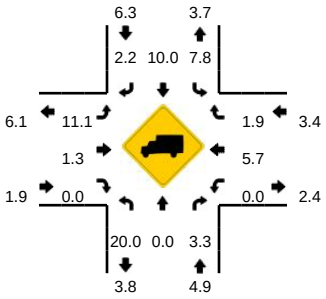
Method for determining peak hour: Total Entering Volume

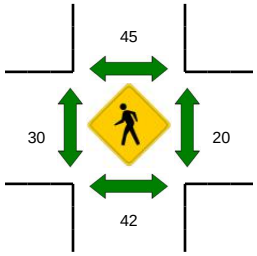
LOCATION: Broderick St -- Post St
CITY/STATE: San Francisco, CA

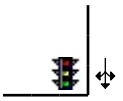
QC JOB #: 10944945
DATE: Wed, May 15 2013

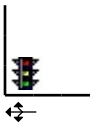
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

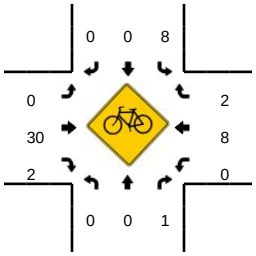


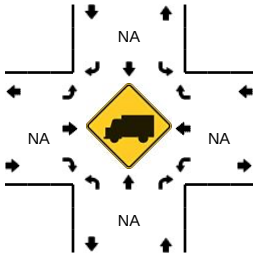


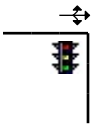


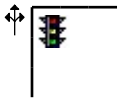


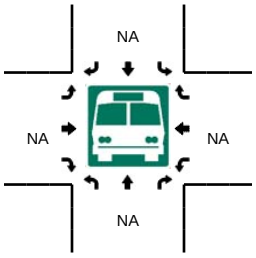












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	3	5	0	2	2	13	0	3	24	2	0	1	9	6	0	71	
7:15 AM	3	2	9	0	10	4	22	1	7	49	3	0	4	6	8	0	128	
7:30 AM	1	4	5	0	5	3	7	0	4	60	4	0	2	10	10	0	115	
7:45 AM	3	4	10	0	11	3	6	0	4	72	5	0	0	8	9	1	136	450
8:00 AM	3	6	13	0	17	9	7	0	3	72	7	0	3	13	11	1	165	544
8:15 AM	2	7	12	0	10	7	5	0	9	76	11	0	4	12	18	1	174	590
8:30 AM	4	7	19	0	11	10	17	0	7	87	13	0	0	15	9	0	199	674
8:45 AM	6	7	16	0	13	4	17	0	8	62	7	0	3	13	16	0	172	710

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	28	76	0	44	40	68	0	28	348	52	0	0	60	36	0	796
Heavy Trucks	4	0	0		4	4	0		8	8	0		0	0	0		28
Pedestrians		44				40				48				16			148
Bicycles	0	0	1		0	0	0		0	9	0		0	1	2		13
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Broderick St -- Post St

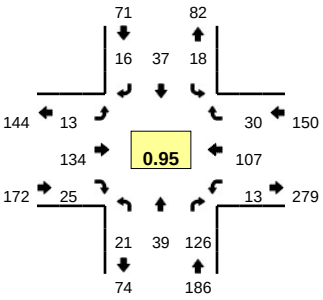
CITY/STATE: San Francisco, CA

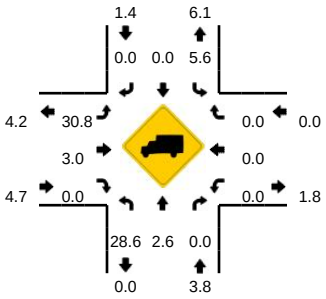
QC JOB #: 10944946

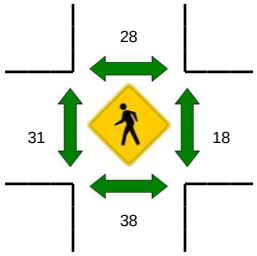
DATE: Wed, May 15 2013

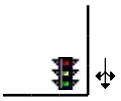
Peak-Hour: 4:15 PM -- 5:15 PM

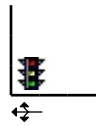
Peak 15-Min: 5:00 PM -- 5:15 PM

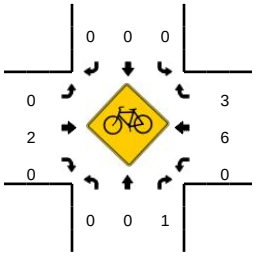


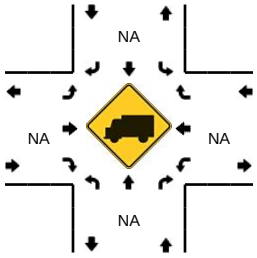


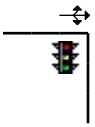


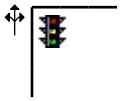


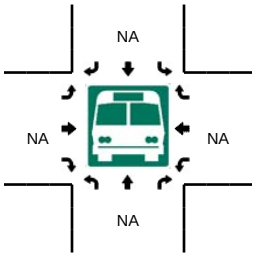












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	10	24	0	7	5	5	0	3	32	4	0	6	30	12	2	143	
4:15 PM	4	13	32	0	7	12	5	0	2	29	8	0	3	14	13	1	143	
4:30 PM	5	5	37	0	7	9	1	0	5	37	5	0	1	27	6	0	145	
4:45 PM	4	9	30	0	1	11	3	0	5	34	8	0	1	28	5	0	139	570
5:00 PM	8	12	27	0	3	5	7	0	1	34	4	0	7	38	6	0	152	579
5:15 PM	6	5	19	0	6	7	5	0	2	35	4	0	3	15	13	0	120	556
5:30 PM	7	8	15	0	2	1	1	0	1	34	8	0	5	23	6	0	111	522
5:45 PM	3	10	15	0	0	7	2	0	2	36	0	0	3	20	5	0	103	486

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	48	108	0	12	20	28	0	4	136	16	0	28	152	24	0	608
Heavy Trucks	8	4	0		0	0	0		0	0	0		0	0	0		12
Pedestrians		28				24				24				24			100
Bicycles	0	0	1		0	0	0		0	1	0		0	3	2		7
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Broderick St -- Bush St

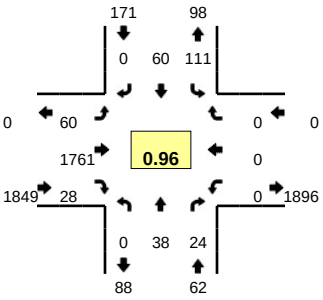
CITY/STATE: San Francisco, CA

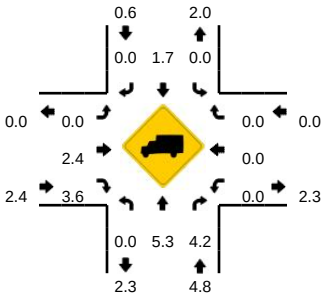
QC JOB #: 10944947

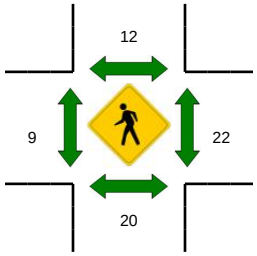
DATE: Wed, May 15 2013

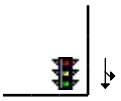
Peak-Hour: 7:45 AM -- 8:45 AM

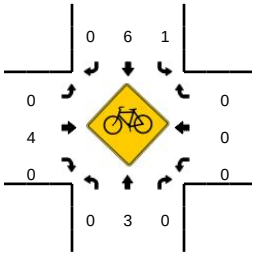
Peak 15-Min: 8:00 AM -- 8:15 AM

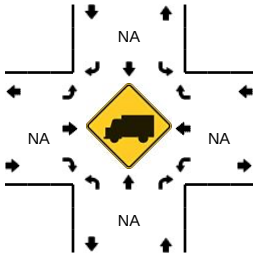


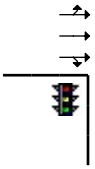


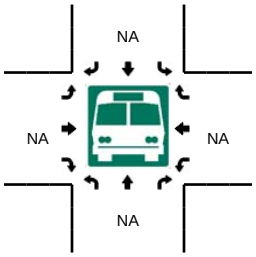












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	7	0	17	5	0	0	5	232	5	0	0	0	0	0	275	
7:15 AM	0	3	6	0	11	10	0	0	6	329	3	0	0	0	0	0	368	
7:30 AM	0	8	6	0	20	10	0	0	13	385	3	0	0	0	0	0	445	
7:45 AM	0	8	5	0	30	11	0	0	19	460	9	0	0	0	0	0	542	1630
8:00 AM	0	12	10	0	37	23	0	0	13	443	5	0	0	0	0	0	543	1898
8:15 AM	0	8	4	0	23	13	0	0	17	431	9	0	0	0	0	0	505	2035
8:30 AM	0	10	5	0	21	13	0	0	11	427	5	0	0	0	0	0	492	2082
8:45 AM	0	10	9	0	14	8	0	0	9	398	15	0	0	0	0	0	463	2003

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	48	40	0	148	92	0	0	52	1772	20	0	0	0	0	0	2172
Heavy Trucks	0	4	0		0	0	0		0	44	0		0	0	0		48
Pedestrians		24				24				8				20			76
Bicycles	0	0	0		0	2	0		0	2	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

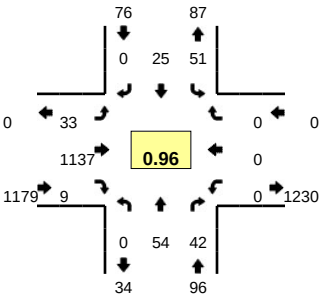
LOCATION: Broderick St -- Bush St

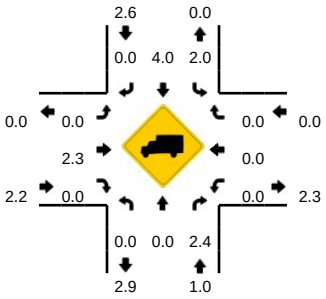
QC JOB #: 10944948

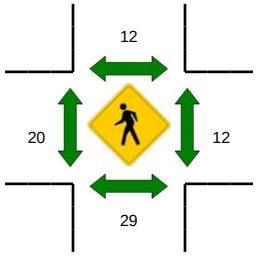
CITY/STATE: San Francisco, CA

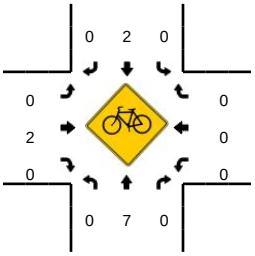
DATE: Wed, May 15 2013

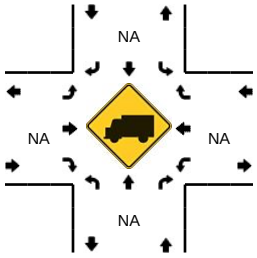
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

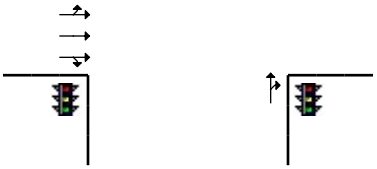


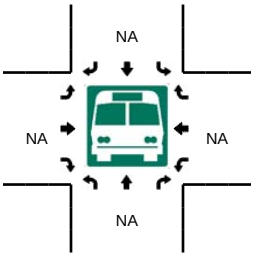












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	9	13	0	7	15	0	0	7	224	1	0	0	0	0	0	276	
4:15 PM	0	16	10	0	14	11	0	0	11	257	3	0	0	0	0	0	322	
4:30 PM	0	10	8	0	18	6	0	0	11	263	5	0	0	0	0	0	321	
4:45 PM	0	13	7	0	12	6	0	0	10	276	3	0	0	0	0	0	327	1246
5:00 PM	0	18	13	0	9	8	0	0	7	277	3	0	0	0	0	0	335	1305
5:15 PM	0	14	11	0	12	7	0	0	9	281	3	0	0	0	0	0	337	1320
5:30 PM	0	9	11	0	18	4	0	0	7	303	0	0	0	0	0	0	352	1351
5:45 PM	0	11	8	0	15	10	0	0	4	270	3	0	0	0	0	0	321	1345

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	36	44	0	72	16	0	0	28	1212	0	0	0	0	0	0	1408
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	0	0		20
Pedestrians		32				20				32				24			108
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Broderick St -- Sutter St

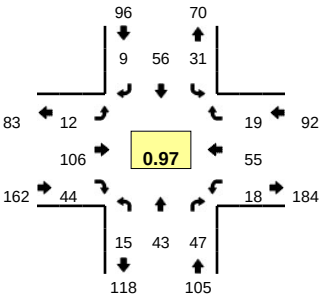
CITY/STATE: San Francisco, CA

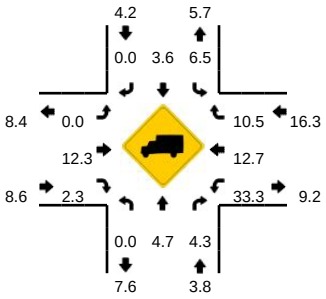
QC JOB #: 10944949

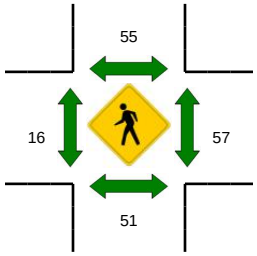
DATE: Wed, May 15 2013

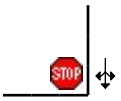
Peak-Hour: 8:00 AM -- 9:00 AM

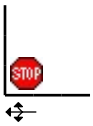
Peak 15-Min: 8:15 AM -- 8:30 AM

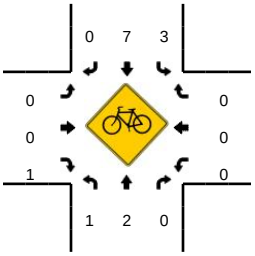


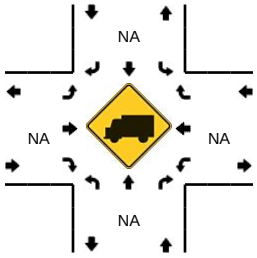


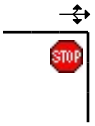


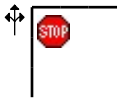


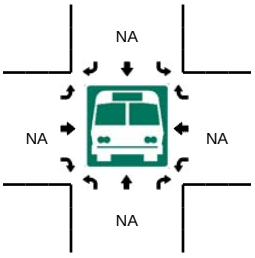












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	4	4	0	8	2	1	0	3	18	11	1	3	11	3	1	73	
7:15 AM	4	4	4	1	3	10	0	0	4	17	19	0	7	12	2	1	88	
7:30 AM	1	7	12	0	6	6	1	0	1	27	10	0	1	10	5	0	87	
7:45 AM	2	7	5	0	5	8	7	0	7	24	5	0	4	13	4	0	91	339
8:00 AM	1	8	12	0	9	20	1	0	4	30	7	0	5	11	6	0	114	380
8:15 AM	3	12	12	0	11	12	2	0	1	35	5	2	3	16	3	0	117	409
8:30 AM	4	9	13	0	4	12	3	0	2	20	20	0	7	12	4	0	110	432
8:45 AM	7	14	10	0	7	12	3	0	1	21	12	2	3	16	6	0	114	455

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	48	48	0	44	48	8	0	4	140	20	8	12	64	12	0	468
Heavy Trucks	0	0	0		0	0	0		0	8	0		8	12	0		28
Pedestrians		52				40				12				72			176
Bicycles	0	0	0		2	2	0		0	0	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Broderick St -- Sutter St

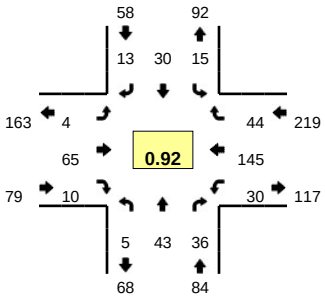
QC JOB #: 10944950

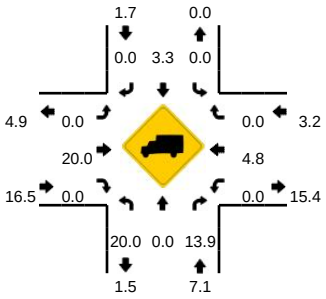
CITY/STATE: San Francisco, CA

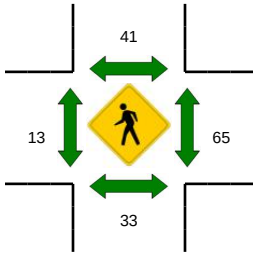
DATE: Wed, May 15 2013

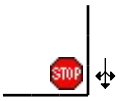
Peak-Hour: 4:00 PM -- 5:00 PM

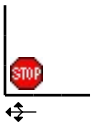
Peak 15-Min: 4:00 PM -- 4:15 PM

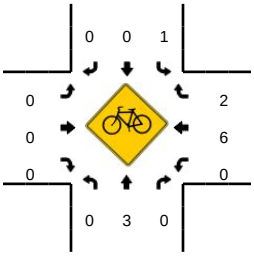


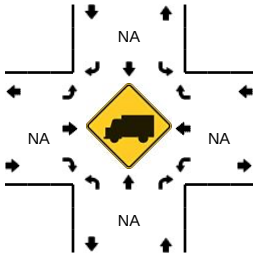


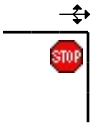


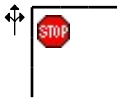


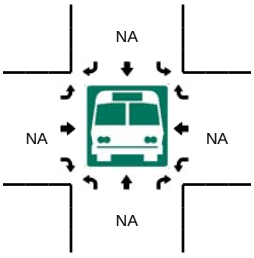












15-Min Count Period Beginning At	Broderick St (Northbound)				Broderick St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	10	15	0	5	11	5	0	0	19	3	0	3	36	12	0	119	
4:15 PM	2	15	7	0	2	8	4	0	2	16	5	0	10	28	9	2	110	
4:30 PM	1	6	10	0	4	9	1	0	1	14	0	0	7	46	13	0	112	
4:45 PM	2	12	4	0	3	2	3	1	1	16	2	0	8	35	10	0	99	440
5:00 PM	1	14	3	0	3	6	3	1	1	9	0	0	5	32	12	1	91	412
5:15 PM	4	11	4	0	2	7	4	0	1	12	0	0	11	31	12	0	99	401
5:30 PM	1	11	3	0	4	1	0	0	0	18	2	0	1	34	12	0	87	376
5:45 PM	4	7	3	0	3	4	5	0	1	13	2	0	4	32	9	0	87	364

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	40	60	0	20	44	20	0	0	76	12	0	12	144	48	0	476
Heavy Trucks	0	0	8		0	4	0		0	20	0		0	12	0		44
Pedestrians		24				60				28				76			188
Bicycles	0	2	0		0	0	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

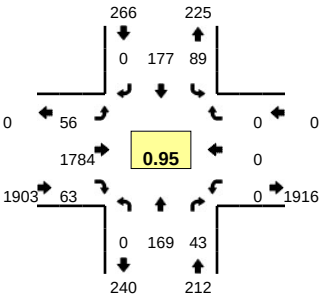
Type of peak hour being reported: Intersection Peak

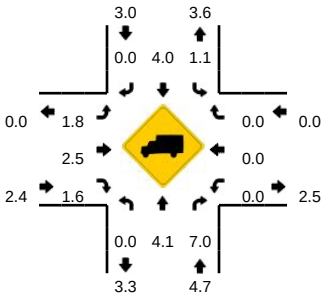
Method for determining peak hour: Total Entering Volume

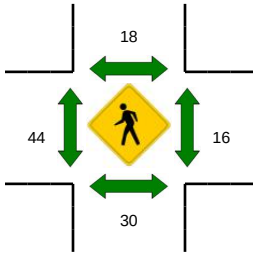
LOCATION: Scott St -- Bush St
CITY/STATE: San Francisco, CA

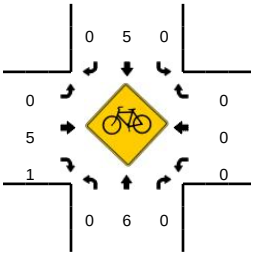
QC JOB #: 10944955
DATE: Wed, May 15 2013

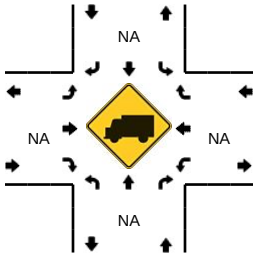
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

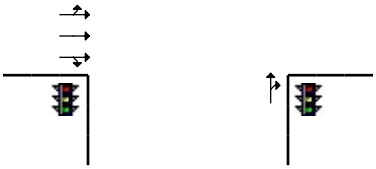


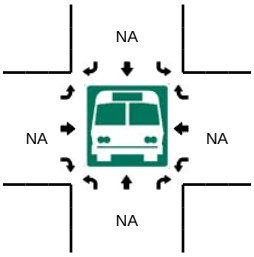












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	19	4	0	16	13	0	0	3	236	11	0	0	0	0	0	302	
7:15 AM	0	25	9	0	11	16	0	0	6	324	17	0	0	0	0	0	408	
7:30 AM	0	31	6	0	21	29	0	0	10	401	15	0	0	0	0	0	513	
7:45 AM	0	47	11	0	28	39	0	0	7	461	19	0	0	0	0	0	612	1835
8:00 AM	0	45	9	0	21	34	0	0	16	485	19	0	0	0	0	0	629	2162
8:15 AM	0	30	14	0	19	49	0	0	16	414	14	0	0	0	0	0	556	2310
8:30 AM	0	47	9	0	21	55	0	0	17	424	11	0	0	0	0	0	584	2381
8:45 AM	0	42	14	0	15	40	0	0	7	444	15	0	0	0	0	0	577	2346

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	180	36	0	84	136	0	0	64	1940	76	0	0	0	0	0	2516
Heavy Trucks	0	8	0		0	4	0		4	48	4		0	0	0		68
Pedestrians		24				12				24				8			68
Bicycles	0	2	0		0	3	0		0	1	0		0	0	0		6
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

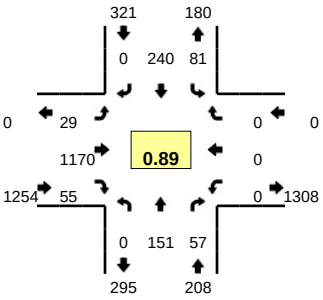
Type of peak hour being reported: Intersection Peak

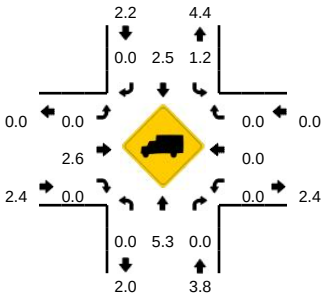
Method for determining peak hour: Total Entering Volume

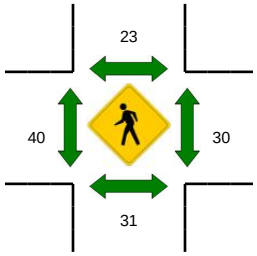
LOCATION: Scott St -- Bush St
CITY/STATE: San Francisco, CA

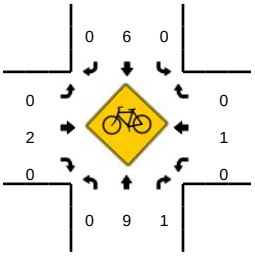
QC JOB #: 10944956
DATE: Wed, May 15 2013

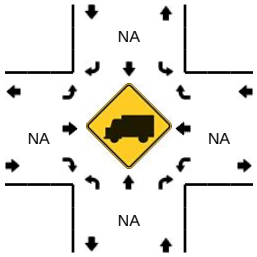
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

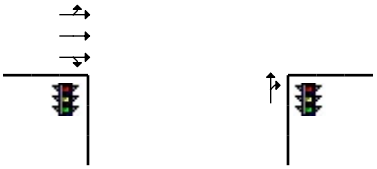


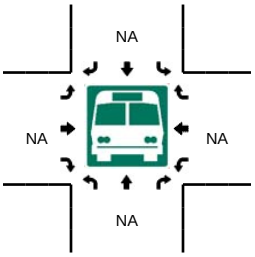












15-Min Count Period Beginning At	Scott St (Northbound)				Scott St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	34	12	0	20	49	0	0	9	218	25	0	0	0	0	0	367	
4:15 PM	0	56	18	0	12	58	0	0	9	232	11	0	0	0	0	0	396	
4:30 PM	0	41	16	0	9	46	0	0	11	265	16	0	0	0	0	0	404	
4:45 PM	0	47	17	0	9	40	0	0	4	265	15	0	0	0	0	0	397	1564
5:00 PM	0	38	13	0	22	46	0	0	3	277	17	0	0	0	0	0	416	1613
5:15 PM	0	42	9	0	14	63	0	0	3	287	13	0	0	0	0	0	431	1648
5:30 PM	0	35	24	0	26	64	0	0	15	328	9	0	0	0	0	0	501	1745
5:45 PM	0	36	11	0	19	67	0	0	8	278	16	0	0	0	0	0	435	1783

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	140	96	0	104	256	0	0	60	1312	36	0	0	0	0	0	2004
Heavy Trucks	0	8	0		0	12	0		0	24	0		0	0	0		44
Pedestrians		16				28				48				20			112
Bicycles	0	1	0		0	2	0		0	0	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

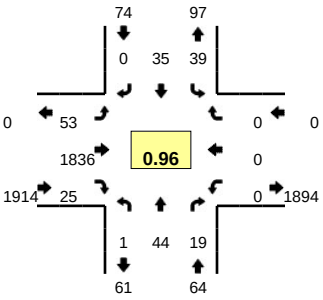
Type of peak hour being reported: Intersection Peak

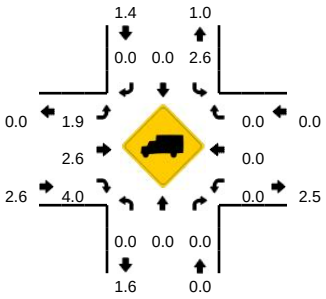
Method for determining peak hour: Total Entering Volume

LOCATION: Pierce St -- Bush St
CITY/STATE: San Francisco, CA

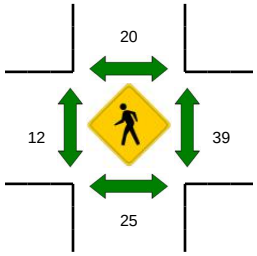
QC JOB #: 10944957
DATE: Wed, May 15 2013

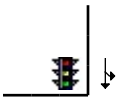
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

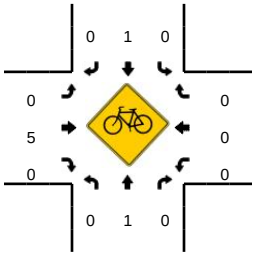


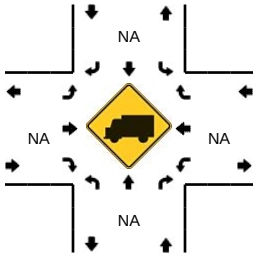


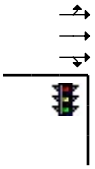
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

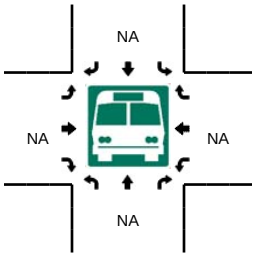












15-Min Count Period Beginning At	Pierce St (Northbound)				Pierce St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	4	0	5	0	0	0	2	261	2	0	0	0	0	0	278	
7:15 AM	0	2	3	0	6	2	0	0	5	340	5	0	0	0	0	0	363	
7:30 AM	0	4	6	0	10	4	0	0	8	429	1	0	0	0	0	0	462	
7:45 AM	0	8	9	0	8	4	0	0	16	489	3	0	0	0	0	0	537	1640
8:00 AM	0	13	1	0	15	11	0	0	13	478	6	0	0	0	0	0	537	1899
8:15 AM	0	12	5	1	9	11	0	0	17	426	11	0	0	0	0	0	492	2028
8:30 AM	0	11	4	0	7	9	0	0	7	443	5	0	0	0	0	0	486	2052
8:45 AM	0	6	7	0	6	8	0	0	9	434	11	0	0	0	0	0	481	1996

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	32	36	0	32	16	0	0	64	1956	12	0	0	0	0	0	2148
Heavy Trucks	0	0	0		0	0	0		4	56	0		0	0	0		60
Pedestrians		32				12				12				32			88
Bicycles	0	1	0		0	0	0		0	1	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

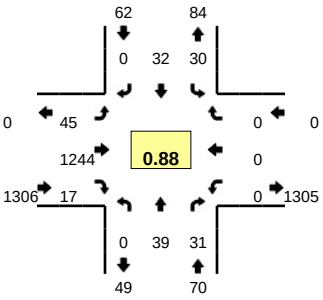
Type of peak hour being reported: Intersection Peak

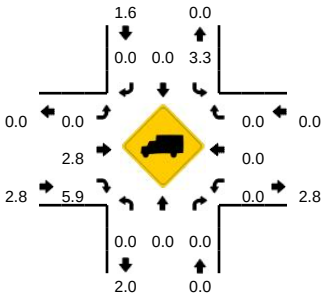
Method for determining peak hour: Total Entering Volume

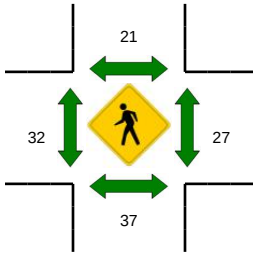
LOCATION: Pierce St -- Bush St
CITY/STATE: San Francisco, CA

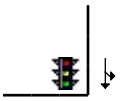
QC JOB #: 10944958
DATE: Wed, May 15 2013

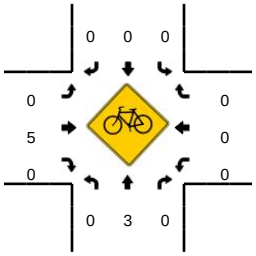
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

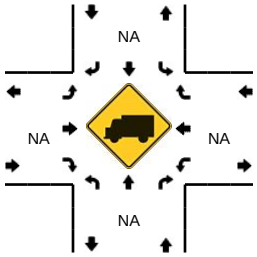


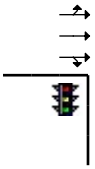


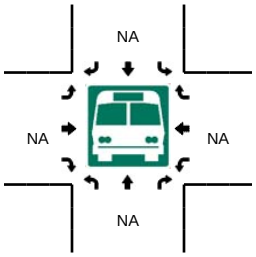












15-Min Count Period Beginning At	Pierce St (Northbound)				Pierce St (Southbound)				Bush St (Eastbound)				Bush St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	13	11	0	11	5	0	0	7	242	9	0	0	0	0	0	298	
4:15 PM	0	7	4	0	6	9	0	0	6	250	8	0	0	0	0	0	290	
4:30 PM	0	6	7	0	9	5	0	0	4	269	11	0	0	0	0	0	311	
4:45 PM	0	14	5	0	5	15	0	0	9	273	10	0	0	0	0	0	331	1230
5:00 PM	0	14	0	0	7	8	0	0	5	304	7	0	0	0	0	0	345	1277
5:15 PM	0	9	9	0	10	9	0	0	15	289	4	0	0	0	0	0	345	1332
5:30 PM	0	8	9	0	8	12	0	0	20	349	2	0	0	0	0	0	408	1429
5:45 PM	0	8	13	0	5	3	0	0	5	302	4	0	0	0	0	0	340	1438

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	32	36	0	32	48	0	0	80	1396	8	0	0	0	0	0	1632
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	0	0		20
Pedestrians		32				28				36				28			124
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Pierce St -- Sutter St

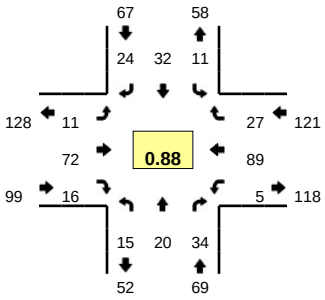
CITY/STATE: San Francisco, CA

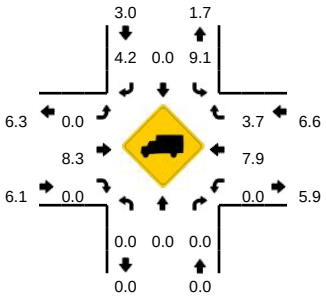
QC JOB #: 10944959

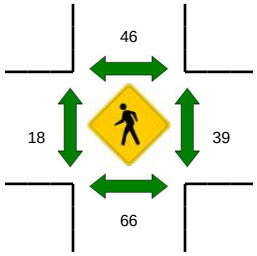
DATE: Wed, May 15 2013

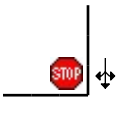
Peak-Hour: 8:00 AM -- 9:00 AM

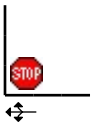
Peak 15-Min: 8:15 AM -- 8:30 AM

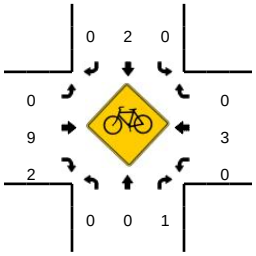


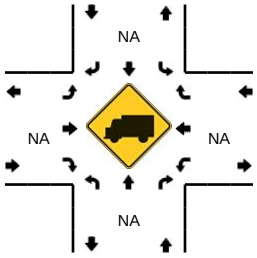


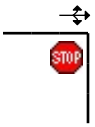


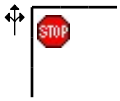


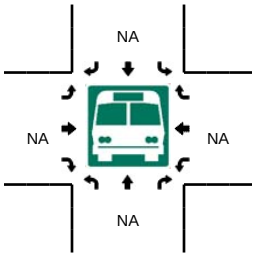












15-Min Count Period Beginning At	Pierce St (Northbound)				Pierce St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	0	1	0	0	2	0	0	2	14	1	0	1	15	6	1	46	
7:15 AM	0	5	8	0	2	1	3	0	0	11	1	0	3	23	0	0	57	
7:30 AM	2	2	8	0	2	1	1	0	2	16	3	0	7	17	4	1	66	
7:45 AM	0	5	3	0	2	1	3	0	5	13	1	1	1	25	6	0	66	235
8:00 AM	1	4	6	0	4	6	3	0	3	13	2	0	2	31	5	0	80	269
8:15 AM	3	5	13	0	5	11	8	0	5	16	4	0	1	20	10	0	101	313
8:30 AM	5	3	11	0	1	10	2	0	3	17	7	0	1	16	7	1	84	331
8:45 AM	6	8	4	0	1	5	11	0	0	26	3	0	0	22	5	0	91	356

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	20	52	0	20	44	32	0	20	64	16	0	4	80	40	0	404
Heavy Trucks	0	0	0		0	0	4		0	4	0		0	8	0		16
Pedestrians		88				60				20				40			208
Bicycles	0	0	0		0	0	0		0	6	2		0	2	0		10
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

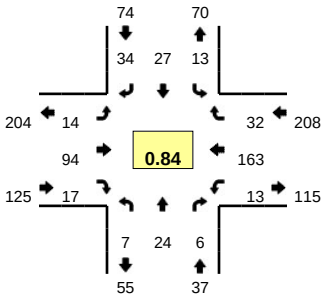
Type of peak hour being reported: Intersection Peak

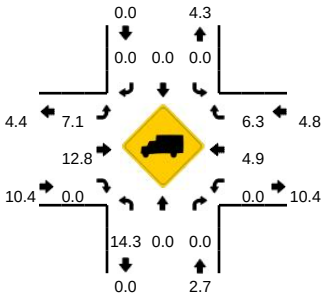
Method for determining peak hour: Total Entering Volume

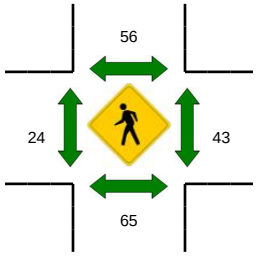
LOCATION: Pierce St -- Sutter St
CITY/STATE: San Francisco, CA

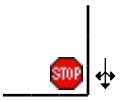
QC JOB #: 10944960
DATE: Wed, May 15 2013

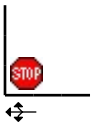
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

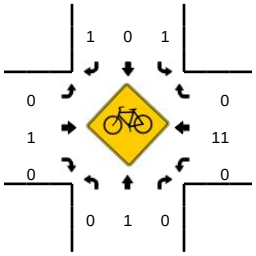


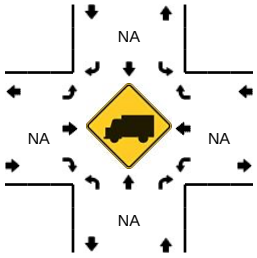


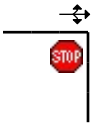


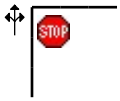


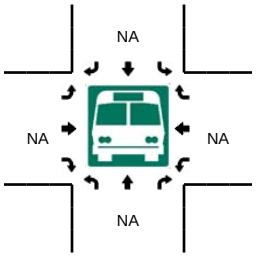












15-Min Count Period Beginning At	Pierce St (Northbound)				Pierce St (Southbound)				Sutter St (Eastbound)				Sutter St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	10	2	0	3	3	10	0	5	22	5	0	3	32	10	1	109	
4:15 PM	2	1	1	0	3	8	4	0	4	19	3	0	4	42	4	1	96	
4:30 PM	1	4	1	0	2	4	10	0	2	25	5	0	3	42	8	0	107	
4:45 PM	1	9	2	0	5	12	10	0	3	28	4	0	1	47	10	0	132	444
5:00 PM	2	10	2	0	1	7	7	0	1	16	7	0	3	28	4	1	89	424
5:15 PM	2	4	3	0	3	4	6	0	3	23	2	0	3	44	9	0	106	434
5:30 PM	0	8	5	1	4	6	7	0	1	24	4	1	5	37	6	1	110	437
5:45 PM	2	4	7	0	3	1	5	0	4	19	4	1	5	39	16	0	110	415

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	36	8	0	20	48	40	0	12	112	16	0	4	188	40	0	528
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	8	0		20
Pedestrians		92				48				40				52			232
Bicycles	0	0	0		1	0	0		0	1	0		0	2	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

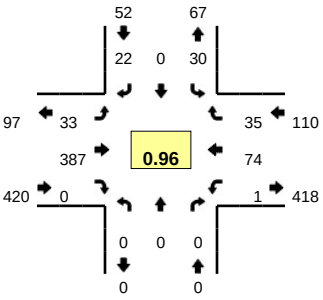
Type of peak hour being reported: Intersection Peak

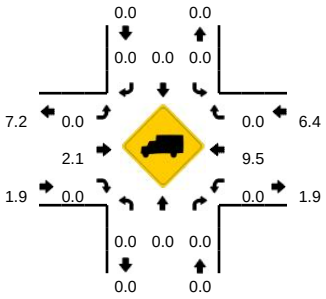
Method for determining peak hour: Total Entering Volume

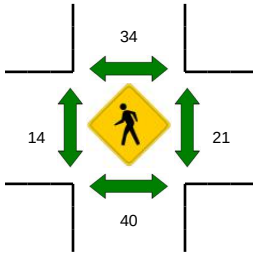
LOCATION: Pierce St -- Post St
CITY/STATE: San Francisco, CA

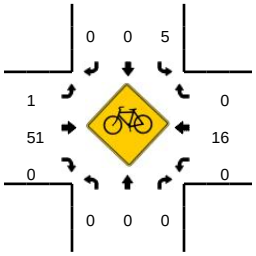
QC JOB #: 10944961
DATE: Wed, May 15 2013

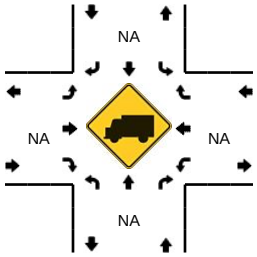
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

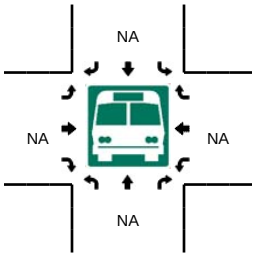












15-Min Count Period Beginning At	Pierce St (Northbound)				Pierce St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	3	0	0	40	0	0	0	21	4	0	70	
7:15 AM	0	0	0	0	3	0	1	0	3	62	0	0	0	19	8	0	96	
7:30 AM	0	0	0	0	12	0	0	0	7	66	0	1	0	19	4	0	109	
7:45 AM	0	0	0	0	4	0	1	1	5	95	0	0	0	12	3	0	121	396
8:00 AM	0	0	0	0	6	0	4	0	4	96	0	0	0	19	7	1	137	463
8:15 AM	0	0	0	0	9	0	4	0	9	92	0	0	0	19	12	0	145	512
8:30 AM	0	0	0	0	9	0	10	0	7	96	0	1	0	13	12	0	148	551
8:45 AM	0	0	0	0	6	0	4	0	12	103	0	0	0	23	4	0	152	582

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	16	0	48	412	0	0	0	92	16	0	608
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	8	0		16
Pedestrians		60				20				16				44			140
Bicycles	0	0	0		1	0	0		0	16	0		0	3	0		20
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

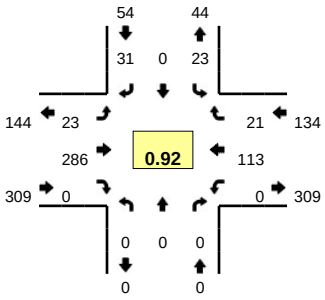
Type of peak hour being reported: Intersection Peak

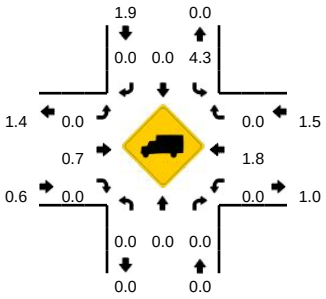
Method for determining peak hour: Total Entering Volume

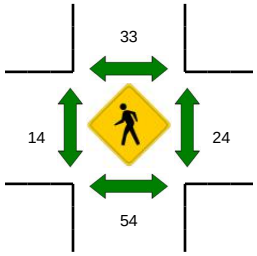
LOCATION: Pierce St -- Post St
CITY/STATE: San Francisco, CA

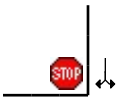
QC JOB #: 10944962
DATE: Wed, May 15 2013

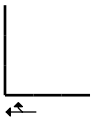
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

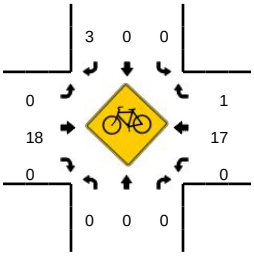


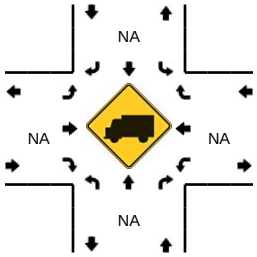


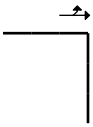


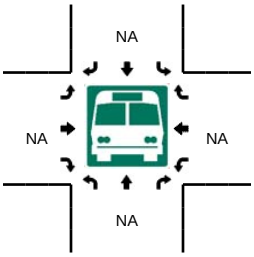












15-Min Count Period Beginning At	Pierce St (Northbound)				Pierce St (Southbound)				Post St (Eastbound)				Post St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	4	0	5	0	6	77	0	1	0	20	9	0	122	
4:15 PM	0	0	0	0	7	0	9	0	1	66	0	0	0	18	2	0	103	
4:30 PM	0	0	0	0	3	0	8	0	3	76	0	0	0	25	1	0	116	
4:45 PM	0	0	0	0	6	0	10	0	5	82	0	0	0	29	3	0	135	476
5:00 PM	0	0	0	0	8	0	9	0	8	73	0	0	0	29	5	0	132	486
5:15 PM	0	0	0	0	4	0	5	0	3	63	0	0	0	27	6	0	108	491
5:30 PM	0	0	0	0	5	0	7	0	7	68	0	0	0	28	7	0	122	497
5:45 PM	0	0	0	0	5	0	6	0	8	51	0	0	0	25	4	0	99	461

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	40	0	20	328	0	0	0	116	12	0	540
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	0		8
Pedestrians		68				56				36				8			168
Bicycles	0	0	0		0	0	0		0	6	0		0	3	0		9
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

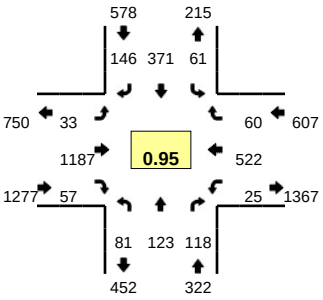
LOCATION: Harrison St -- Division St

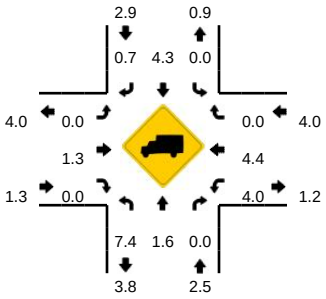
CITY/STATE: San Francisco, CA

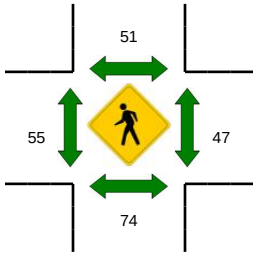
QC JOB #: 10944903

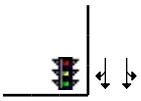
DATE: Wed, May 15 2013

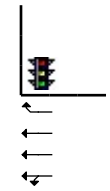
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

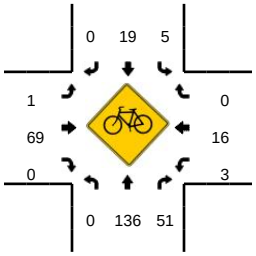


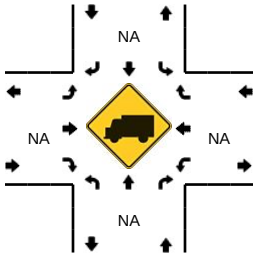


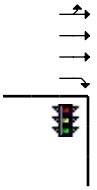


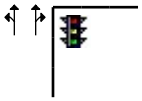


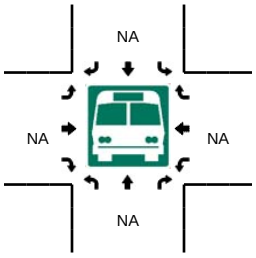












15-Min Count Period Beginning At	Harrison St (Northbound)				Harrison St (Southbound)				Division St (Eastbound)				Division St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	20	18	0	10	70	28	0	0	132	13	0	3	65	5	2	376	
7:15 AM	15	28	15	0	9	94	25	0	3	199	12	0	2	82	13	2	499	
7:30 AM	23	16	23	0	19	100	23	0	8	204	21	1	7	101	9	1	556	
7:45 AM	19	28	29	0	12	90	21	1	6	253	20	0	7	89	6	1	582	2013
8:00 AM	18	27	27	0	12	91	28	0	4	258	16	0	7	140	10	1	639	2276
8:15 AM	22	31	34	0	19	85	40	0	9	281	8	0	8	130	18	0	685	2462
8:30 AM	20	40	25	0	15	102	35	0	7	319	17	1	7	124	22	0	734	2640
8:45 AM	21	25	32	0	15	93	43	0	12	329	16	0	2	128	10	0	726	2784

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	80	160	100	0	60	408	140	0	28	1276	68	4	28	496	88	0	2936
Heavy Trucks	4	4	0		0	24	0		0	20	0		4	28	0		84
Pedestrians		72				56				60				32			220
Bicycles	0	38	16		0	7	0		0	15	0		1	5	0		82
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Harrison St -- Division St

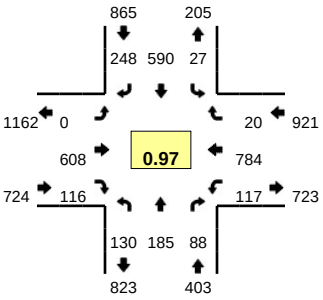
CITY/STATE: San Francisco, CA

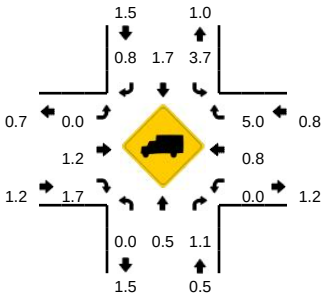
QC JOB #: 10944904

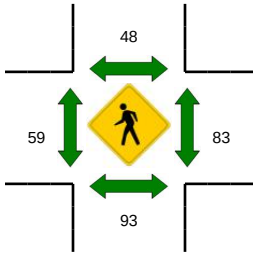
DATE: Wed, May 15 2013

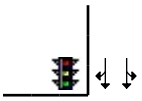
Peak-Hour: 5:00 PM -- 6:00 PM

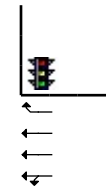
Peak 15-Min: 5:15 PM -- 5:30 PM

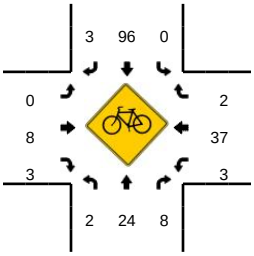


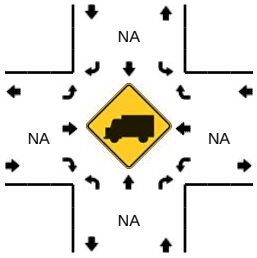


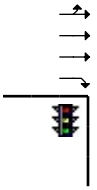


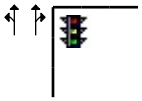


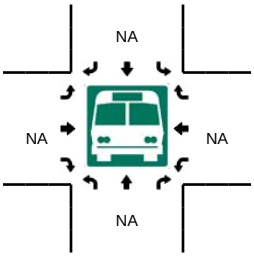












15-Min Count Period Beginning At	Harrison St (Northbound)				Harrison St (Southbound)				Division St (Eastbound)				Division St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	33	48	34	0	10	113	58	0	0	171	24	0	29	163	7	2	692	
4:15 PM	28	43	18	0	10	131	42	0	0	168	28	1	24	187	5	0	685	
4:30 PM	30	50	26	0	5	140	60	0	0	152	28	0	24	182	8	1	706	
4:45 PM	36	36	26	0	10	136	59	0	0	150	26	1	18	184	8	0	690	2773
5:00 PM	32	48	18	0	3	140	63	0	0	169	24	0	25	182	5	0	709	2790
5:15 PM	34	51	17	0	11	144	64	0	0	160	25	0	42	201	2	0	751	2856
5:30 PM	27	47	27	0	5	152	58	0	0	129	33	0	19	213	6	0	716	2866
5:45 PM	37	39	26	0	8	154	63	0	0	150	34	0	31	188	7	0	737	2913

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	136	204	68	0	44	576	256	0	0	640	100	0	168	804	8	0	3004
Heavy Trucks	0	0	0		4	12	8		0	4	0		0	8	4		40
Pedestrians		80				44				60				92			276
Bicycles	0	7	2		0	34	0		0	1	1		2	11	1		59
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Folsom St -- Division St

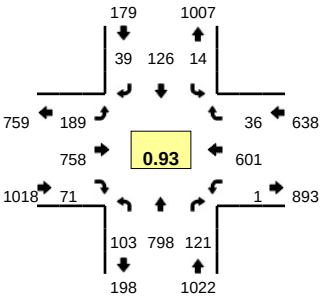
CITY/STATE: San Francisco, CA

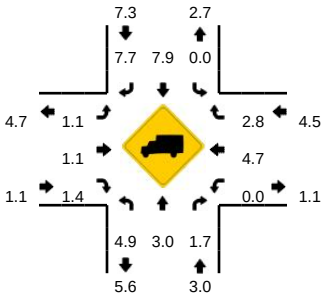
QC JOB #: 10944905

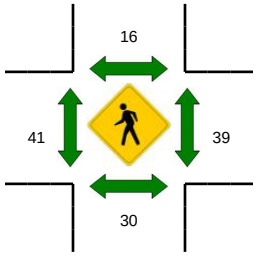
DATE: Wed, May 15 2013

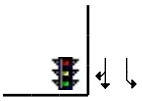
Peak-Hour: 8:00 AM -- 9:00 AM

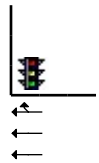
Peak 15-Min: 8:45 AM -- 9:00 AM

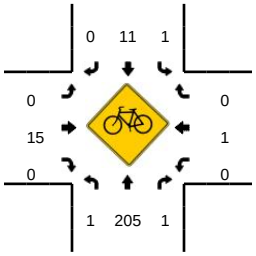


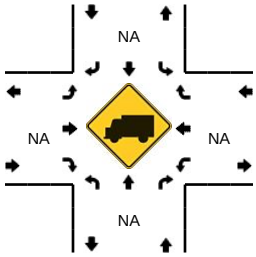


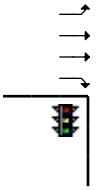


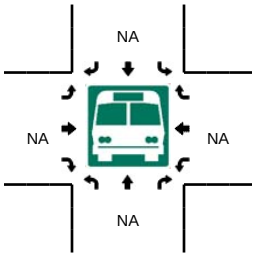












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				Division St (Eastbound)				Division St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	22	79	17	0	4	19	13	0	18	88	7	2	0	71	6	0	346	
7:15 AM	23	92	19	0	1	9	10	0	26	135	14	4	0	95	3	0	431	
7:30 AM	32	166	18	0	4	34	6	0	21	132	21	4	0	115	11	0	564	
7:45 AM	28	159	25	0	3	23	9	0	43	153	11	1	0	114	6	0	575	1916
8:00 AM	34	195	22	0	2	27	7	0	31	153	18	2	0	146	10	0	647	2217
8:15 AM	22	181	24	0	4	37	7	0	44	181	13	4	1	161	7	0	686	2472
8:30 AM	25	212	32	0	3	26	12	0	48	208	25	5	0	150	10	0	756	2664
8:45 AM	22	210	43	0	5	36	13	0	50	216	15	5	0	144	9	0	768	2857

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	88	840	172	0	20	144	52	0	200	864	60	20	0	576	36	0	3072
Heavy Trucks	8	16	0		0	16	4		4	4	0		0	4	0		56
Pedestrians		36				24				52				40			152
Bicycles	0	72	1		1	5	0		0	5	0		0	1	0		85
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Folsom St -- Division St

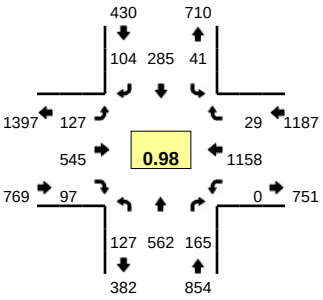
CITY/STATE: San Francisco, CA

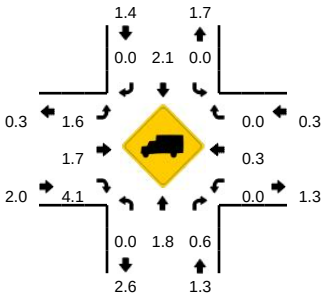
QC JOB #: 10944906

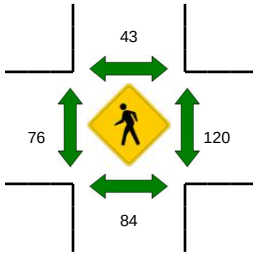
DATE: Wed, May 15 2013

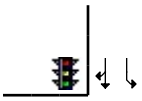
Peak-Hour: 4:45 PM -- 5:45 PM

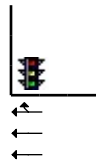
Peak 15-Min: 5:30 PM -- 5:45 PM

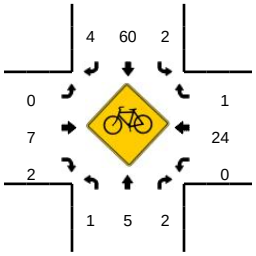


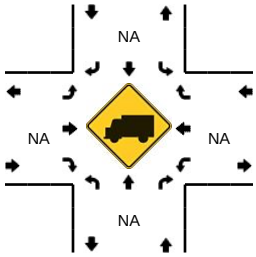


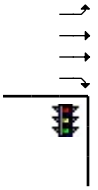


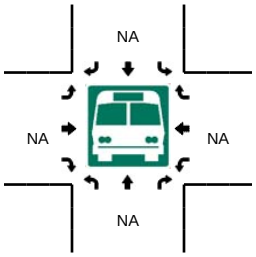












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				Division St (Eastbound)				Division St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	42	168	45	0	7	57	35	0	36	160	31	2	0	248	10	0	841	
4:15 PM	35	154	37	0	5	51	25	1	35	156	27	3	0	242	18	0	789	
4:30 PM	43	146	30	0	14	58	21	0	39	143	32	4	0	259	4	0	793	
4:45 PM	30	138	42	0	10	65	23	0	34	131	16	3	0	289	12	0	793	3216
5:00 PM	40	149	39	0	14	60	28	0	30	152	23	2	0	267	6	0	810	3185
5:15 PM	26	136	43	0	7	82	28	0	28	132	26	1	0	295	6	0	810	3206
5:30 PM	31	139	41	0	10	78	25	0	27	130	32	2	0	307	5	0	827	3240
5:45 PM	22	146	36	0	8	71	31	0	26	123	22	4	0	285	12	1	787	3234

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	124	556	164	0	40	312	100	0	108	520	128	8	0	1228	20	0	3308
Heavy Trucks	0	8	0		0	8	0		0	0	8		0	8	0		32
Pedestrians		80				16				84				140			320
Bicycles	0	2	1		2	23	1		0	4	0		0	8	0		41
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

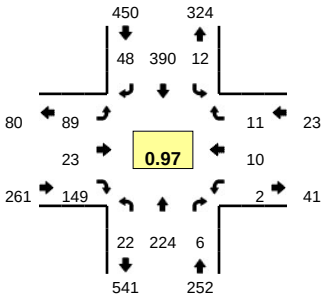
Type of peak hour being reported: Intersection Peak

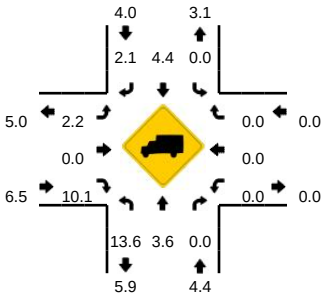
Method for determining peak hour: Total Entering Volume

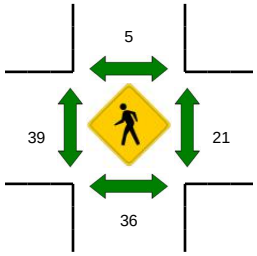
LOCATION: Harrison St -- 14th St
CITY/STATE: San Francisco, CA

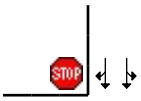
QC JOB #: 10944907
DATE: Wed, May 15 2013

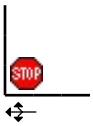
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

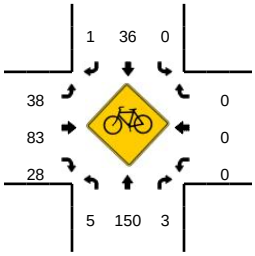


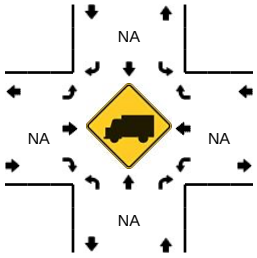


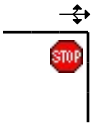


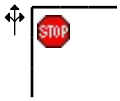


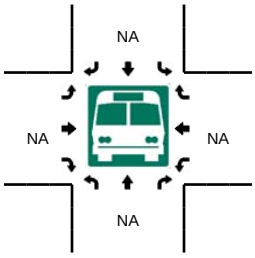












15-Min Count Period Beginning At	Harrison St (Northbound)				Harrison St (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	37	0	0	3	76	9	1	11	1	21	0	1	1	1	0	165	
7:15 AM	2	39	0	0	4	92	10	0	17	6	20	0	0	2	1	0	193	
7:30 AM	3	48	1	0	3	114	12	0	15	7	21	0	0	0	0	0	224	
7:45 AM	0	54	2	0	5	104	6	0	22	11	39	0	2	0	2	0	247	829
8:00 AM	4	44	2	0	4	103	6	0	23	7	35	0	0	2	5	0	235	899
8:15 AM	7	62	0	0	4	82	18	0	24	5	42	0	0	1	1	0	246	952
8:30 AM	5	65	0	0	1	103	14	0	20	6	36	0	0	0	2	0	252	980
8:45 AM	6	53	4	0	3	102	10	0	22	5	36	0	2	7	3	0	253	986

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	212	16	0	12	408	40	0	88	20	144	0	8	28	12	0	1012
Heavy Trucks	0	4	0		0	24	0		8	0	16		0	0	0		52
Pedestrians		32				4				52				28			116
Bicycles	2	45	1		0	9	0		14	23	13		0	0	0		107
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

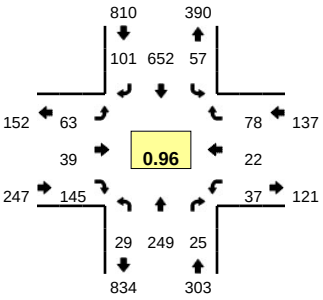
Type of peak hour being reported: Intersection Peak

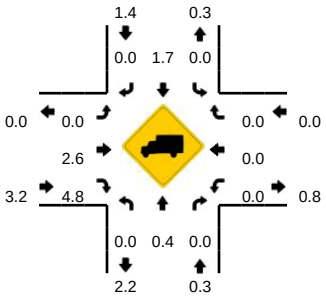
Method for determining peak hour: Total Entering Volume

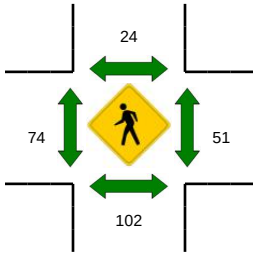
LOCATION: Harrison St -- 14th St
CITY/STATE: San Francisco, CA

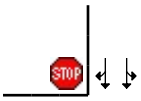
QC JOB #: 10944908
DATE: Wed, May 15 2013

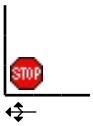
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

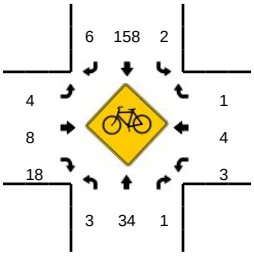


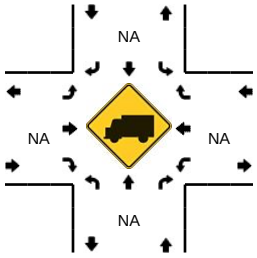


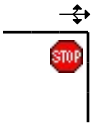


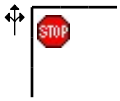


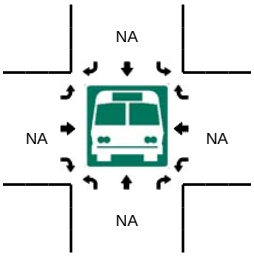












15-Min Count Period Beginning At	Harrison St (Northbound)				Harrison St (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	76	8	0	15	122	28	0	20	11	32	0	10	7	17	0	351	
4:15 PM	8	63	5	0	12	136	26	1	15	6	36	0	7	3	9	0	327	
4:30 PM	3	63	2	1	24	149	25	0	19	6	36	0	11	7	22	0	368	
4:45 PM	8	67	10	0	16	144	28	0	23	11	37	0	9	7	11	0	371	1417
5:00 PM	5	57	7	0	14	150	25	0	13	10	47	0	14	4	25	0	371	1437
5:15 PM	5	64	5	0	15	164	30	0	16	13	32	0	8	6	15	0	373	1483
5:30 PM	11	61	6	0	16	149	27	0	18	9	32	0	6	7	21	0	363	1478
5:45 PM	8	67	7	0	12	189	19	0	16	7	34	0	9	5	17	0	390	1497

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	268	28	0	48	756	76	0	64	28	136	0	36	20	68	0	1560
Heavy Trucks	0	0	0		0	16	0		0	0	4		0	0	0		20
Pedestrians		108				32				92				44			276
Bicycles	0	10	0		0	48	3		1	3	1		1	2	0		69
Railroad Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

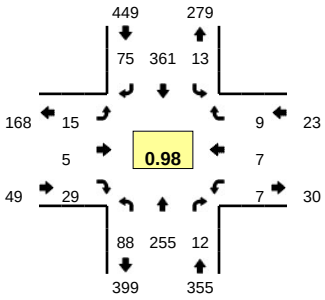
Type of peak hour being reported: Intersection Peak

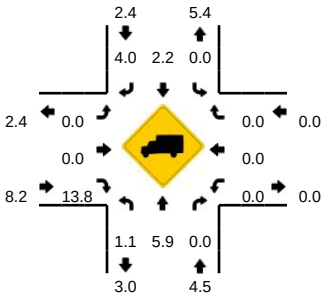
Method for determining peak hour: Total Entering Volume

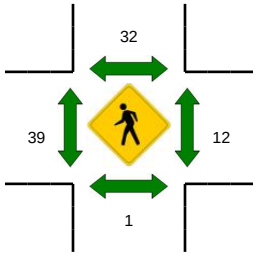
LOCATION: Harrison St -- 15th St
CITY/STATE: San Francisco, CA

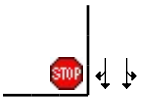
QC JOB #: 10944909
DATE: Wed, May 15 2013

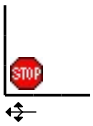
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

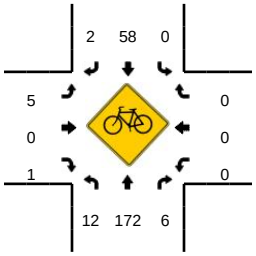


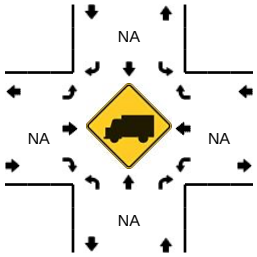


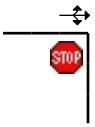


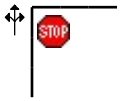


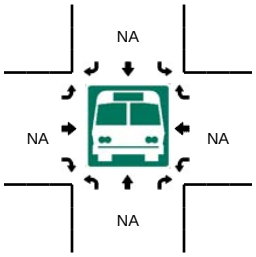












15-Min Count Period Beginning At	Harrison St (Northbound)				Harrison St (Southbound)				15th St (Eastbound)				15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	32	0	0	2	69	10	0	3	0	5	0	0	0	0	0	129	
7:15 AM	11	37	1	0	2	74	12	0	1	0	4	0	0	2	0	0	144	
7:30 AM	12	44	1	0	4	89	14	0	1	1	6	0	1	0	1	0	174	
7:45 AM	11	52	1	0	2	97	15	0	3	3	9	0	0	3	2	0	198	645
8:00 AM	26	55	2	1	4	94	17	0	3	4	9	0	2	4	2	0	223	739
8:15 AM	20	73	4	1	4	83	18	0	2	0	7	0	4	0	2	0	218	813
8:30 AM	26	63	2	0	3	89	21	0	6	0	7	0	0	3	2	0	222	861
8:45 AM	14	64	4	0	2	95	19	0	4	1	6	0	1	0	3	0	213	876

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	104	220	8	4	16	376	68	0	12	16	36	0	8	16	8	0	892
Heavy Trucks	4	16	0		0	0	4		0	0	4		0	0	0		28
Pedestrians		0				52				40				24			116
Bicycles	2	23	0		0	12	1		1	0	0		0	0	0		39
Railroad Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

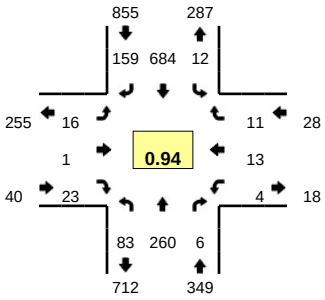
Type of peak hour being reported: Intersection Peak

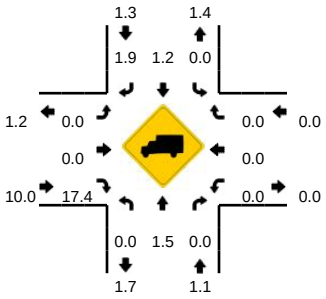
Method for determining peak hour: Total Entering Volume

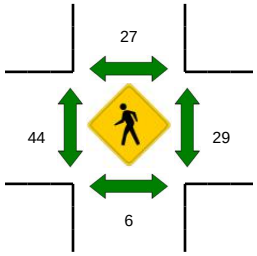
LOCATION: Harrison St -- 15th St
CITY/STATE: San Francisco, CA

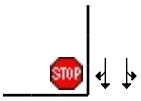
QC JOB #: 10944910
DATE: Wed, May 15 2013

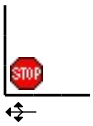
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

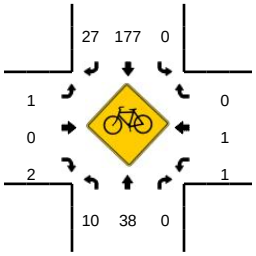


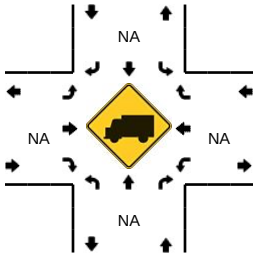


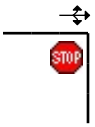


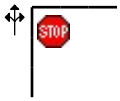


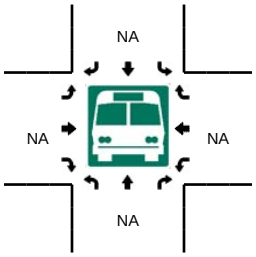












15-Min Count Period Beginning At	Harrison St (Northbound)				Harrison St (Southbound)				15th St (Eastbound)				15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	23	64	0	0	2	149	29	0	14	1	9	0	1	4	8	0	304	
4:15 PM	20	63	0	0	2	138	38	0	1	0	8	0	4	0	2	0	276	
4:30 PM	16	57	1	0	3	162	30	0	2	0	6	1	1	7	4	0	290	
4:45 PM	16	66	0	0	2	170	30	0	5	2	9	0	0	5	3	0	308	1178
5:00 PM	11	69	2	1	1	176	40	0	2	0	6	0	1	1	2	0	312	1186
5:15 PM	23	62	3	0	4	161	40	0	5	0	5	1	1	1	5	0	311	1221
5:30 PM	30	66	0	0	1	163	32	0	5	0	5	0	2	2	4	0	310	1241
5:45 PM	18	63	1	0	5	184	47	1	3	1	7	0	0	9	0	0	339	1272

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	72	252	4	0	20	736	188	4	12	4	28	0	0	36	0	0	1356
Heavy Trucks	0	4	0		0	12	4		0	0	0		0	0	0		20
Pedestrians		8				24				36				44			112
Bicycles	3	10	0		0	52	10		0	0	0		1	1	0		77
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

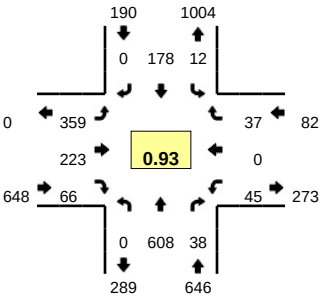
Type of peak hour being reported: Intersection Peak

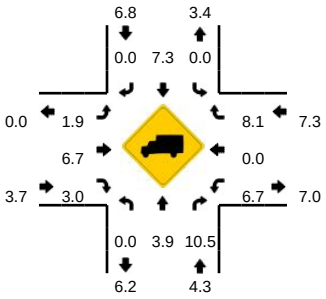
Method for determining peak hour: Total Entering Volume

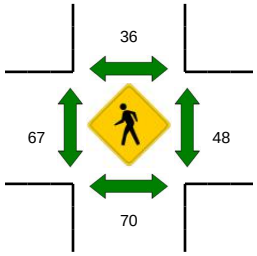
LOCATION: Folsom St -- 14th St
CITY/STATE: San Francisco, CA

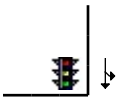
QC JOB #: 10944911
DATE: Wed, May 15 2013

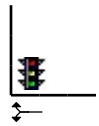
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

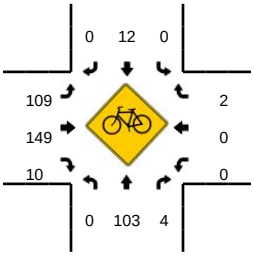


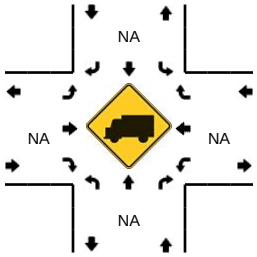


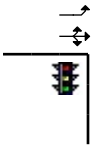


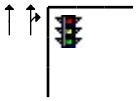


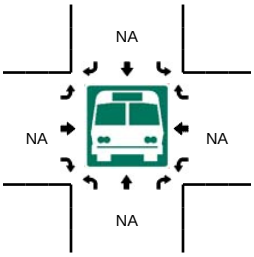












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	66	4	0	2	23	0	0	47	28	9	0	5	0	6	0	190	
7:15 AM	0	88	5	0	1	23	0	0	48	35	11	0	7	0	6	0	224	
7:30 AM	0	132	4	0	2	53	0	0	76	40	7	0	4	0	7	0	325	
7:45 AM	0	138	11	0	2	30	0	0	73	63	16	0	6	0	3	0	342	1081
8:00 AM	0	139	8	0	4	38	0	0	90	58	13	0	7	0	5	0	362	1253
8:15 AM	0	145	7	0	1	51	0	0	80	64	16	0	10	0	10	0	384	1413
8:30 AM	0	162	12	0	1	44	0	0	92	50	18	0	13	0	9	0	401	1489
8:45 AM	0	162	11	0	6	45	0	0	97	51	19	0	15	0	13	0	419	1566

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	648	44	0	24	180	0	0	388	204	76	0	60	0	52	0	1676
Heavy Trucks	0	12	4		0	16	0		4	20	0		0	0	4		60
Pedestrians		72				52				56				56			236
Bicycles	0	35	0		0	6	0		38	46	4		0	0	1		130
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

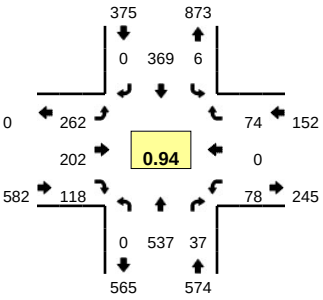
Type of peak hour being reported: Intersection Peak

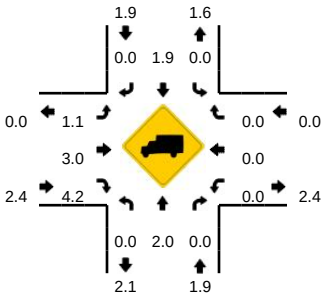
Method for determining peak hour: Total Entering Volume

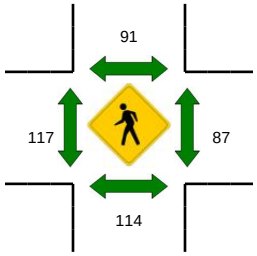
LOCATION: Folsom St -- 14th St
CITY/STATE: San Francisco, CA

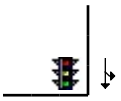
QC JOB #: 10944912
DATE: Wed, May 15 2013

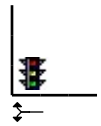
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

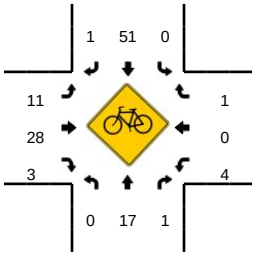


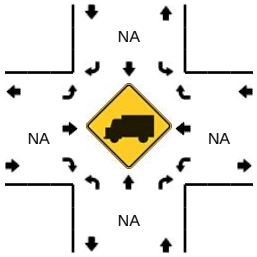


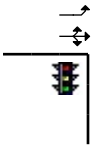


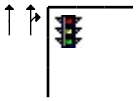


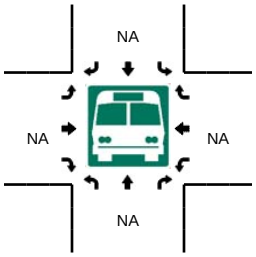












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	158	6	0	1	93	0	1	74	55	18	0	25	0	21	0	452	
4:15 PM	0	128	9	0	1	82	0	0	68	40	33	0	11	0	22	0	394	
4:30 PM	0	136	11	0	3	91	0	0	70	43	27	0	21	0	13	0	415	
4:45 PM	0	115	8	0	2	79	0	0	73	52	24	0	14	0	21	0	388	1649
5:00 PM	0	140	13	0	1	86	0	0	58	55	34	0	23	0	22	0	432	1629
5:15 PM	0	146	5	0	0	113	0	0	61	52	33	0	20	0	18	0	448	1683
5:30 PM	0	123	4	0	2	103	0	1	52	53	25	0	16	0	25	0	404	1672
5:45 PM	0	109	8	0	3	94	0	0	63	27	17	0	20	0	22	0	363	1647

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	584	20	0	0	452	0	0	244	208	132	0	80	0	72	0	1792
Heavy Trucks	0	4	0		0	4	0		4	4	4		0	0	0		20
Pedestrians		112				132				164				72			480
Bicycles	0	4	0		0	17	0		4	8	0		1	0	0		34
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

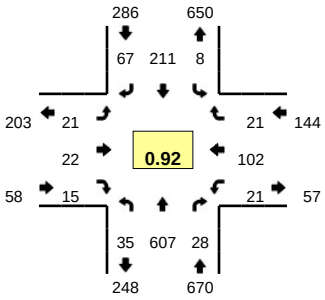
Type of peak hour being reported: Intersection Peak

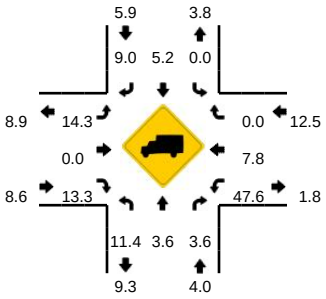
Method for determining peak hour: Total Entering Volume

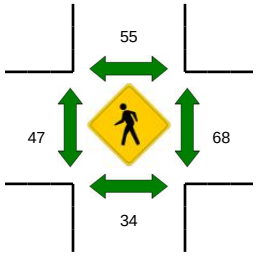
LOCATION: Folsom St -- 15th St
CITY/STATE: San Francisco, CA

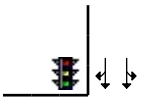
QC JOB #: 10944913
DATE: Wed, May 15 2013

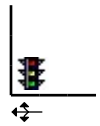
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

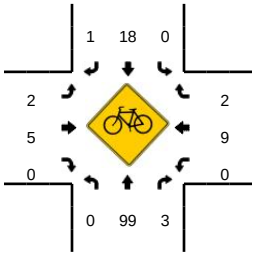


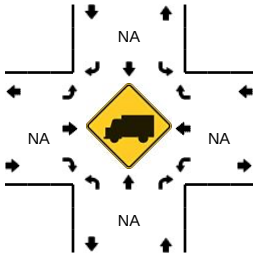


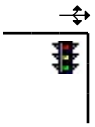


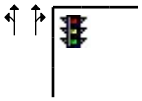


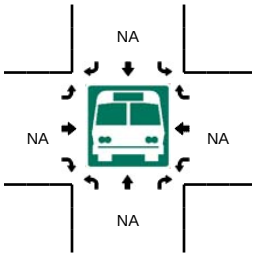












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				15th St (Eastbound)				15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	65	5	0	1	30	2	0	1	0	2	0	5	13	4	0	134	
7:15 AM	9	77	3	0	2	27	8	1	2	1	0	0	3	10	3	0	146	
7:30 AM	12	139	6	0	0	48	14	0	4	1	4	0	6	19	3	0	256	
7:45 AM	11	137	11	0	1	39	10	0	5	2	6	0	3	21	10	0	256	792
8:00 AM	6	139	7	0	2	48	12	0	6	8	3	0	4	29	6	0	270	928
8:15 AM	10	144	6	0	1	49	16	0	5	5	3	0	4	23	4	0	270	1052
8:30 AM	7	162	5	1	4	53	15	1	6	4	4	0	8	30	4	0	304	1100
8:45 AM	11	162	10	0	0	61	24	0	4	5	5	0	5	20	7	0	314	1158

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	648	40	0	0	244	96	0	16	20	20	0	20	80	28	0	1256
Heavy Trucks	4	8	0		0	16	4		4	0	4		8	8	0		56
Pedestrians		20				52				36				60			168
Bicycles	0	34	0		0	11	0		0	2	0		0	2	1		50
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

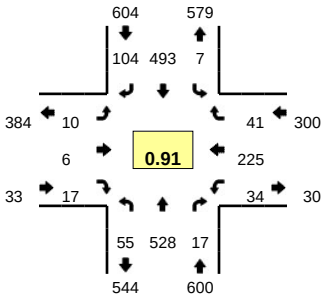
Type of peak hour being reported: Intersection Peak

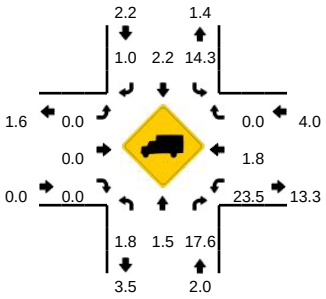
Method for determining peak hour: Total Entering Volume

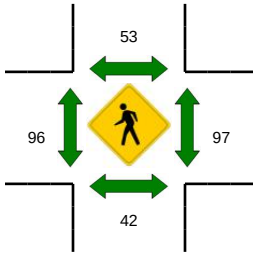
LOCATION: Folsom St -- 15th St
CITY/STATE: San Francisco, CA

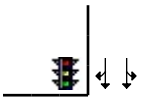
QC JOB #: 10944914
DATE: Wed, May 15 2013

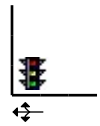
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

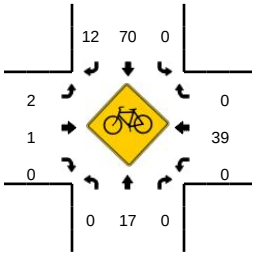


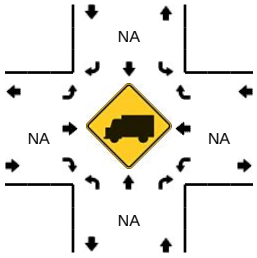


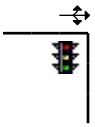


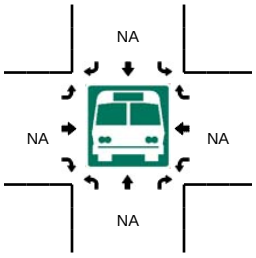












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				15th St (Eastbound)				15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	13	149	6	1	3	108	29	0	2	2	6	0	10	31	23	0	383	
4:15 PM	11	122	7	0	1	116	18	0	8	1	1	0	7	45	12	0	349	
4:30 PM	8	125	2	0	2	103	34	0	1	4	7	0	6	45	14	0	351	
4:45 PM	15	107	2	0	5	118	28	0	1	4	5	0	7	45	8	0	345	1428
5:00 PM	16	143	4	0	1	109	27	0	4	0	5	0	6	53	10	0	378	1423
5:15 PM	15	137	6	0	2	145	22	0	3	2	5	0	9	65	10	0	421	1495
5:30 PM	13	129	3	0	2	131	27	0	0	0	2	0	8	48	11	0	374	1518
5:45 PM	11	119	4	0	2	108	28	0	3	4	5	0	11	59	10	0	364	1537

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	60	548	24	0	8	580	88	0	12	8	20	0	36	260	40	0	1684
Heavy Trucks	4	4	4		4	12	0		0	0	0		8	4	0		40
Pedestrians		16				40				100				88			244
Bicycles	0	3	0		0	17	3		0	0	0		0	13	0		36
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

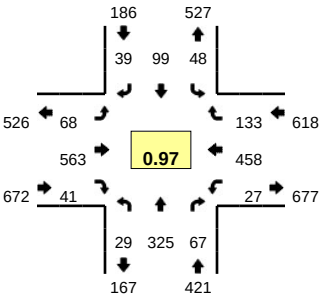
Type of peak hour being reported: Intersection Peak

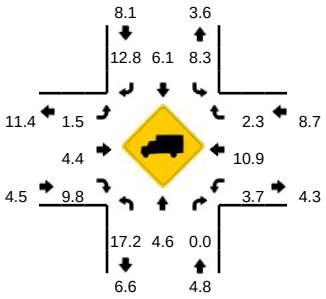
Method for determining peak hour: Total Entering Volume

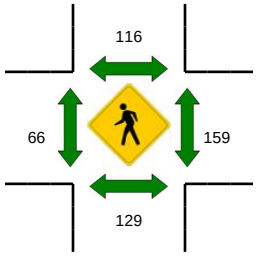
LOCATION: Bryant St -- 16th St
CITY/STATE: San Francisco, CA

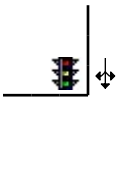
QC JOB #: 10944915
DATE: Wed, May 15 2013

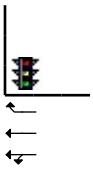
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

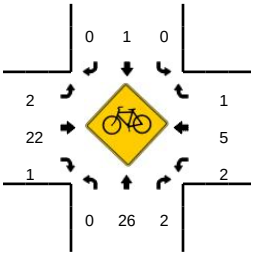


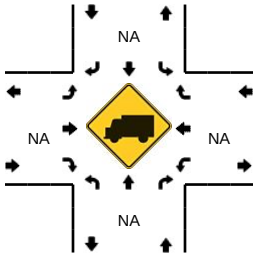


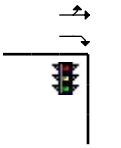


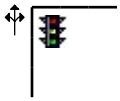


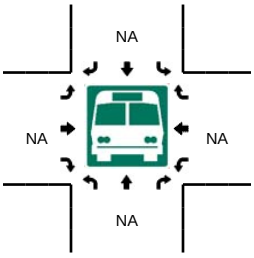












15-Min Count Period Beginning At	Bryant St (Northbound)				Bryant St (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	28	14	0	10	11	7	0	11	80	3	0	6	81	23	0	281	
7:15 AM	11	32	10	0	9	13	7	0	12	89	4	0	9	92	23	0	311	
7:30 AM	3	60	16	0	14	17	9	0	18	101	7	0	8	99	22	0	374	
7:45 AM	6	70	16	0	10	22	9	0	21	107	5	1	8	125	34	0	434	1400
8:00 AM	10	76	21	0	11	18	13	0	14	120	10	0	9	115	33	0	450	1569
8:15 AM	3	78	17	0	12	23	5	1	16	162	13	0	4	117	34	0	485	1743
8:30 AM	8	88	19	0	12	30	8	0	21	136	7	0	4	120	36	0	489	1858
8:45 AM	8	83	10	0	12	28	13	0	17	145	11	0	10	106	30	0	473	1897

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	352	76	0	48	120	32	0	84	544	28	0	16	480	144	0	1956
Heavy Trucks	4	20	0		8	8	0		0	32	0		0	56	0		128
Pedestrians		208				128				80				144			560
Bicycles	0	5	1		0	0	0		0	4	0		0	1	0		11
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

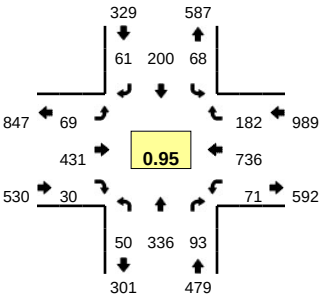
Type of peak hour being reported: Intersection Peak

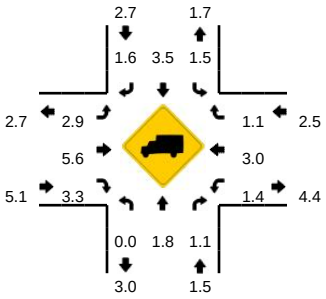
Method for determining peak hour: Total Entering Volume

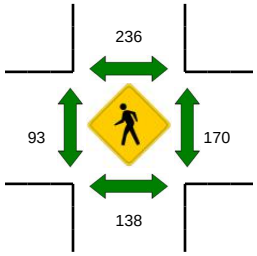
LOCATION: Bryant St -- 16th St
CITY/STATE: San Francisco, CA

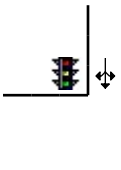
QC JOB #: 10944916
DATE: Wed, May 15 2013

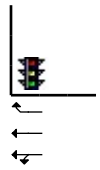
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

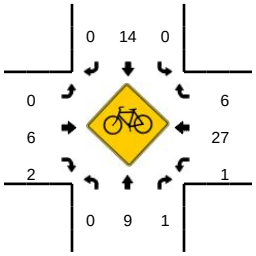


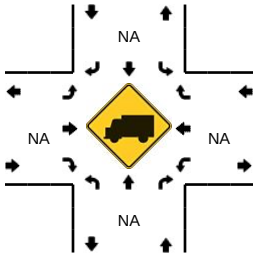


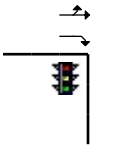


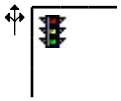


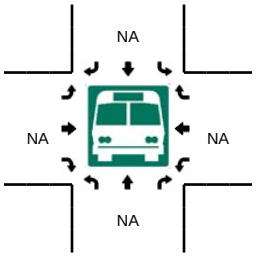












15-Min Count Period Beginning At	Bryant St (Northbound)				Bryant St (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	106	25	0	14	27	11	0	21	135	10	0	14	137	38	0	544	
4:15 PM	14	89	19	1	19	48	13	0	15	120	9	0	15	135	49	0	546	
4:30 PM	11	70	23	0	16	47	14	0	18	115	4	0	12	134	38	0	502	
4:45 PM	8	77	22	0	16	53	17	0	24	108	7	0	14	165	37	0	548	2140
5:00 PM	8	74	28	0	14	45	11	0	17	98	9	0	15	174	41	0	534	2130
5:15 PM	13	101	22	0	17	49	18	0	19	104	11	0	11	175	44	0	584	2168
5:30 PM	21	82	22	0	16	56	20	0	20	119	4	0	23	180	50	0	613	2279
5:45 PM	8	79	21	0	21	50	12	0	13	110	6	0	22	207	47	0	596	2327

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	328	88	0	64	224	80	0	80	476	16	0	92	720	200	0	2452
Heavy Trucks	0	4	4		0	4	0		0	32	0		0	20	0		64
Pedestrians		236				320				84				208			848
Bicycles	0	1	1		0	5	0		0	0	0		0	10	1		18
Railroad Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

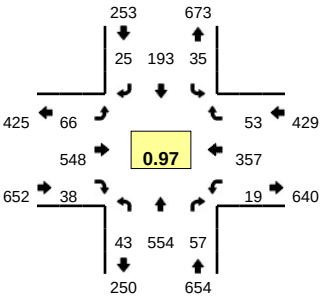
Type of peak hour being reported: Intersection Peak

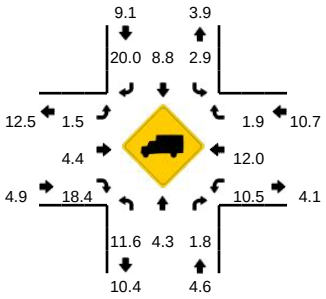
Method for determining peak hour: Total Entering Volume

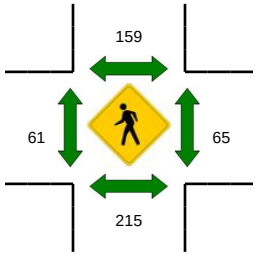
LOCATION: Folsom St -- 16th St
CITY/STATE: San Francisco, CA

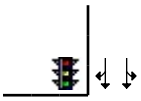
QC JOB #: 10944919
DATE: Wed, May 15 2013

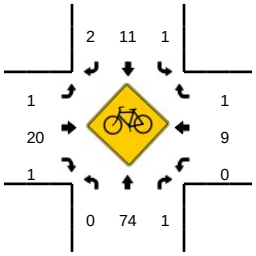
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

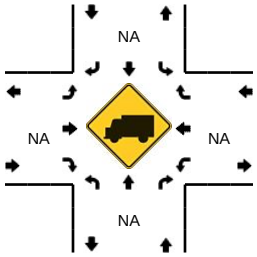


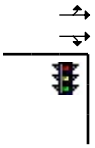


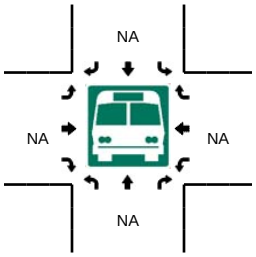












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	65	7	0	7	22	5	0	7	68	7	0	5	52	10	0	257	
7:15 AM	4	75	10	0	6	19	5	0	7	75	4	0	4	62	10	0	281	
7:30 AM	11	124	16	0	9	40	9	0	16	120	8	0	4	65	12	0	434	
7:45 AM	8	139	12	0	8	33	5	0	10	99	12	0	4	97	16	0	443	1415
8:00 AM	15	130	18	0	10	43	3	0	15	127	10	0	4	99	11	0	485	1643
8:15 AM	11	135	21	0	5	48	6	0	16	142	10	0	5	83	8	0	490	1852
8:30 AM	7	145	9	0	9	50	7	0	17	149	8	0	3	92	15	0	511	1929
8:45 AM	10	144	9	0	11	52	9	0	18	130	10	0	7	83	19	0	502	1988

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	580	36	0	36	200	28	0	68	596	32	0	12	368	60	0	2044
Heavy Trucks	4	32	4		0	24	4		0	24	8		0	48	0		148
Pedestrians		216				144				52				48			460
Bicycles	0	24	0		0	1	1		0	3	1		0	1	1		32
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

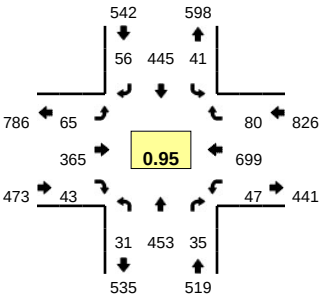
Type of peak hour being reported: Intersection Peak

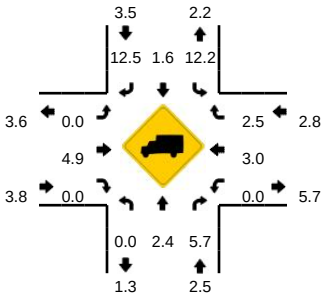
Method for determining peak hour: Total Entering Volume

LOCATION: Folsom St -- 16th St
CITY/STATE: San Francisco, CA

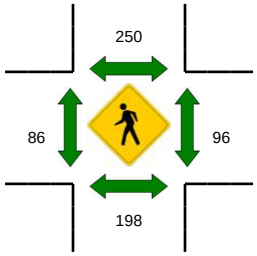
QC JOB #: 10944920
DATE: Wed, May 15 2013

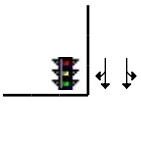
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

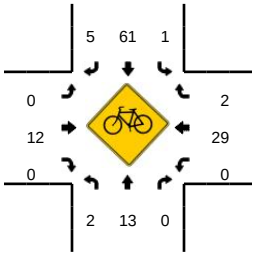


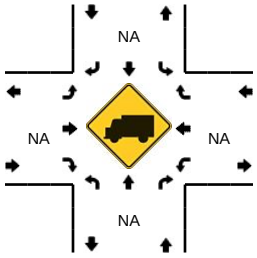


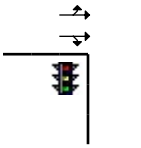
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

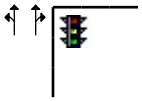


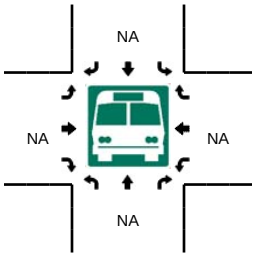












15-Min Count Period Beginning At	Folsom St (Northbound)				Folsom St (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	145	13	0	11	87	20	0	14	92	21	0	14	134	14	0	570	
4:15 PM	8	95	15	0	15	95	13	0	18	95	18	0	4	147	16	0	539	
4:30 PM	7	96	18	0	10	93	15	0	17	93	9	0	11	128	19	0	516	
4:45 PM	7	113	13	0	9	109	11	0	10	92	10	0	17	160	16	0	567	2192
5:00 PM	5	110	10	0	8	100	11	0	15	80	12	0	13	149	22	0	535	2157
5:15 PM	7	126	11	0	18	113	20	0	21	84	10	0	7	175	26	0	618	2236
5:30 PM	9	116	5	0	5	128	13	0	12	112	8	0	12	182	17	0	619	2339
5:45 PM	10	101	9	0	10	104	12	0	17	89	13	0	15	193	15	0	588	2360

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	36	464	20	0	20	512	52	0	48	448	32	0	48	728	68	0	2476
Heavy Trucks	0	8	0		4	4	8		0	16	0		0	16	4		60
Pedestrians		212				328				100				80			720
Bicycles	0	1	0		1	14	1		0	1	0		0	10	0		28
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

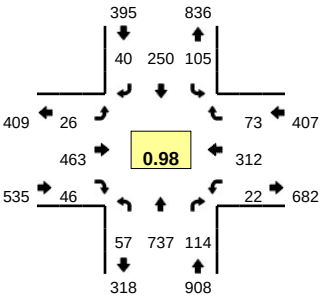
LOCATION: S Van Ness Ave -- 16th St

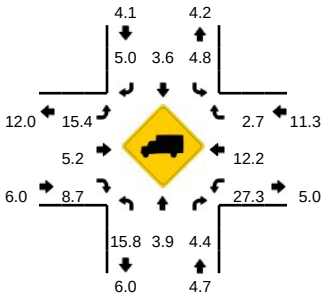
QC JOB #: 10944921

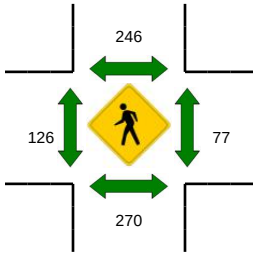
CITY/STATE: San Francisco, CA

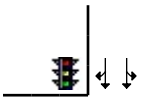
DATE: Wed, May 15 2013

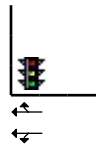
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

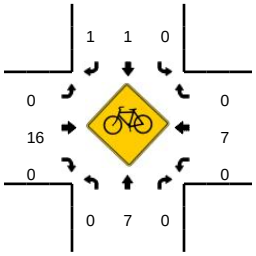


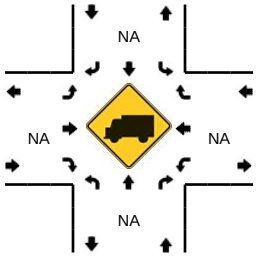


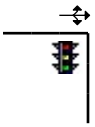


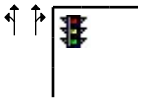


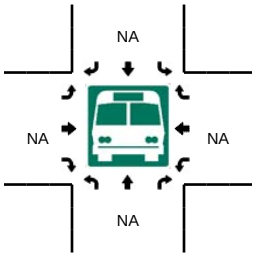












15-Min Count Period Beginning At	S Van Ness Ave (Northbound)				S Van Ness Ave (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	66	5	0	14	36	2	0	3	66	7	0	2	48	7	0	262	
7:15 AM	13	119	9	0	8	54	8	0	2	67	9	0	5	54	10	0	358	
7:30 AM	16	148	24	0	20	77	4	0	7	89	10	0	5	59	9	0	468	
7:45 AM	19	174	19	0	17	41	7	0	5	89	0	0	2	91	16	0	480	1568
8:00 AM	21	176	31	0	24	48	11	0	7	106	13	0	9	80	16	0	542	1848
8:15 AM	15	194	25	0	22	61	16	0	5	116	9	0	1	73	23	0	560	2050
8:30 AM	15	175	33	0	28	70	11	0	6	122	12	0	4	78	21	0	575	2157
8:45 AM	6	192	25	0	31	71	2	0	8	119	12	0	8	81	13	0	568	2245

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	60	700	132	0	112	280	44	0	24	488	48	0	16	312	84	0	2300
Heavy Trucks	4	40	12		4	12	4		4	20	8		4	48	4		164
Pedestrians		268				276				160				88			792
Bicycles	0	2	0		0	0	0		0	2	0		0	2	0		6
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: S Van Ness Ave -- 16th St

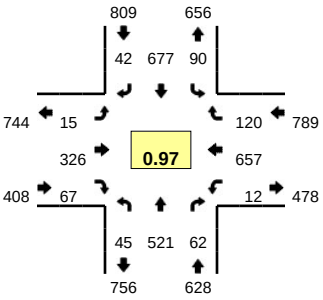
QC JOB #: 10944922

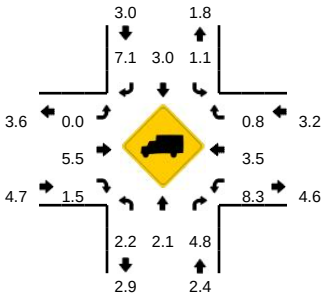
CITY/STATE: San Francisco, CA

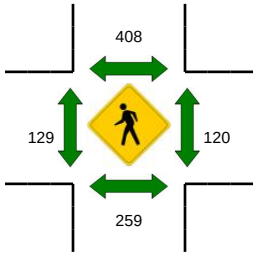
DATE: Wed, May 15 2013

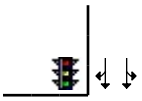
Peak-Hour: 5:00 PM -- 6:00 PM

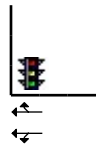
Peak 15-Min: 5:30 PM -- 5:45 PM

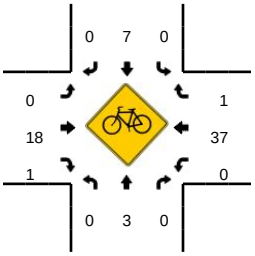


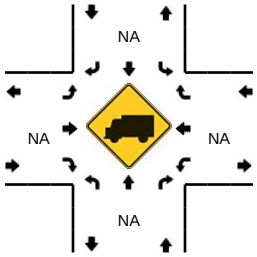


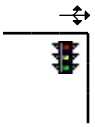


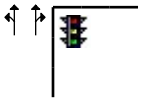


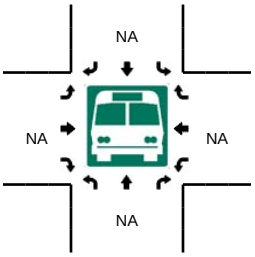












15-Min Count Period Beginning At	S Van Ness Ave (Northbound)				S Van Ness Ave (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	156	24	0	22	166	9	0	2	86	17	0	6	147	20	0	667	
4:15 PM	12	149	32	0	17	163	10	0	0	75	19	0	2	148	19	0	646	
4:30 PM	13	128	22	0	25	174	11	0	1	74	14	0	2	115	31	0	610	
4:45 PM	11	139	16	0	27	183	7	0	1	74	12	0	1	140	35	0	646	2569
5:00 PM	13	139	17	0	19	186	8	0	4	80	16	0	5	146	29	0	662	2564
5:15 PM	12	133	16	0	12	169	6	0	5	77	11	0	0	169	36	0	646	2564
5:30 PM	12	138	15	0	26	156	12	0	1	91	27	0	2	173	25	0	678	2632
5:45 PM	8	111	14	0	33	166	16	0	5	78	13	0	5	169	30	0	648	2634

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	552	60	0	104	624	48	0	4	364	108	0	8	692	100	0	2712
Heavy Trucks	0	20	0		0	16	4		0	12	4		0	28	4		88
Pedestrians		280				452				144				116			992
Bicycles	0	1	0		0	0	0		0	1	1		0	8	1		12
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: S Van Ness Ave -- 15th St

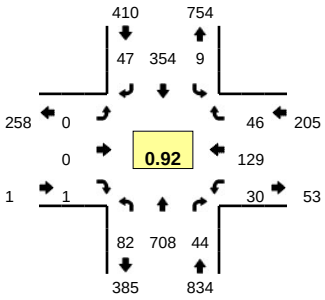
CITY/STATE: San Francisco, CA

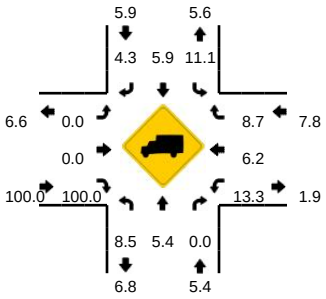
QC JOB #: 10944923

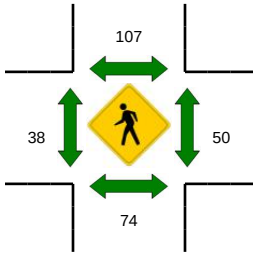
DATE: Wed, May 15 2013

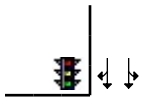
Peak-Hour: 8:00 AM -- 9:00 AM

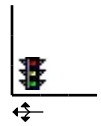
Peak 15-Min: 8:30 AM -- 8:45 AM

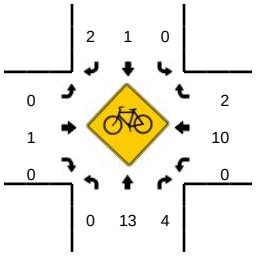


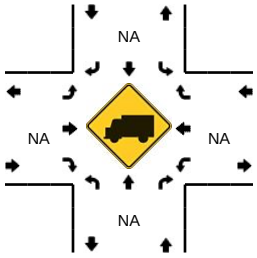


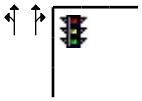


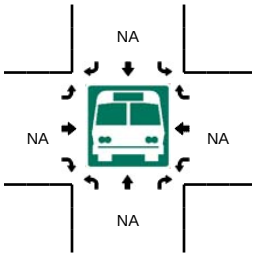












15-Min Count Period Beginning At	S Van Ness Ave (Northbound)				S Van Ness Ave (Southbound)				15th St (Eastbound)				15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	74	0	0	0	52	6	0	0	0	0	0	2	16	3	0	160	
7:15 AM	16	115	2	0	0	71	2	0	0	0	0	0	3	21	6	0	236	
7:30 AM	10	156	0	0	1	104	10	0	0	0	0	0	4	36	6	0	327	
7:45 AM	20	163	10	0	0	58	11	0	0	0	0	0	3	26	7	0	298	1021
8:00 AM	22	157	12	0	1	74	13	0	0	0	0	0	8	31	8	0	326	1187
8:15 AM	18	189	6	0	2	82	7	0	0	0	0	0	13	16	12	0	345	1296
8:30 AM	22	182	18	0	2	97	12	0	0	0	1	0	4	42	12	0	392	1361
8:45 AM	20	180	8	0	4	101	15	0	0	0	0	0	5	40	14	0	387	1450

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	88	728	72	0	8	388	48	0	0	0	4	0	16	168	48	0	1568
Heavy Trucks	12	52	0		0	28	0		0	0	4		0	8	0		104
Pedestrians		108				144				52				60			364
Bicycles	0	3	0		0	0	0		0	0	0		0	2	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

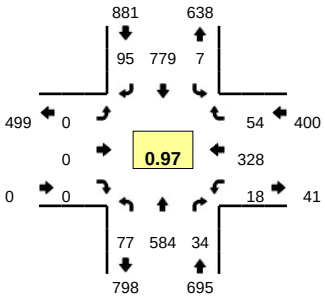
Type of peak hour being reported: Intersection Peak

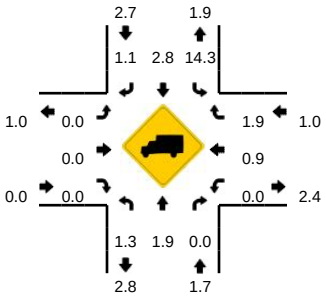
Method for determining peak hour: Total Entering Volume

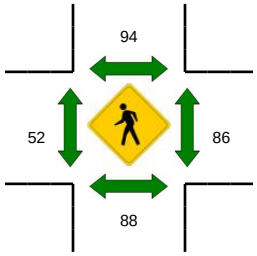
LOCATION: S Van Ness Ave -- 15th St
CITY/STATE: San Francisco, CA

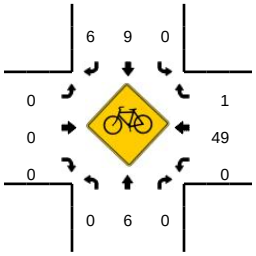
QC JOB #: 10944924
DATE: Wed, May 15 2013

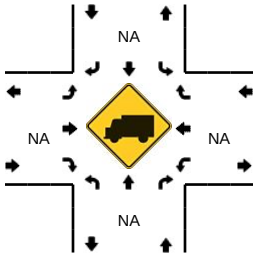
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

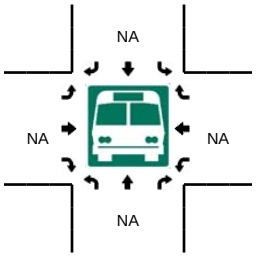












15-Min Count Period Beginning At	S Van Ness Ave (Northbound)				S Van Ness Ave (Southbound)				15th St (Eastbound)				15th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	19	153	4	0	1	193	27	1	0	0	0	0	3	69	9	0	479	
4:15 PM	16	142	8	0	5	184	22	0	0	0	0	0	5	64	3	0	449	
4:30 PM	12	147	4	0	2	189	24	0	0	0	0	0	4	72	23	0	477	
4:45 PM	26	138	12	0	1	215	18	0	0	0	0	0	2	77	14	0	503	1908
5:00 PM	19	152	13	0	1	199	22	0	0	0	0	0	6	86	10	0	508	1937
5:15 PM	19	147	5	1	3	176	31	0	0	0	0	0	6	93	7	0	488	1976
5:30 PM	25	134	5	0	2	179	32	2	0	0	0	0	7	79	12	0	477	1976
5:45 PM	11	130	3	0	4	219	19	0	0	0	0	0	5	87	11	0	489	1962

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	608	52	0	4	796	88	0	0	0	0	0	24	344	40	0	2032
Heavy Trucks	0	16	0		4	28	0		0	0	0		0	4	0		52
Pedestrians		120				108				52				116			396
Bicycles	0	3	0		0	3	1		0	0	0		0	11	0		18
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

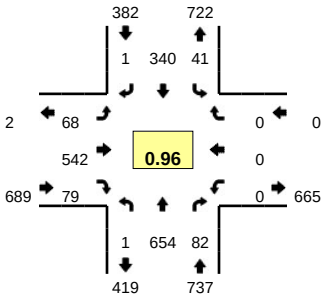
LOCATION: S Van Ness Ave -- 14th St

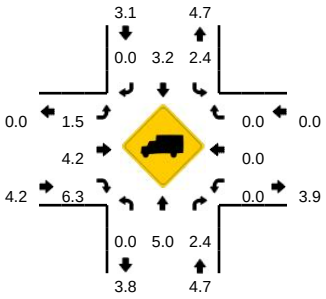
QC JOB #: 10944925

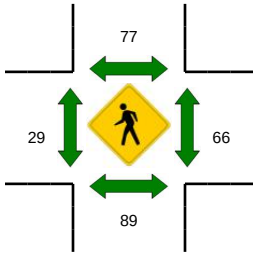
CITY/STATE: San Francisco, CA

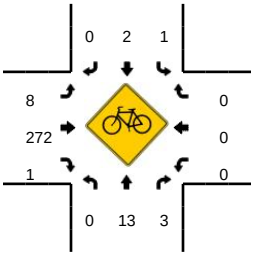
DATE: Wed, May 15 2013

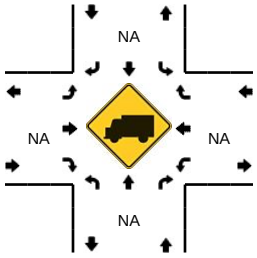
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

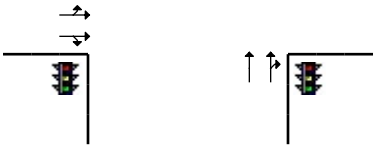


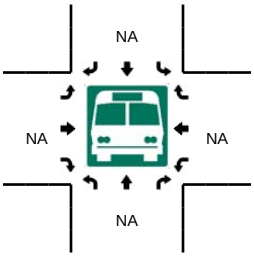












15-Min Count Period Beginning At	S Van Ness Ave (Northbound)				S Van Ness Ave (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	71	7	1	4	45	0	0	7	70	10	0	0	0	0	0	215	
7:15 AM	0	109	11	0	9	59	1	0	12	80	13	0	1	0	0	0	295	
7:30 AM	0	157	8	0	3	94	0	0	16	104	18	0	0	0	0	0	400	
7:45 AM	0	157	9	0	8	62	0	0	10	136	9	0	0	0	0	0	391	1301
8:00 AM	0	145	16	0	6	71	0	0	14	144	15	0	0	0	0	0	411	1497
8:15 AM	0	172	23	0	6	81	1	0	24	137	10	0	0	0	0	0	454	1656
8:30 AM	0	173	20	0	20	90	0	0	11	134	25	0	0	0	0	0	473	1729
8:45 AM	1	164	23	0	9	98	0	0	19	127	29	0	0	0	0	0	470	1808

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	692	80	0	80	360	0	0	44	536	100	0	0	0	0	0	1892
Heavy Trucks	0	40	4		4	16	0		0	24	4		0	0	0		92
Pedestrians		100				80				32				96			308
Bicycles	0	3	1		0	0	0		3	84	0		0	0	0		91
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

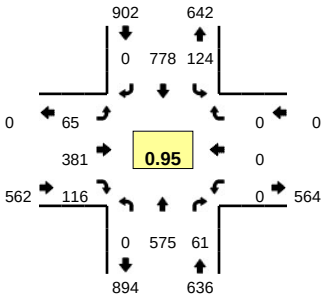
Method for determining peak hour: Total Entering Volume

LOCATION: S Van Ness Ave -- 14th St

QC JOB #: 10944926

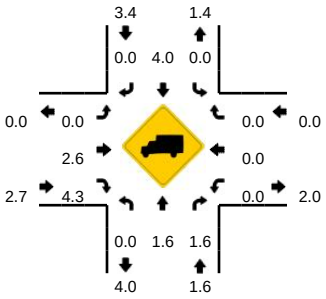
CITY/STATE: San Francisco, CA

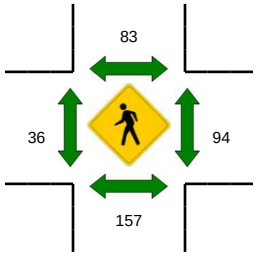
DATE: Wed, May 15 2013

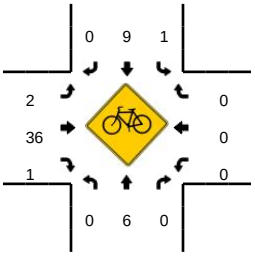


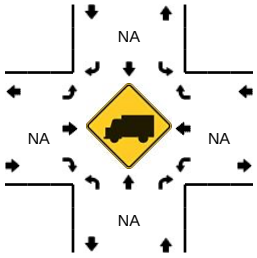
Peak-Hour: 4:00 PM -- 5:00 PM

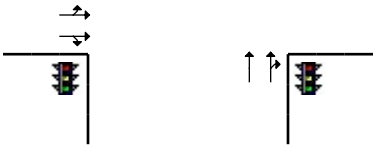
Peak 15-Min: 4:00 PM -- 4:15 PM

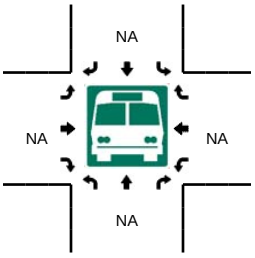












15-Min Count Period Beginning At	S Van Ness Ave (Northbound)				S Van Ness Ave (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	156	16	0	31	204	0	1	18	92	32	0	0	0	0	0	550	
4:15 PM	0	131	16	0	26	184	0	0	15	96	35	0	0	0	0	0	503	
4:30 PM	0	154	15	0	30	193	0	1	20	91	25	0	0	0	0	0	529	
4:45 PM	0	134	14	0	35	197	0	0	12	102	24	0	0	0	0	0	518	2100
5:00 PM	0	146	18	0	34	202	0	0	11	94	34	0	0	0	0	0	539	2089
5:15 PM	0	147	12	0	29	181	0	0	3	96	22	0	0	0	0	0	490	2076
5:30 PM	0	123	17	0	19	194	0	0	5	84	27	0	0	0	0	0	469	2016
5:45 PM	0	133	11	0	30	224	0	0	9	65	18	0	0	0	0	0	490	1988

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	624	64	0	124	816	0	4	72	368	128	0	0	0	0	0	2200
Heavy Trucks	0	16	4		0	40	0		0	12	8		0	0	0		80
Pedestrians		132				92				36				92			352
Bicycles	0	2	0		0	2	0		1	8	0		0	0	0		13
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

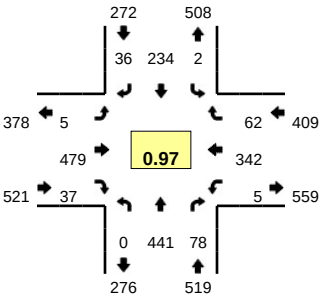
Type of peak hour being reported: Intersection Peak

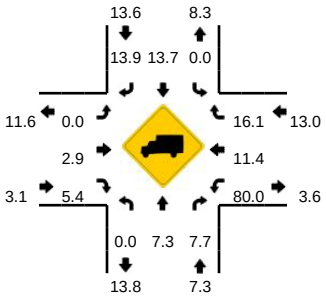
Method for determining peak hour: Total Entering Volume

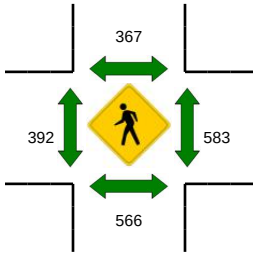
LOCATION: Mission St -- 16th St
CITY/STATE: San Francisco, CA

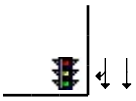
QC JOB #: 10944951
DATE: Wed, May 15 2013

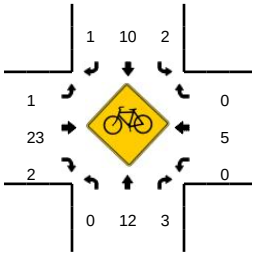
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

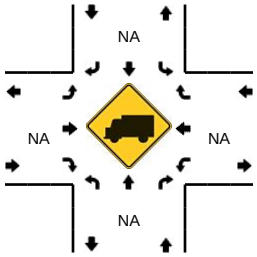


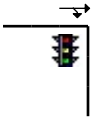


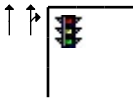


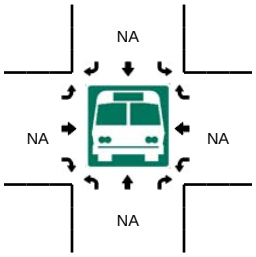












15-Min Count Period Beginning At	Mission St (Northbound)				Mission St (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	66	9	0	1	32	7	0	0	69	5	0	1	48	8	0	247	
7:15 AM	1	91	6	0	0	49	8	0	0	78	13	0	2	55	13	0	316	
7:30 AM	1	109	12	0	0	66	8	0	0	110	4	0	1	66	3	0	380	
7:45 AM	0	96	7	0	0	64	11	0	0	94	5	0	1	89	12	0	379	1322
8:00 AM	0	123	26	0	0	61	6	0	2	114	7	0	1	91	14	0	445	1520
8:15 AM	0	114	17	0	0	55	10	0	0	126	10	0	1	86	12	0	431	1635
8:30 AM	0	103	16	0	1	54	8	0	1	112	15	0	2	86	23	0	421	1676
8:45 AM	0	101	19	0	1	64	12	0	2	127	5	0	1	79	13	0	424	1721

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	492	104	0	0	244	24	0	8	456	28	0	4	364	56	0	1780
Heavy Trucks	0	40	12		0	32	4		0	16	4		4	40	8		160
Pedestrians		416				272				336				412			1436
Bicycles	0	4	2		0	2	0		0	4	2		0	0	0		14
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

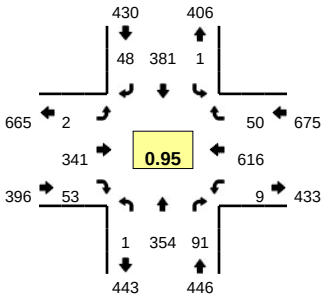
Type of peak hour being reported: Intersection Peak

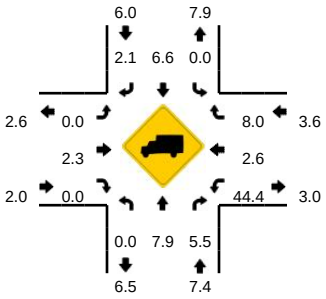
Method for determining peak hour: Total Entering Volume

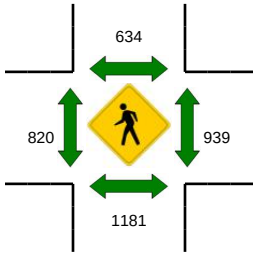
LOCATION: Mission St -- 16th St
CITY/STATE: San Francisco, CA

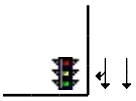
QC JOB #: 10944952
DATE: Wed, May 15 2013

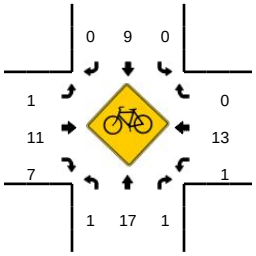
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

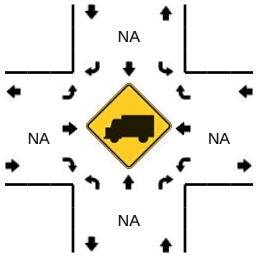


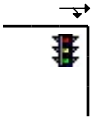


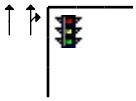


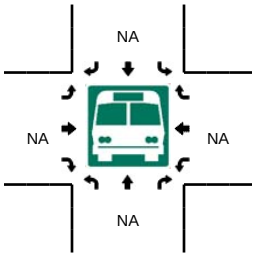












15-Min Count Period Beginning At	Mission St (Northbound)				Mission St (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	72	12	0	0	63	13	0	0	62	5	0	1	102	9	0	339	
4:15 PM	0	93	13	0	0	87	18	0	0	83	12	0	2	134	12	0	454	
4:30 PM	0	106	15	0	0	99	10	0	0	83	11	0	2	116	7	0	449	
4:45 PM	0	98	23	0	0	106	9	0	1	79	16	0	2	129	10	0	473	1715
5:00 PM	0	90	22	0	0	96	21	0	0	79	10	0	2	151	15	0	486	1862
5:15 PM	0	92	19	0	1	83	8	0	0	74	14	0	4	174	8	0	477	1885
5:30 PM	1	74	27	0	0	96	10	0	1	109	13	0	1	162	17	0	511	1947
5:45 PM	1	67	19	0	0	105	8	0	1	82	18	0	1	156	11	0	469	1943

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	296	108	0	0	384	40	0	4	436	52	0	4	648	68	0	2044
Heavy Trucks	0	32	4		0	24	0		0	4	0		4	20	4		92
Pedestrians		916				580				896				860			3252
Bicycles	0	4	0		0	2	0		0	4	3		1	3	0		17
Railroad Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

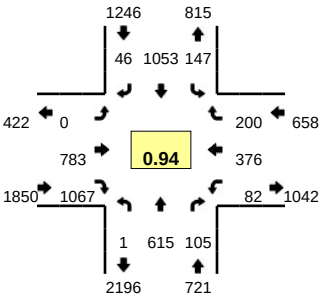
Method for determining peak hour: Total Entering Volume

LOCATION: South Van Ness Ave -- Division St

QC JOB #: 10944953

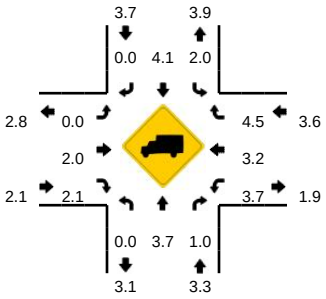
CITY/STATE: San Francisco, CA

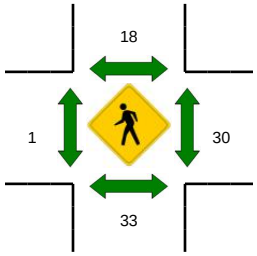
DATE: Tue, May 21 2013

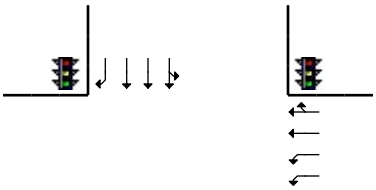


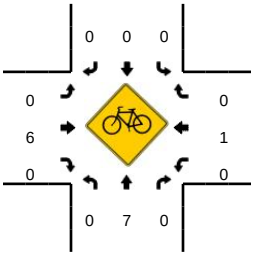
Peak-Hour: 8:00 AM -- 9:00 AM

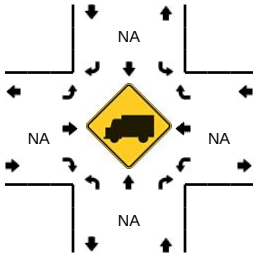
Peak 15-Min: 8:30 AM -- 8:45 AM

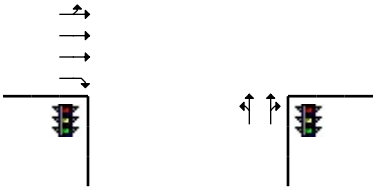


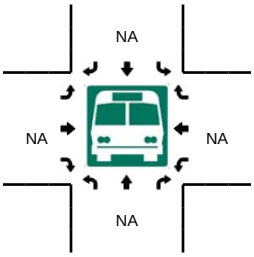












15-Min Count Period Beginning At	South Van Ness Ave (Northbound)				South Van Ness Ave (Southbound)				Division St (Eastbound)				Division St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	62	18	0	23	258	10	0	0	86	326	0	16	51	32	0	882	
7:15 AM	0	100	15	0	29	241	7	0	0	100	344	3	21	61	43	1	965	
7:30 AM	0	101	19	0	23	272	13	0	0	130	255	1	15	108	49	2	988	
7:45 AM	0	150	15	0	35	219	8	0	0	178	158	0	16	102	61	3	945	3780
8:00 AM	0	140	27	0	46	242	10	0	0	216	157	0	20	86	50	1	995	3893
8:15 AM	0	169	23	0	34	265	14	0	0	186	317	0	16	110	44	1	1179	4107
8:30 AM	0	163	38	0	29	294	12	0	0	187	303	0	20	86	54	1	1187	4306
8:45 AM	0	143	17	1	38	252	10	0	0	194	290	0	19	94	52	4	1114	4475

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	652	152	0	116	1176	48	0	0	748	1212	0	80	344	216	4	4748
Heavy Trucks	0	36	4		0	52	0		0	20	36		8	16	8		180
Pedestrians		40				36				0				16			92
Bicycles	0	3	0		0	0	0		0	2	0		0	0	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: South Van Ness Ave -- Division St

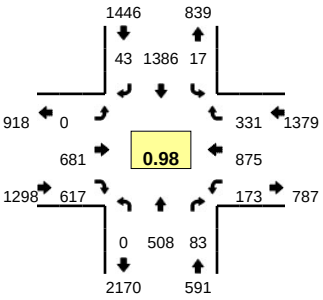
CITY/STATE: San Francisco, CA

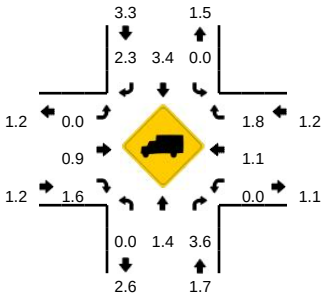
QC JOB #: 10944954

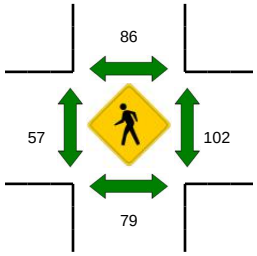
DATE: Tue, May 21 2013

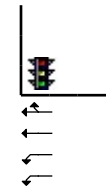
Peak-Hour: 4:45 PM -- 5:45 PM

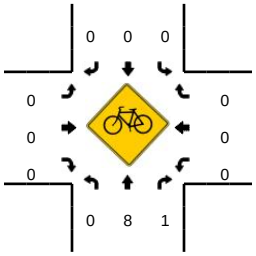
Peak 15-Min: 5:30 PM -- 5:45 PM

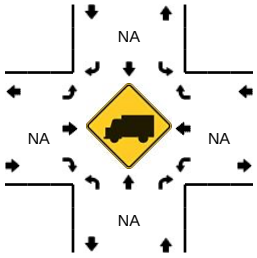


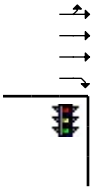


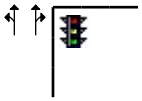


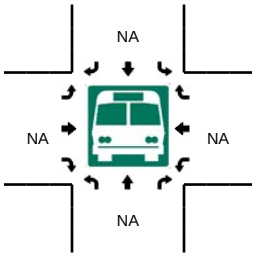












15-Min Count Period Beginning At	South Van Ness Ave (Northbound)				South Van Ness Ave (Southbound)				Division St (Eastbound)				Division St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	125	34	0	10	340	25	0	0	172	170	0	45	170	83	1	1175	
4:15 PM	0	115	12	0	4	354	5	0	0	170	155	0	38	170	76	0	1099	
4:30 PM	0	135	20	0	5	328	12	0	0	143	151	0	42	206	66	4	1112	
4:45 PM	0	154	18	0	6	323	13	0	0	172	168	0	36	208	69	1	1168	4554
5:00 PM	0	113	22	0	3	351	13	0	0	174	165	0	36	206	82	3	1168	4547
5:15 PM	0	125	18	0	3	349	7	0	0	147	142	0	53	241	83	2	1170	4618
5:30 PM	0	116	25	0	5	363	10	0	0	188	142	0	42	220	97	0	1208	4714
5:45 PM	0	105	30	0	8	357	18	0	0	137	147	0	35	225	66	0	1128	4674

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	464	100	0	20	1452	40	0	0	752	568	0	168	880	388	0	4832
Heavy Trucks	0	8	8		0	56	4		0	4	8		0	16	4		108
Pedestrians		88				100				68				84			340
Bicycles	0	1	1		0	0	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/30/2013 1:32 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

7409 SW Tech Center Dr, Ste B150
Tigard, OR 97223
503-620-4242
www.qualitycounts.net

Site Code: 10944901/10944902
Location: 10th St/US 101 S On Ramp -- Bryant St
Date: 5/15/2013

	10th St (Southbound)					Bryant St (Westbound)					10th St (Northbound)					US 101 S On Ramp (Northbound)					Bryant St (Eastbound)						
	U-Turns	Right to Bryant St	Thru to 10th St	Thru to US 101 S On Ramp	Left to Bryant St	U-Turns	Right to 10th St	Thru to Bryant St	Left to 10th St	Left to US 101 S On Ramp	U-Turns	Right to US 101 S On Ramp	Right to Bryant St	Thru to 10th St	Left to Bryant St	U-Turns	Right to Bryant St	Thru to 10th St	Left to Bryant St	Left to 10th St	U-Turns	Right to 10th St	Right to US 101 S On Ramp	Thru to Bryant St	Left to 10th St	Interval Totals	Hourly Totals
7:00 AM	0	0	39	72	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	10	0	150	
7:05 AM	0	0	32	65	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	15	0	144	
7:10 AM	0	0	25	65	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	21	0	148	
7:15 AM	0	0	34	70	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	152	
7:20 AM	0	0	38	62	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	21	0	159	
7:25 AM	0	0	33	41	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	43	0	159	
7:30 AM	0	0	33	77	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	38	0	202	
7:35 AM	0	0	32	88	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	21	0	167	
7:40 AM	0	0	30	81	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	43	0	205	
7:45 AM	0	0	40	75	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	26	0	189	
7:50 AM	0	0	53	58	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	34	0	186	
7:55 AM	0	0	48	75	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	48	0	211	2072
8:00 AM	0	0	58	66	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	28	0	189	2111
8:05 AM	0	0	87	79	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	35	0	250	2217
8:10 AM	0	0	61	43	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	36	0	195	2264
8:15 AM	0	0	69	54	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	36	0	202	2314
8:20 AM	0	0	75	61	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	47	0	240	2395
8:25 AM	0	0	63	54	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	48	0	215	2451
8:30 AM	0	0	53	57	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	37	0	206	2455
8:35 AM	0	0	57	48	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	40	0	211	2499
8:40 AM	0	0	38	57	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	9	48	0	208	2502
8:45 AM	0	0	50	49	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	36	0	171	2484
8:50 AM	0	0	64	74	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	43	0	244	2542
8:55 AM	0	0	73	41	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	54	0	222	2553
Totals	0	0	1185	1512	990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	92	821	0		

	10th St (Southbound)					Bryant St (Westbound)					10th St (Northbound)					US 101 S On Ramp (Northbound)					Bryant St (Eastbound)						
	U-Turns	Right to Bryant St	Thru to 10th St	Thru to US 101 S On Ramp	Left to Bryant St	U-Turns	Right to 10th St	Thru to Bryant St	Left to 10th St	Left to US 101 S On Ramp	U-Turns	Right to US 101 S On Ramp	Right to Bryant St	Thru to 10th St	Left to Bryant St	U-Turns	Right to Bryant St	Thru to 10th St	Left to Bryant St	Left to 10th St	U-Turns	Right to 10th St	Right to US 101 S On Ramp	Thru to Bryant St	Left to 10th St	Interval Totals	Hourly Totals
4:00 PM	0	0	55	67	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	41	0	204	
4:05 PM	0	0	64	59	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	55	0	248	
4:10 PM	0	0	47	53	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	75	0	228	
4:15 PM	0	0	58	54	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	38	0	207	
4:20 PM	0	1	51	62	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	56	0	234	
4:25 PM	0	0	52	45	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	46	0	204	
4:30 PM	0	0	46	55	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	12	37	0	198	
4:35 PM	0	0	66	58	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8	44	0	240	
4:40 PM	0	0	39	51	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	6	62	0	197	
4:45 PM	0	0	60	61	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	45	0	222	
4:50 PM	0	0	55	52	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10	36	0	200	
4:55 PM	0	0	62	50	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	67	0	233	2615
5:00 PM	0	0	69	55	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	41	0	215	2626
5:05 PM	0	0	51	53	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	14	39	0	207	2585
5:10 PM	0	0	50	45	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	13	68	0	229	2586
5:15 PM	0	0	68	62	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	9	51	0	250	2629
5:20 PM	0	0	48	56	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	45	0	199	2594
5:25 PM	0	0	52	49	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11	51	0	204	2594
5:30 PM	0	0	70	65	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	46	0	244	2640
5:35 PM	0	0	55	56	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	9	45	0	207	2607
5:40 PM	0	0	57	63	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	58	0	217	2627
5:45 PM	0	0	65	44	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	15	36	0	200	2605
5:50 PM	0	0	67	45	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	10	41	0	213	2618
5:55 PM	0	0	44	43	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	9	49	0	187	2572
Totals	0	1	1351	1303	1054	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	208	1172	0		

7409 SW Tech Center Dr, Ste B150
Tigard, OR 97223
503-620-4242
www.qualitycounts.net

Site Code: 10944917/10944918
Location: Harrison St/Treat Ave -- 16th St
Date: 5/15/2013

	Harrison St (Southbound)					16th St (Westbound)					Harrison St (Northbound)					Treat Ave (Northbound)					16th St (Eastbound)						
	U-Turns	Right to 16th St	Thru to Treat Ave	Thru to Harrison St	Left to 16th St	U-Turns	Right to Harrison St	Thru to 16th St	Left to Treat Ave	Left to Harrison St	U-Turns	Right to 16th St	Thru to Harrison St	Left to 16th St	Left to Treat Ave	U-Turns	Right to Harrison St	Right to 16th St	Thru to Harrison St	Left to 16th St	U-Turns	Right to Treat Ave	Right to Harrison St	Thru to 16th St	Left to Harrison St	Interval Totals	Hourly Totals
7:00 AM	0	1	5	14	6	0	5	20	0	1	0	3	10	2	0	0	0	0	0	0	0	0	2	21	0	90	
7:05 AM	0	1	5	14	3	0	1	18	1	2	0	1	8	3	0	0	0	0	0	0	0	0	2	24	2	85	
7:10 AM	0	1	3	14	5	0	2	21	2	3	0	0	14	0	0	0	0	0	0	0	0	0	0	27	0	92	
7:15 AM	0	1	9	10	6	0	4	15	0	2	0	2	6	0	0	0	0	0	0	0	0	0	0	20	0	75	
7:20 AM	0	1	0	21	4	0	4	29	0	0	0	2	10	3	0	0	0	0	0	0	0	0	1	26	2	103	
7:25 AM	0	3	1	11	6	0	6	19	0	1	0	1	13	2	0	0	0	0	0	0	0	1	2	26	2	94	
7:30 AM	0	6	2	12	2	0	6	16	0	0	0	0	9	2	1	0	0	0	0	0	0	1	3	34	0	94	
7:35 AM	0	1	5	16	11	0	5	27	0	1	0	3	8	4	1	0	0	0	0	0	0	0	3	40	2	127	
7:40 AM	0	2	3	20	8	0	2	18	1	0	0	4	22	3	1	0	0	0	0	0	0	0	3	44	0	131	
7:45 AM	0	0	5	10	5	0	3	32	0	3	0	2	13	5	0	0	0	0	0	0	0	0	3	44	3	128	
7:50 AM	0	4	8	13	10	0	1	24	0	1	0	4	21	1	2	0	0	0	0	0	0	2	2	26	1	120	
7:55 AM	0	8	4	26	9	0	3	31	0	2	0	8	18	1	0	0	0	0	0	0	0	2	1	37	0	150	1289
8:00 AM	0	5	7	24	7	0	6	23	2	1	0	3	18	2	1	0	0	0	0	0	0	1	0	39	1	140	1339
8:05 AM	0	1	5	18	5	0	4	25	0	2	0	2	20	0	1	0	0	0	0	0	0	0	5	44	0	132	1386
8:10 AM	0	4	8	13	6	0	2	33	1	2	0	4	27	1	1	0	0	0	0	0	0	1	0	54	3	160	1454
8:15 AM	0	2	3	14	6	0	8	23	0	2	0	6	25	3	1	0	0	0	0	0	0	1	1	49	4	148	1527
8:20 AM	0	0	6	19	10	0	4	26	3	4	0	5	21	1	0	0	0	0	0	0	0	1	2	57	1	160	1584
8:25 AM	0	1	5	18	6	0	4	34	0	1	0	6	29	3	2	0	0	0	0	0	0	1	1	39	1	151	1641
8:30 AM	0	1	4	21	11	0	5	22	1	1	0	1	21	2	1	0	0	0	0	0	0	3	2	51	1	148	1695
8:35 AM	0	0	5	23	4	0	9	38	1	2	0	7	26	0	0	0	0	0	0	0	0	1	0	55	1	172	1740
8:40 AM	0	4	1	17	5	0	5	27	2	2	0	4	18	1	1	0	0	0	0	0	0	1	5	42	2	137	1746
8:45 AM	0	2	3	23	5	0	1	27	0	0	0	6	15	5	0	0	0	0	0	0	0	4	1	40	1	133	1751
8:50 AM	0	4	3	17	8	0	2	31	0	1	0	7	19	2	1	0	0	0	0	0	0	0	2	43	5	145	1776
8:55 AM	0	3	2	22	8	0	4	28	1	1	0	5	25	1	0	0	0	0	0	0	0	2	2	40	4	148	1774
Totals	0	56	102	410	156	0	96	607	15	35	0	86	416	47	14	0	0	0	0	0	0	22	43	922	36		

	Harrison St (Southbound)					16th St (Westbound)					Harrison St (Northbound)					Treat Ave (Northbound)					16th St (Eastbound)						
	U-Turns	Right to 16th St	Thru to Treat Ave	Thru to Harrison St	Left to 16th St	U-Turns	Right to Harrison St	Thru to 16th St	Left to Treat Ave	Left to Harrison St	U-Turns	Right to 16th St	Thru to Harrison St	Left to 16th St	Left to Treat Ave	U-Turns	Right to Harrison St	Right to 16th St	Thru to Harrison St	Left to 16th St	U-Turns	Right to Treat Ave	Right to Harrison St	Thru to 16th St	Left to Harrison St	Interval Totals	Hourly Totals
4:00 PM	0	3	5	25	12	0	5	56	1	2	0	8	16	3	0	0	0	0	0	0	0	0	0	28	3	167	
4:05 PM	0	6	9	21	7	0	7	41	1	1	0	5	27	3	0	0	0	0	0	0	0	0	2	43	2	175	
4:10 PM	0	5	12	26	15	0	6	43	1	3	0	3	14	3	0	0	0	0	0	0	0	0	1	45	0	177	
4:15 PM	0	6	9	27	5	0	3	39	0	1	0	7	27	3	0	0	0	0	0	0	0	0	2	29	2	160	
4:20 PM	0	8	9	32	8	0	3	41	1	2	0	5	15	3	0	0	0	0	0	0	0	0	2	39	1	169	
4:25 PM	0	7	4	31	5	0	4	50	2	1	0	2	25	3	0	0	0	0	0	0	0	4	4	37	0	179	
4:30 PM	0	3	7	35	6	0	3	36	2	0	0	7	16	3	0	0	0	0	0	0	0	0	2	32	1	153	
4:35 PM	0	11	11	28	7	0	8	52	1	0	0	3	10	4	0	0	0	0	0	0	0	1	4	25	1	166	
4:40 PM	0	3	10	32	7	0	5	46	0	1	0	4	32	2	0	0	0	0	0	0	0	1	4	38	1	186	
4:45 PM	0	5	7	40	9	0	1	57	2	0	0	3	26	3	0	0	0	0	0	0	0	3	2	40	3	201	
4:50 PM	0	6	8	35	8	0	8	44	3	4	0	1	21	1	0	0	0	0	0	0	0	1	1	40	1	182	
4:55 PM	0	9	4	36	13	0	5	52	0	3	0	2	12	5	0	0	0	0	0	0	0	1	5	17	0	164	2079
5:00 PM	0	7	4	20	7	0	3	55	0	2	0	4	15	3	0	0	0	0	0	0	0	1	0	20	1	142	2054
5:05 PM	0	7	10	25	10	0	5	46	2	1	0	1	18	4	0	0	0	0	0	0	0	0	3	36	0	168	2047
5:10 PM	0	5	13	40	7	0	4	57	3	2	0	6	29	2	0	0	0	0	0	0	0	0	1	29	3	201	2071
5:15 PM	0	4	9	51	4	0	6	55	2	0	0	6	24	4	0	0	0	0	0	0	0	0	2	34	1	202	2113
5:20 PM	0	7	13	25	2	0	4	67	1	3	0	5	31	3	0	0	0	0	0	0	0	2	1	27	3	194	2138
5:25 PM	0	4	8	31	7	0	4	59	1	0	0	5	20	5	0	0	0	0	0	0	0	0	2	32	1	179	2138
5:30 PM	0	10	9	33	5	0	2	65	1	6	0	3	30	2	0	0	0	0	0	0	0	0	1	31	2	200	2185
5:35 PM	0	2	7	37	9	0	5	52	0	3	0	4	26	3	0	0	0	0	0	0	0	0	2	40	2	192	2211
5:40 PM	0	5	7	36	7	0	7	64	3	2	0	2	24	4	0	0	0	0	0	0	0	0	1	37	2	201	2226
5:45 PM	0	7	10	39	14	0	1	62	2	1	0	3	19	2	0	0	0	0	0	0	0	1	4	26	1	192	2217
5:50 PM	0	8	9	42	4	0	5	70	0	5	0	3	23	2	0	0	0	0	0	0	0	3	1	36	3	214	2249
5:55 PM	0	7	10	33	4	0	3	54	5	8	0	3	19	3	0	0	0	0	0	0	0	0	0	30	2	181	2266
Totals	0	145	204	780	182	0	107	1263	34	51	0	95	519	73	0	0	0	0	0	0	0	18	47	791	36		

APPENDIX E: ANALYSIS METHODOLOGY

TABLE D1: SIGNALIZED INTERSECTION LOS CRITERIA		
Level of Service	**Description**	**Average Control Delay Per Vehicle (Seconds)**
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0

Source: Highway Capacity Manual – Special Report 209 (Transportation Research Board, 2000).

TABLE D2: UNSIGNALIZED INTERSECTION LOS CRITERIA		
Level of Service	**Description**	**Average Control Delay Per Vehicle (Seconds)**
A	Little or no traffic delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: Highway Capacity Manual – Special Report 209 (Transportation Research Board, 2000).

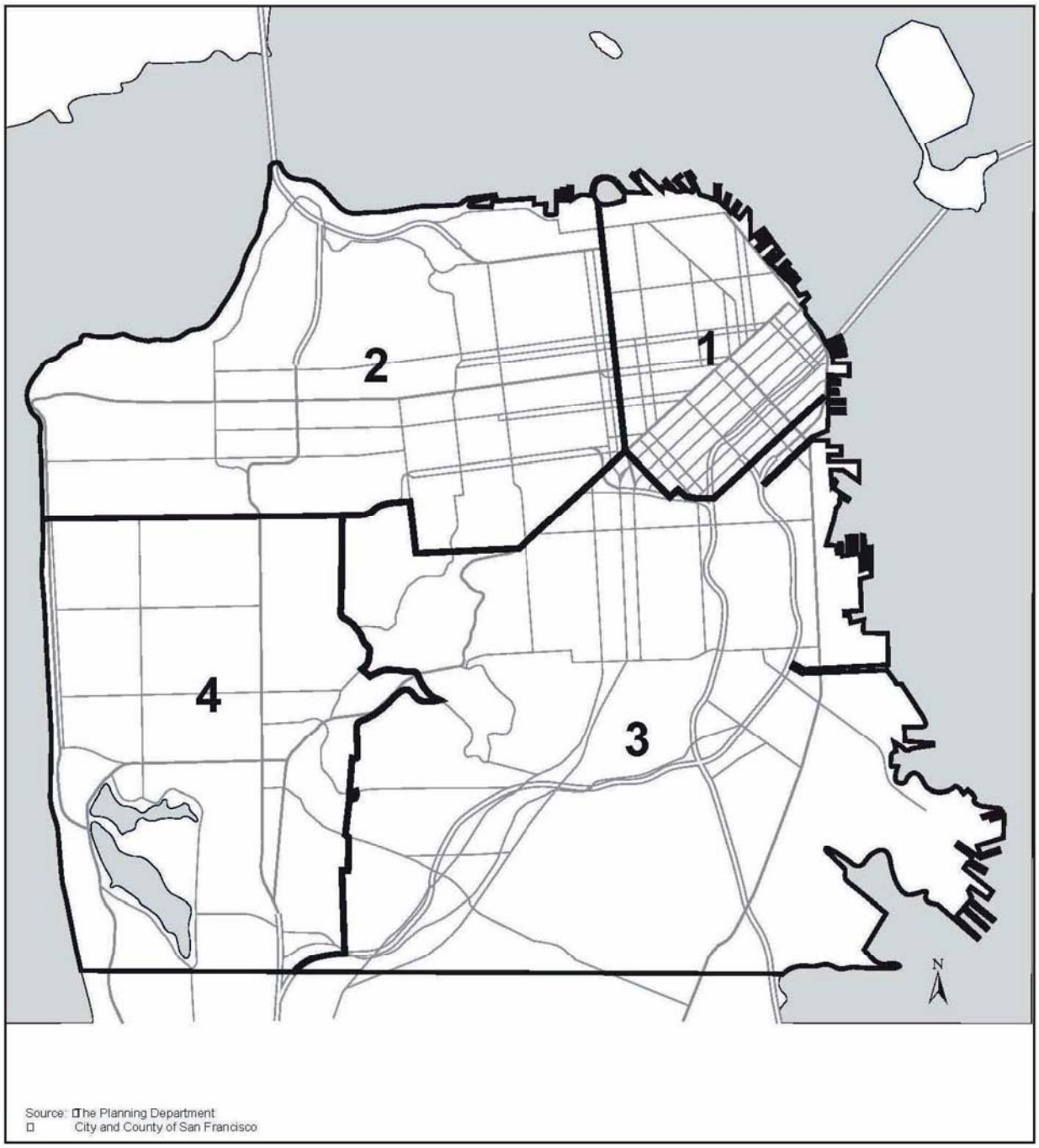


Figure A: Map of San Francisco Showing Superdistrict Boundaries

APPENDIX F: TRAVEL DEMAND CALCULATIONS

APPENDIX F
TRAVEL DEMAND ANALYSIS

1 Transportation Survey Data

1.1 UCSF Employee Commute Survey

1.2 UCSF Residents Survey

2 Trip Generation Calculations

2.1 Parnassus Heights – Existing

2.2 Parnassus Heights – 2035

2.3 Mission Bay – Existing

2.4 Mission Bay – 2015

2.5 Mission Bay – 2040

2.6 Mount Zion – Existing

2.7 Mount Zion – 2035

2.8 Mission Center – Existing

2.9 Mission Center – 2035

3 Vehicle Trip Distribution: AM and PM Peak Hour

3.1 Parnassus Heights – Existing to 2035 Growth

3.2 Mission Bay – Existing to 2015 Growth

3.3 Mission Bay – Existing to 2040 Growth

3.4 Mount Zion – Existing to 2035 Growth

3.5 Mission Center – Existing to 2035 Growth

4 Public Transit Trip Distribution: AM and PM Peak Hour

4.1 Parnassus Heights – Existing to 2035 Growth

4.2 Mission Bay – Existing to 2015 Growth

4.3 Mission Bay – Existing to 2040 Growth

4.4 Mount Zion – Existing to 2035 Growth

4.5 Mission Center – Existing to 2035 Growth

5 Parking Demand Calculations

5.1 Parnassus Heights

5.2 Mission Bay

5.3 Mount Zion

5.4 Mission Center

1. TRANSPORTATION SURVEY DATA

1.1 UCSF EMPLOYEE COMMUTE SURVEY

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
Which category best represents your position at UCSF?								
Faculty/Physician	201	10.6%	64	11.1%	36	9.3%		0.0%
Fellow	19	1.0%	14	2.4%	3	0.8%	2	1.0%
Nurse/Nurse Practitioner	345	18.3%	9	1.6%	72	18.6%		0.0%
Postdoc	57	3.0%	92	16.0%	6	1.6%	1	0.5%
Resident	48	2.5%		0.0%	5	1.3%		0.0%
Staff	1,088	57.6%	330	57.3%	255	65.9%	188	98.4%
Student	98	5.2%	63	10.9%	2	0.5%		0.0%
Other	32	1.7%	4	0.7%	8	2.1%		0.0%
Total	1,888	100.0%	576	100.0%	387	100.0%	191	100.0%
Faculty/Physician	201	10.6%	64	11.1%	36	9.3%	0	0.0%
Fellow/Resident	67	3.5%	14	2.4%	8	2.1%	2	1.0%
Nurse/Nurse Practitioner	345	18.3%	9	1.6%	72	18.6%	0	0.0%
Postdoc/Student	155	8.2%	155	26.9%	8	2.1%	1	0.5%
Other Staff	1,120	59.3%	334	58.0%	263	68.0%	188	98.4%
Total	1,888	100.0%	576	100.0%	387	100.0%	191	100.0%
From where do you typically commute?								
San Francisco	982	53.0%	347	61.7%	196	52.0%	85	45.0%
Marin	156	8.4%	23	4.1%	24	6.4%	6	3.2%
Napa	3	0.2%		0.0%	2	0.5%	1	0.5%
Sonoma	37	2.0%	6	1.1%	5	1.3%		0.0%
Alameda	178	9.6%	59	10.5%	55	14.6%	30	15.9%
West Contra Costa	30	1.6%	11	2.0%	6	1.6%	7	3.7%
East Contra Costa	102	5.5%	16	2.8%	19	5.0%	17	9.0%
San Mateo	283	15.3%	83	14.8%	59	15.6%	33	17.5%
Santa Clara	26	1.4%	10	1.8%	4	1.1%	3	1.6%
Solano	32	1.7%	4	0.7%	6	1.6%	3	1.6%
East Bay	4	0.2%	1	0.2%	1	0.3%	1	0.5%
Outside Bay Area	19	1.0%	2	0.4%		0.0%	3	1.6%
Total	1,852	100.0%	562	100.0%	377	100.0%	189	100.0%
San Francisco	982	53.0%	347	61.7%	196	52.0%	85	45.0%
East Bay	346	18.7%	91	16.2%	87	23.1%	58	30.7%
North Bay	196	10.6%	29	5.2%	31	8.2%	7	3.7%
South Bay	309	16.7%	93	16.5%	63	16.7%	36	19.0%
Outside Bay Area	19	1.0%	2	0.4%	0	0.0%	3	1.6%
Total	1,852	100.0%	562	100.0%	377	100.0%	189	100.0%
To which campus location do you typically commute?								
Parnassus	1,891	100.0%		0.0%		0.0%		0.0%
Mission Bay		0.0%	576	100.0%		0.0%		0.0%
Mt. Zion		0.0%		0.0%	387	100.0%		0.0%
Laurel Heights		0.0%		0.0%		0.0%		0.0%
Mission Center Building		0.0%		0.0%		0.0%	192	100.0%
San Francisco General Hospital		0.0%		0.0%		0.0%		0.0%
China Basin		0.0%		0.0%		0.0%		0.0%
654 Minnesota		0.0%		0.0%		0.0%		0.0%
2300 Harrison		0.0%		0.0%		0.0%		0.0%
Buchanan Dental Clinic - 100 Buchanan		0.0%		0.0%		0.0%		0.0%
50 Beale Street		0.0%		0.0%		0.0%		0.0%
220 Montgomery Street		0.0%		0.0%		0.0%		0.0%
VA Hospital		0.0%		0.0%		0.0%		0.0%
3330-3360 Geary		0.0%		0.0%		0.0%		0.0%
Oyster Point - 612 Forbes Blvd.		0.0%		0.0%		0.0%		0.0%
Executive Park		0.0%		0.0%		0.0%		0.0%
Fresno		0.0%		0.0%		0.0%		0.0%
1930 Market St - AHC		0.0%		0.0%		0.0%		0.0%
270 Masonic - BSRI		0.0%		0.0%		0.0%		0.0%
2727 Mariposa		0.0%		0.0%		0.0%		0.0%
45 Castro St		0.0%		0.0%		0.0%		0.0%
982 Mission Street		0.0%		0.0%		0.0%		0.0%
Downtown Oakland		0.0%		0.0%		0.0%		0.0%
Lakeshore - 1569 Sloat		0.0%		0.0%		0.0%		0.0%
Multiple sites		0.0%		0.0%		0.0%		0.0%
Richmond (CC County)		0.0%		0.0%		0.0%		0.0%
Other Locations		0.0%		0.0%		0.0%		0.0%
Total	1,891	100.0%	576	100.0%	387	100.0%	192	100.0%

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
How many days per week do you typically travel to the above campus location?								
Less than 1	32	1.7%	12	2.1%	8	2.1%	5	2.6%
1	28	1.5%	7	1.2%	8	2.1%	4	2.1%
2	76	4.0%	11	1.9%	11	2.9%	3	1.6%
3	324	17.3%	28	4.9%	39	10.2%	3	1.6%
4	225	12.0%	41	7.1%	44	11.5%	23	12.0%
5	1,036	55.2%	350	60.9%	254	66.5%	145	75.9%
More Than 5	156	8.3%	126	21.9%	18	4.7%	8	4.2%
Total	1,877	100.0%	575	100.0%	382	100.0%	191	100.0%
Average	4.4		4.9		4.5		4.6	
How many days in a typical week do you telecommute or work from home?								
None	1,539	87.0%	464	83.8%	326	89.6%	150	80.6%
One	118	6.7%	58	10.5%	16	4.4%	28	15.1%
Two	42	2.4%	16	2.9%	4	1.1%	1	0.5%
Three	26	1.5%	4	0.7%	7	1.9%		0.0%
Four	9	0.5%	1	0.2%	1	0.3%		0.0%
Five	35	2.0%	11	2.0%	10	2.7%	7	3.8%
Total	1,769	100.0%	554	100.0%	364	100.0%	186	100.0%
Average	0.28		0.29		0.27		0.35	
What mode(s) of travel do you typically use to get to work?								
Public Transit	427	23.3%	94	16.8%	103	27.4%	53	28.6%
Public Transit + Shuttle	39	2.1%	36	6.5%	12	3.2%	9	4.9%
UCSF Shuttle	180	9.8%	120	21.5%	30	8.0%	15	8.1%
Walk	186	10.2%	49	8.8%	29	7.7%	7	3.8%
Bicycle	81	4.4%	58	10.4%	18	4.8%	12	6.5%
Motorcycle/ Scooter	25	1.4%	5	0.9%	4	1.1%	2	1.1%
Carpool/ Vanpool	170	9.3%	20	3.6%	22	5.9%	11	5.9%
Drive Alone	645	35.2%	154	27.6%	144	38.3%	73	39.5%
Drive Alone + Shuttle	22	1.2%	9	1.6%	4	1.1%	1	0.5%
Taxi/ Dropped off	54	3.0%	8	1.4%	10	2.7%	2	1.1%
Other	1	0.1%	5	0.9%	0	0.0%	0	0.0%
All Modes	1,830	100.0%	558	100.0%	376	100.0%	185	100.0%
What time do you typically arrive to UCSF for work or school?								
Before 7AM	417	22.2%	32	5.6%	58	15.5%	22	11.5%
7AM-->8AM	566	30.2%	112	19.5%	149	39.7%	64	33.5%
8AM-->9AM	486	25.9%	230	40.0%	124	33.1%	70	36.6%
9AM-->10AM	186	9.9%	143	24.9%	30	8.0%	31	16.2%
10AM-->11AM	48	2.6%	45	7.8%	5	1.3%	2	1.0%
11AM-->12PM	8	0.4%	4	0.7%	3	0.8%	1	0.5%
12PM-->1PM	10	0.5%		0.0%	2	0.5%		0.0%
1PM-->2PM	11	0.6%		0.0%	1	0.3%		0.0%
2PM-->3PM	21	1.1%	4	0.7%	2	0.5%		0.0%
3PM-->4PM	7	0.4%	1	0.2%		0.0%		0.0%
4PM-->5PM	4	0.2%		0.0%	1	0.3%		0.0%
5PM-->6PM	6	0.3%	1	0.2%		0.0%		0.0%
6PM-->7PM	93	5.0%	3	0.5%		0.0%		0.0%
7PM-->8PM	4	0.2%		0.0%		0.0%		0.0%
After 8PM	8	0.4%		0.0%		0.0%	1	0.5%
Total	1,875	100.0%	575	100.0%	375	100.0%	191	100.0%
Peak hour	7AM-->8AM	30.2%	8AM-->9AM	40.0%	7AM-->8AM	39.7%	8AM-->9AM	36.6%

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
What time do you typically leave UCSF at the end of your day?								
Before 7AM	4	0.2%		0.0%	1	0.3%	1	0.5%
7AM-->8AM	97	5.2%	2	0.4%	4	1.0%		0.0%
8AM-->9AM	15	0.8%	2	0.4%	2	0.5%		0.0%
9AM-->10AM		0.0%		0.0%		0.0%		0.0%
10AM-->11AM	2	0.1%		0.0%		0.0%		0.0%
11AM-->12PM	2	0.1%		0.0%	1	0.3%		0.0%
12PM-->1PM	7	0.4%	2	0.4%	2	0.5%		0.0%
1PM-->2PM	9	0.5%	3	0.5%	1	0.3%	1	0.5%
2PM-->3PM	27	1.4%	7	1.2%	7	1.8%	4	2.1%
3PM-->4PM	129	6.9%	23	4.0%	38	9.9%	17	8.9%
4PM-->5PM	400	21.3%	81	14.2%	95	24.7%	60	31.6%
5PM-->6PM	579	30.8%	204	35.8%	138	35.9%	68	35.8%
6PM-->7PM	249	13.3%	141	24.7%	58	15.1%	32	16.8%
7PM-->8PM	255	13.6%	67	11.8%	25	6.5%	6	3.2%
After 8PM	103	5.5%	38	6.7%	12	3.1%	1	0.5%
Total	1,878	100.0%	570	100.0%	384	100.0%	190	100.0%
Peak hour	5PM-->6PM	30.8%	5PM-->6PM	35.8%	5PM-->6PM	35.9%	5PM-->6PM	35.8%
Typical number of hours staying for work/school at UCSF								
1	5	0.3%		0.0%	2	0.6%		0.0%
2	3	0.2%	1	0.2%		0.0%		0.0%
3	3	0.2%		0.0%		0.0%		0.0%
4	3	0.2%	1	0.2%		0.0%		0.0%
5	13	0.7%	2	0.4%		0.0%		0.0%
6	11	0.6%	2	0.4%	5	1.6%	1	0.5%
7	23	1.2%	5	0.9%	7	2.2%	1	0.5%
8	63	3.4%	21	3.7%	12	3.7%	1	0.5%
9	206	11.0%	105	18.4%	50	15.5%	40	21.1%
10	663	35.5%	212	37.2%	152	47.2%	101	53.2%
11	361	19.3%	132	23.2%	94	29.2%	36	18.9%
12	131	7.0%	50	8.8%		0.0%	9	4.7%
13	75	4.0%	22	3.9%		0.0%	1	0.5%
14	261	14.0%	8	1.4%		0.0%		0.0%
15	18	1.0%	4	0.7%		0.0%		0.0%
16	19	1.0%		0.0%		0.0%		0.0%
17	1	0.1%		0.0%		0.0%		0.0%
18		0.0%		0.0%		0.0%		0.0%
19	1	0.1%		0.0%		0.0%		0.0%
20		0.0%		0.0%		0.0%		0.0%
21	1	0.1%		0.0%		0.0%		0.0%
22	1	0.1%	1	0.2%		0.0%		0.0%
23	2	0.1%	2	0.4%		0.0%		0.0%
24	4	0.2%	2	0.4%		0.0%		0.0%
Total	1,868	100.0%	570	100.0%	322	100.0%	190	100.0%
Average	10.9		10.4		9.9		10.0	

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
If you commute by public transit to UCSF, which systems do you use?								
Muni	529	59.6%	128	43.1%	108	54.8%	20	17.4%
AC Transit		0.0%		0.0%		0.0%		0.0%
Amtrak		0.0%		0.0%		0.0%		0.0%
BART	19	2.1%	50	16.8%	3	1.5%	59	51.3%
Caltrain	10	1.1%	25	8.4%	5	2.5%	1	0.9%
Dumbarton Express		0.0%		0.0%		0.0%		0.0%
Ferry	2	0.2%	2	0.7%		0.0%		0.0%
GGT		0.0%	5	1.7%	2	1.0%	1	0.9%
SamTrans	1	0.1%		0.0%		0.0%		0.0%
WestCAT		0.0%		0.0%		0.0%		0.0%
Muni+AC Transit	8	0.9%	1	0.3%	5	2.5%	1	0.9%
Muni+Amtrak	2	0.2%		0.0%		0.0%		0.0%
Muni+BART	240	27.1%	46	15.5%	44	22.3%	19	16.5%
Muni+Caltrain	7	0.8%		0.0%		0.0%	1	0.9%
Muni+Ferry	10	1.1%	2	0.7%	6	3.0%		0.0%
Muni+GGT	3	0.3%	1	0.3%	2	1.0%		0.0%
Muni+SamTrans	2	0.2%		0.0%	1	0.5%		0.0%
Muni+WestCAT		0.0%	1	0.3%		0.0%		0.0%
AC Transit+Ferry		0.0%		0.0%		0.0%		0.0%
BART+AC Transit	1	0.1%	4	1.3%	2	1.0%	2	1.7%
BART+Amtrak		0.0%		0.0%		0.0%		0.0%
BART+Caltrain		0.0%	2	0.7%		0.0%	2	1.7%
BART+Ferry		0.0%		0.0%		0.0%		0.0%
BART+GGT		0.0%		0.0%		0.0%	1	0.9%
BART+Other	2	0.2%		0.0%		0.0%		0.0%
BART+SamTrans		0.0%	1	0.3%	1	0.5%	1	0.9%
BART+WestCAT		0.0%	1	0.3%		0.0%	1	0.9%
Caltrain+SamTrans		0.0%	1	0.3%		0.0%		0.0%
GGT+Ferry	1	0.1%		0.0%		0.0%	1	0.9%
Muni+BART+AC Transit	26	2.9%	12	4.0%	14	7.1%	3	2.6%
Muni+BART+Amtrak	1	0.1%		0.0%		0.0%		0.0%
Muni+BART+Caltrain	5	0.6%	1	0.3%	2	1.0%		0.0%
Muni+BART+Ferry	1	0.1%		0.0%	1	0.5%	1	0.9%
Muni+BART+GGT		0.0%		0.0%		0.0%		0.0%
Muni+BART+Other		0.0%		0.0%		0.0%		0.0%
Muni+BART+SamTrans	13	1.5%	3	1.0%		0.0%		0.0%
Muni+BART+WestCAT		0.0%		0.0%	1	0.5%		0.0%
Muni+GGT+Ferry		0.0%	1	0.3%		0.0%		0.0%
Muni+BART+AC Transit+Caltrain		0.0%	2	0.7%		0.0%		0.0%
Muni+BART+AC Transit+Ferry	1	0.1%		0.0%		0.0%	1	0.9%
Muni+BART+AC Transit+Other		0.0%		0.0%		0.0%		0.0%
Muni+BART+Amtrak+Other		0.0%	1	0.3%		0.0%		0.0%
Muni+BART+Caltrain+SamTrans	2	0.2%		0.0%		0.0%		0.0%
Muni+BART+Caltrain+VTA	1	0.1%		0.0%		0.0%		0.0%
Muni+BART+GGT+Ferry		0.0%	3	1.0%		0.0%		0.0%
Muni+BART+AC Transit+Caltrain+GGT		0.0%	1	0.3%		0.0%		0.0%
Muni+BART+Caltrain+Amtrak+SamTrans		0.0%		0.0%		0.0%		0.0%
BART+AC Transit+Caltrain		0.0%	1	0.3%		0.0%		0.0%
BART+AC Transit+Ferry		0.0%	1	0.3%		0.0%		0.0%
BART+Caltrain+SamTrans		0.0%	1	0.3%		0.0%		0.0%
Other		0.0%		0.0%		0.0%		0.0%
Total	887	100.0%	297	100.0%	197	100.0%	115	100.0%
Number of public transit systems used								
Single transit system (no transfers)	561	63.2%	210	70.7%	118	59.9%	81	70.4%
Two transit systems (one transfer)	276	31.1%	60	20.2%	61	31.0%	29	25.2%
Three transit systems (two transfers)	46	5.2%	20	6.7%	18	9.1%	4	3.5%
Four transit systems (three transfers)	4	0.5%	6	2.0%	0	0.0%	1	0.9%
Five transit systems (four transfers)	0	0.0%	1	0.3%	0	0.0%	0	0.0%
Total	887	100.0%	297	100.0%	197	100.0%	115	100.0%
Average	1.4		1.4		1.5		1.3	

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
If you travel by carpool or vanpool, how many total people travel with you to UCSF? (not including yourself)								
1	96	33.2%	23	46.9%	13	34.2%	8	47.1%
2	86	29.8%	15	30.6%	12	31.6%	6	35.3%
3	23	8.0%	4	8.2%	6	15.8%		0.0%
4	9	3.1%	1	2.0%	4	10.5%	2	11.8%
5	10	3.5%		0.0%	1	2.6%		0.0%
6	12	4.2%		0.0%	2	5.3%	1	5.9%
7	18	6.2%		0.0%		0.0%		0.0%
8	23	8.0%	4	8.2%		0.0%		0.0%
9	8	2.8%	1	2.0%		0.0%		0.0%
10	4	1.4%	1	2.0%		0.0%		0.0%
Total	289	100.0%	49	100.0%	38	100.0%	17	100.0%
Average carpool	1.7		1.6		2.0		1.8	
Average vanpool	7.3		8.5		5.7		6.0	
Average all vehicles combined	3.2		2.4		2.3		2.0	
If and when you drive to UCSF, which type of vehicle you typically drive?								
Gasoline or Diesel	1,135	87.1%	317	89.0%	235	87.0%	119	92.2%
Hybrid	148	11.4%	35	9.8%	30	11.1%	9	7.0%
All electric	16	1.2%	2	0.6%	1	0.4%		0.0%
Compressed Natural Gas	3	0.2%		0.0%	2	0.7%	1	0.8%
Biodiesel	1	0.1%	2	0.6%	2	0.7%		0.0%
Low emission		0.0%		0.0%		0.0%		0.0%
Other		0.0%		0.0%		0.0%		0.0%
Total	1,303	100.0%	356	100.0%	270	100.0%	129	100.0%
If and when you drive to UCSF, where do you usually park?								
A non-UCSF parking facility	84	6.5%	8	2.3%	65	24.0%	3	2.3%
On the street	328	25.5%	115	32.5%	91	33.6%	41	31.5%
UCSF parking facility	585	45.4%	143	40.4%	59	21.8%	63	48.5%
Other	10	0.8%	1	0.3%	1	0.4%		0.0%
Reported non-UCSF facility, but not driving	12	0.9%	1	0.3%	10	3.7%		0.0%
Reported on the street, but not driving	134	10.4%	59	16.7%	34	12.5%	13	10.0%
Reported UCSF parking, but not driving	129	10.0%	27	7.6%	10	3.7%	9	6.9%
Reported other, but not driving	6	0.5%		0.0%	1	0.4%	1	0.8%
Total	1,288	100.0%	354	100.0%	271	100.0%	130	100.0%
UCSF parking facility	714	55.4%	170	48.0%	69	25.5%	72	55.4%
A non-UCSF parking facility	112	8.7%	10	2.8%	77	28.4%	4	3.1%
On the street	462	35.9%	174	49.2%	125	46.1%	54	41.5%
Total	1,288	100.0%	354	100.0%	271	100.0%	130	100.0%
If you checked "On the street", how many blocks away from your work site do you typically park?								
One	10	2.2%	10	5.7%	8	6.4%	7	13.0%
Two	34	7.4%	24	13.8%	9	7.2%	16	29.6%
Three	63	13.8%	31	17.8%	35	28.0%	17	31.5%
Four	48	10.5%	39	22.4%	21	16.8%	9	16.7%
5 or more	303	66.2%	70	40.2%	52	41.6%	5	9.3%
Total	458	100.0%	174	100.0%	125	100.0%	54	100.0%
Average	4.6		4.0		4.0		2.8	

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
If traveling between UCSF sites throughout the day, how many roundtrips do you typically make per week?								
None	929	52.1%	208	37.4%	158	42.4%	46	25.0%
1	418	23.4%	161	29.0%	101	27.1%	51	27.7%
2	176	9.9%	59	10.6%	38	10.2%	37	20.1%
3	81	4.5%	41	7.4%	17	4.6%	17	9.2%
4	52	2.9%	19	3.4%	14	3.8%	7	3.8%
5	59	3.3%	32	5.8%	18	4.8%	11	6.0%
6	16	0.9%	9	1.6%	7	1.9%	5	2.7%
7	6	0.3%	3	0.5%	7	1.9%	2	1.1%
8	7	0.4%	5	0.9%	1	0.3%	2	1.1%
9		0.0%		0.0%		0.0%		0.0%
10	25	1.4%	14	2.5%	9	2.4%	5	2.7%
11	1	0.1%	1	0.2%		0.0%		0.0%
12	6	0.3%		0.0%	1	0.3%	1	0.5%
13		0.0%		0.0%		0.0%		0.0%
14	1	0.1%	2	0.4%	1	0.3%		0.0%
15	2	0.1%	2	0.4%		0.0%		0.0%
16		0.0%		0.0%		0.0%		0.0%
17		0.0%		0.0%		0.0%		0.0%
18		0.0%		0.0%		0.0%		0.0%
19		0.0%		0.0%		0.0%		0.0%
20	2	0.1%		0.0%	1	0.3%		0.0%
More than 20	2	0.1%		0.0%		0.0%		0.0%
Total	1,783	100.0%	556	100.0%	373	100.0%	184	100.0%
Average	1.2		1.7		1.6		2.1	

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
When traveling between UCSF sites throughout the day, what mode of travel do you typically use?								
BART		0.0%		0.0%		0.0%		0.0%
Bicycle	8	0.6%	5	1.1%	3	1.0%		0.0%
Car Share	1	0.1%		0.0%		0.0%	1	0.6%
City Bus	8	0.6%	1	0.2%	1	0.3%	1	0.6%
Other Shuttle		0.0%		0.0%		0.0%		0.0%
Muni Rail	1	0.1%		0.0%		0.0%		0.0%
UCSF Shuttle	1,116	88.9%	417	88.9%	267	88.1%	136	80.0%
UCSF Vehicle	22	1.8%	5	1.1%	3	1.0%	1	0.6%
Motorcycle	2	0.2%	1	0.2%	1	0.3%	2	1.2%
Personal Car	90	7.2%	33	7.0%	25	8.3%	25	14.7%
Taxi		0.0%		0.0%		0.0%		0.0%
Walk	4	0.3%	4	0.9%	1	0.3%		0.0%
BART/Bicycle		0.0%		0.0%		0.0%		0.0%
BART/City Bus		0.0%		0.0%		0.0%		0.0%
BART/Personal Car		0.0%		0.0%		0.0%		0.0%
BART/UCSF Shuttle		0.0%		0.0%		0.0%		0.0%
BART/UCSF Shuttle/Personal Car		0.0%		0.0%		0.0%		0.0%
BART/Walk		0.0%		0.0%		0.0%		0.0%
Bicycle/Car Share		0.0%		0.0%		0.0%		0.0%
Bicycle/City Bus		0.0%		0.0%		0.0%		0.0%
Bicycle/UCSF Shuttle	1	0.1%		0.0%		0.0%	2	1.2%
Car Share/City Bus		0.0%		0.0%		0.0%		0.0%
City Bus/Muni Rail		0.0%		0.0%		0.0%		0.0%
City Bus/Personal Car		0.0%		0.0%		0.0%		0.0%
City Bus/Taxi		0.0%		0.0%		0.0%		0.0%
City Bus/UCSF Shuttle		0.0%		0.0%		0.0%	1	0.6%
Other Shuttle/Muni		0.0%		0.0%		0.0%		0.0%
Other Shuttle/Walk		0.0%		0.0%		0.0%		0.0%
Muni Rail/BART		0.0%		0.0%		0.0%		0.0%
Muni Rail/City Bus		0.0%		0.0%		0.0%		0.0%
Muni Rail/UCSF Shuttle	1	0.1%		0.0%		0.0%		0.0%
UCSF Shuttle/City Bus/BART		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/City Bus/Personal Car		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/City Bus/Taxi		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/Motorcycle		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/Muni Rail/BART	1	0.1%		0.0%		0.0%		0.0%
UCSF Shuttle/Personal Car	1	0.1%	1	0.2%	2	0.7%		0.0%
UCSF Shuttle/UCSF Vehicle		0.0%	1	0.2%		0.0%		0.0%
UCSF Shuttle/UCSF Vehicle/Personal Car		0.0%		0.0%		0.0%	1	0.6%
UCSF Shuttle/Walk		0.0%	1	0.2%		0.0%		0.0%
Other Modes		0.0%		0.0%		0.0%		0.0%
Total	1,256	100.0%	469	100.0%	303	100.0%	170	100.0%
Public Transit	9	0.7%	1	0.2%	1	0.3%	1	0.6%
UCSF Shuttle	1,116	88.9%	418	89.1%	267	88.1%	136	80.0%
Personal Car	90	7.2%	33	7.0%	25	8.3%	25	14.7%
Bicycle	8	0.6%	5	1.1%	3	1.0%	0	0.0%
Motorcycle	2	0.2%	1	0.2%	1	0.3%	2	1.2%
UCSF Vehicle	22	1.8%	5	1.1%	3	1.0%	1	0.6%
Car Share/Taxi/Other Shuttle	1	0.1%	0	0.0%	0	0.0%	1	0.6%
Walk	4	0.3%	4	0.9%	1	0.3%	0	0.0%
Multiple modes	4	0.3%	2	0.4%	2	0.7%	4	2.4%
Total	1,256	100.0%	469	100.0%	303	100.0%	170	100.0%

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
How may additional weekly roundtrips do you typically make off-campus to non-UCSF locations (for example, lunch or oth								
None	1,190	65.5%	276	49.3%	214	57.8%	81	46.8%
1	263	14.5%	132	23.6%	49	13.2%	35	20.2%
2	154	8.5%	71	12.7%	37	10.0%	16	9.2%
3	83	4.6%	32	5.7%	24	6.5%	24	13.9%
4	42	2.3%	12	2.1%	12	3.2%	10	5.8%
5	51	2.8%	20	3.6%	29	7.8%	1	0.6%
6	7	0.4%	3	0.5%	3	0.8%	2	1.2%
7	3	0.2%	4	0.7%		0.0%	1	0.6%
8	8	0.4%		0.0%		0.0%	1	0.6%
9		0.0%	1	0.2%		0.0%		0.0%
10	13	0.7%	3	0.5%		0.0%	1	0.6%
11		0.0%		0.0%		0.0%		0.0%
12	1	0.1%		0.0%		0.0%		0.0%
13		0.0%		0.0%		0.0%		0.0%
14		0.0%	1	0.2%		0.0%		0.0%
15		0.0%	3	0.5%	1	0.3%	1	0.6%
16		0.0%		0.0%		0.0%		0.0%
17		0.0%		0.0%		0.0%		0.0%
18		0.0%		0.0%		0.0%		0.0%
19		0.0%		0.0%		0.0%		0.0%
20		0.0%		0.0%		0.0%		0.0%
More than 20	2	0.1%	2	0.4%	1	0.3%		0.0%
Total	1,817	100.0%	560	100.0%	370	100.0%	173	100.0%
Average	0.9		1.3		1.2		1.4	

2013 UCSF Transportation Commute Survey

	PARNASSUS		MISSION BAY		MOUNT ZION		MISSION CENTER	
When traveling offcampus to non-UCSF locations throughout the day, what mode of travel do you typically use?								
BART		0.0%		0.0%		0.0%	2	1.4%
Bicycle	27	2.9%	34	8.9%	6	2.6%	4	2.8%
Car Share	2	0.2%	2	0.5%	1	0.4%	4	2.8%
City Bus	126	13.4%	32	8.4%	27	11.6%	8	5.6%
Other Shuttle	1	0.1%		0.0%		0.0%		0.0%
Muni Rail	13	1.4%	1	0.3%		0.0%		0.0%
UCSF Shuttle	133	14.1%	66	17.2%	14	6.0%	8	5.6%
UCSF Vehicle	12	1.3%	3	0.8%		0.0%		0.0%
Motorcycle	2	0.2%	1	0.3%	1	0.4%	1	0.7%
Personal Car	223	23.7%	96	25.1%	59	25.3%	47	33.1%
Taxi	1	0.1%		0.0%		0.0%		0.0%
Walk	396	42.1%	143	37.3%	125	53.6%	66	46.5%
BART/Bicycle		0.0%		0.0%		0.0%		0.0%
BART/City Bus		0.0%		0.0%		0.0%		0.0%
BART/Personal Car		0.0%		0.0%		0.0%	1	0.7%
BART/UCSF Shuttle		0.0%		0.0%		0.0%		0.0%
BART/UCSF Shuttle/Personal Car		0.0%		0.0%		0.0%		0.0%
BART/Walk		0.0%		0.0%		0.0%		0.0%
Bicycle/Car Share		0.0%		0.0%		0.0%		0.0%
Bicycle/City Bus	1	0.1%		0.0%		0.0%		0.0%
Bicycle/UCSF Shuttle		0.0%		0.0%		0.0%		0.0%
Car Share/City Bus		0.0%		0.0%		0.0%		0.0%
City Bus/Muni Rail	1	0.1%	1	0.3%		0.0%		0.0%
City Bus/Personal Car		0.0%		0.0%		0.0%		0.0%
City Bus/Taxi		0.0%		0.0%		0.0%		0.0%
City Bus/UCSF Shuttle		0.0%	2	0.5%		0.0%	1	0.7%
Other Shuttle/Muni		0.0%	1	0.3%		0.0%		0.0%
Other Shuttle/Walk		0.0%	1	0.3%		0.0%		0.0%
Muni Rail/BART	1	0.1%		0.0%		0.0%		0.0%
Muni Rail/City Bus	1	0.1%		0.0%		0.0%		0.0%
Muni Rail/UCSF Shuttle		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/City Bus/BART		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/City Bus/Personal Car		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/City Bus/Taxi		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/Motorcycle		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/Muni Rail/BART		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/Personal Car		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/UCSF Vehicle		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/UCSF Vehicle/Personal Car		0.0%		0.0%		0.0%		0.0%
UCSF Shuttle/Walk		0.0%		0.0%		0.0%		0.0%
Other Modes		0.0%		0.0%		0.0%		0.0%
Total	940	100.0%	383	100.0%	233	100.0%	142	100.0%
Public Transit	142	15.1%	34	8.9%	27	11.6%	10	7.0%
UCSF Shuttle	133	14.1%	66	17.2%	14	6.0%	8	5.6%
Personal Car	223	23.7%	96	25.1%	59	25.3%	47	33.1%
Bicycle	27	2.9%	34	8.9%	6	2.6%	4	2.8%
Motorcycle	2	0.2%	1	0.3%	1	0.4%	1	0.7%
UCSF Vehicle	12	1.3%	3	0.8%	0	0.0%	0	0.0%
Car Share/Taxi/Other Shuttle	4	0.4%	3	0.8%	1	0.4%	4	2.8%
Walk	396	42.1%	143	37.3%	125	53.6%	66	46.5%
Multiple modes	1	0.1%	3	0.8%	0	0.0%	2	1.4%
Total	940	100.0%	383	100.0%	233	100.0%	142	100.0%

2013 UCSF Transportation Commute Survey

	PLACE OF ORIGIN						MODE OF TRAVEL											
	San Francisco	East Bay	North Bay	South Bay	Outside Bay Area	All origins	Public Transit	Transit + Shuttle	UCSF Shuttle	Walk	Bicycle	Mcycle/ Scooter	Carpool/ Vanpool	Drive Alone	D.A. + Shuttle	Taxi/ Drop off	Other	All Modes
PARNASSUS																		
Faculty/Physician	95	34	41	26	2	198	32	1	11	19	7	1	13	110	1	3	0	198
Fellow/Resident	53	2	1	7	0	63	8	0	10	18	4	2	0	20	0	1	0	63
Nurse/Nurse Practitioner	155	60	65	54	5	339	53	2	15	22	17	7	27	184	3	9	0	339
Postdoc/Student	127	7	1	12	0	147	28	3	44	33	22	1	1	11	1	3	0	147
Other Staff	548	238	76	209	12	1,083	306	33	100	94	31	14	129	320	17	38	1	1,083
All population types	978	341	184	308	19	1,830	427	39	180	186	81	25	170	645	22	54	1	1,830
Faculty/Physician	48.0%	17.2%	20.7%	13.1%	1.0%	100%	16%	1%	6%	10%	4%	1%	7%	56%	1%	2%	0%	100%
Fellow/Resident	84.1%	3.2%	1.6%	11.1%	0.0%	100%	13%	0%	16%	29%	6%	3%	0%	32%	0%	2%	0%	100%
Nurse/Nurse Practitioner	45.7%	17.7%	19.2%	15.9%	1.5%	100%	16%	1%	4%	6%	5%	2%	8%	54%	1%	3%	0%	100%
Postdoc/Student	86.4%	4.8%	0.7%	8.2%	0.0%	100%	19%	2%	30%	22%	15%	1%	1%	7%	1%	2%	0%	100%
Other Staff	50.6%	22.0%	7.0%	19.3%	1.1%	100%	28%	3%	9%	9%	3%	1%	12%	30%	2%	4%	0%	100%
All population types	53.4%	18.6%	10.1%	16.8%	1.0%	100%	23%	2%	10%	10%	4%	1%	9%	35%	1%	3%	0%	100%
MISSION BAY																		
Faculty/Physician	39	7	7	8	0	61	4	3	11	2	8	1	2	28	2	0	0	61
Fellow/Resident	11	1	0	2	0	14	3	0	2	1	4	0	0	4	0	0	0	14
Nurse/Nurse Practitioner	7	0	1	1	0	9	1	0	0	3	1	0	0	4	0	0	0	9
Postdoc/Student	122	15	0	14	0	151	23	7	45	27	27	1	3	17	0	1	0	151
Other Staff	169	67	17	68	2	323	63	26	62	16	18	3	15	101	7	7	5	323
All population types	348	90	25	93	2	558	94	36	120	49	58	5	20	154	9	8	5	558
Faculty/Physician	63.9%	11.5%	11.5%	13.1%	0.0%	100%	7%	5%	18%	3%	13%	2%	3%	46%	3%	0%	0%	100%
Fellow/Resident	78.6%	7.1%	0.0%	14.3%	0.0%	100%	21%	0%	14%	7%	29%	0%	0%	29%	0%	0%	0%	100%
Nurse/Nurse Practitioner	77.8%	0.0%	11.1%	11.1%	0.0%	100%	11%	0%	0%	33%	11%	0%	0%	44%	0%	0%	0%	100%
Postdoc/Student	80.8%	9.9%	0.0%	9.3%	0.0%	100%	15%	5%	30%	18%	18%	1%	2%	11%	0%	1%	0%	100%
Other Staff	52.3%	20.7%	5.3%	21.1%	0.6%	100%	20%	8%	19%	5%	6%	1%	5%	31%	2%	2%	2%	100%
All population types	62.4%	16.1%	4.5%	16.7%	0.4%	100%	17%	6%	22%	9%	10%	1%	4%	28%	2%	1%	1%	100%

2013 UCSF Transportation Commute Survey

	PLACE OF ORIGIN						MODE OF TRAVEL											
	San Francisco	East Bay	North Bay	South Bay	Outside Bay Area	All origins	Public Transit	Transit + Shuttle	UCSF Shuttle	Walk	Bicycle	Mcycle/ Scooter	Carpool/ Vanpool	Drive Alone	D.A. + Shuttle	Taxi/ Drop off	Other	All Modes
MOUNT ZION																		
Faculty/Physician	23	1	5	6	0	35	2	0	1	3	2	0	0	26	1	0	0	35
Fellow/Resident	7	0	0	0	0	7	1	0	3	0	0	0	0	3	0	0	0	7
Nurse/Nurse Practitioner	23	20	15	14	0	72	17	4	3	2	3	0	4	37	0	2	0	72
Postdoc/Student	5	1	0	2	0	8	2	0	3	0	1	0	0	2	0	0	0	8
Other Staff	137	63	12	42	0	254	81	8	20	24	12	4	18	76	3	8	0	254
All population types	195	85	32	64	0	376	103	12	30	29	18	4	22	144	4	10	0	376
Faculty/Physician	65.7%	2.9%	14.3%	17.1%	0.0%	100%	6%	0%	3%	9%	6%	0%	0%	74%	3%	0%	0%	100%
Fellow/Resident	100.0%	0.0%	0.0%	0.0%	0.0%	100%	14%	0%	43%	0%	0%	0%	0%	43%	0%	0%	0%	100%
Nurse/Nurse Practitioner	31.9%	27.8%	20.8%	19.4%	0.0%	100%	24%	6%	4%	3%	4%	0%	6%	51%	0%	3%	0%	100%
Postdoc/Student	62.5%	12.5%	0.0%	25.0%	0.0%	100%	25%	0%	38%	0%	13%	0%	0%	25%	0%	0%	0%	100%
Other Staff	53.9%	24.8%	4.7%	16.5%	0.0%	100%	32%	3%	8%	9%	5%	2%	7%	30%	1%	3%	0%	100%
All population types	51.9%	22.6%	8.5%	17.0%	0.0%	100%	27%	3%	8%	8%	5%	1%	6%	38%	1%	3%	0%	100%
MISSION CENTER																		
Faculty/Physician	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellow/Resident	1	1	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2
Nurse/Nurse Practitioner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdoc/Student	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
Other Staff	82	56	6	35	3	182	53	9	15	7	11	2	11	71	1	2	0	182
All population types	84	57	6	35	3	185	53	9	15	7	12	2	11	73	1	2	0	185
Faculty/Physician	0.0%	0.0%	0.0%	0.0%	0.0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fellow/Resident	50.0%	50.0%	0.0%	0.0%	0.0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Nurse/Nurse Practitioner	0.0%	0.0%	0.0%	0.0%	0.0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Postdoc/Student	100.0%	0.0%	0.0%	0.0%	0.0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%
Other Staff	45.1%	30.8%	3.3%	19.2%	1.6%	100%	29%	5%	8%	4%	6%	1%	6%	39%	1%	1%	0%	100%
All population types	45.4%	30.8%	3.2%	18.9%	1.6%	100%	29%	5%	8%	4%	6%	1%	6%	39%	1%	1%	0%	100%

2013 UCSF Transportation Commute Survey

	PLACE OF ORIGIN						MODE OF TRAVEL											
	San Francisco	East Bay	North Bay	South Bay	Outside Bay Area	All origins	Public Transit	Transit + Shuttle	UCSF Shuttle	Walk	Bicycle	Mcycle/ Scooter	Carpool/ Vanpool	Drive Alone	D.A. + Shuttle	Taxi/ Drop off	Other	All Modes
PARNASSUS																		
San Francisco							250	27	159	181	76	18	16	199	14	38	0	978
East Bay							147	3	5	3	1	3	72	101	2	3	1	341
North Bay							1	0	4	0	3	3	44	129	0	0	0	184
South Bay							26	9	12	2	1	1	33	206	6	12	0	308
Outside Bay Area							3	0	0	0	0	0	5	10	0	1	0	19
All Origins							427	39	180	186	81	25	170	645	22	54	1	1,830
East Bay							43%	1%	1%	1%	0%	1%	21%	30%	1%	1%	0%	100%
North Bay							1%	0%	2%	0%	2%	2%	24%	70%	0%	0%	0%	100%
South Bay							8%	3%	4%	1%	0%	0%	11%	67%	2%	4%	0%	100%
Outside Bay Area							16%	0%	0%	0%	0%	0%	26%	53%	0%	5%	0%	100%
All Origins							23%	2%	10%	10%	4%	1%	9%	35%	1%	3%	0%	100%
MISSION BAY																		
San Francisco							30	20	110	46	52	3	9	63	4	7	4	348
East Bay							39	13	5	2	3	1	5	20	1	0	1	90
North Bay							5	0	1	0	2	0	2	14	1	0	0	25
South Bay							19	2	4	1	1	1	4	57	3	1	0	93
Outside Bay Area							1	1	0	0	0	0	0	0	0	0	0	2
All Origins							94	36	120	49	58	5	20	154	9	8	5	558
San Francisco							9%	6%	32%	13%	15%	1%	3%	18%	1%	2%	1%	100%
East Bay							43%	14%	6%	2%	3%	1%	6%	22%	1%	0%	1%	100%
North Bay							20%	0%	4%	0%	8%	0%	8%	56%	4%	0%	0%	100%
South Bay							20%	2%	4%	1%	1%	1%	4%	61%	3%	1%	0%	100%
Outside Bay Area							50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
All Origins							17%	6%	22%	9%	10%	1%	4%	28%	2%	1%	1%	100%

2013 UCSF Transportation Commute Survey

	PLACE OF ORIGIN						MODE OF TRAVEL											
	San Francisco	East Bay	North Bay	South Bay	Outside Bay Area	All origins	Public Transit	Transit + Shuttle	UCSF Shuttle	Walk	Bicycle	Mcycle/ Scooter	Carpool/ Vanpool	Drive Alone	D.A. + Shuttle	Taxi/ Drop off	Other	All Modes
MOUNT ZION																		
San Francisco							47	8	26	27	16	2	1	57	4	7	0	195
East Bay							42	1	2	1	1	0	16	20	0	2	0	85
North Bay							3	0	0	0	1	2	4	21	0	1	0	32
South Bay							11	3	2	1	0	0	1	46	0	0	0	64
Outside Bay Area							0	0	0	0	0	0	0	0	0	0	0	0
All Origins							103	12	30	29	18	4	22	144	4	10	0	376
San Francisco							24%	4%	13%	14%	8%	1%	1%	29%	2%	4%	0%	100%
East Bay							49%	1%	2%	1%	1%	0%	19%	24%	0%	2%	0%	100%
North Bay							9%	0%	0%	0%	3%	6%	13%	66%	0%	3%	0%	100%
South Bay							17%	5%	3%	2%	0%	0%	2%	72%	0%	0%	0%	100%
Outside Bay Area							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
All Origins							27%	3%	8%	8%	5%	1%	6%	38%	1%	3%	0%	100%
MISSION CENTER																		
San Francisco							14	3	11	6	12	2	2	32	1	1	0	84
East Bay							34	3	3	1	0	0	2	13	0	1	0	57
North Bay							1	0	0	0	0	0	1	4	0	0	0	6
South Bay							3	3	1	0	0	0	5	23	0	0	0	35
Outside Bay Area							1	0	0	0	0	0	1	1	0	0	0	3
All Origins							53	9	15	7	12	2	11	73	1	2	0	185
San Francisco							17%	4%	13%	7%	14%	2%	2%	38%	1%	1%	0%	100%
East Bay							60%	5%	5%	2%	0%	0%	4%	23%	0%	2%	0%	100%
North Bay							17%	0%	0%	0%	0%	0%	17%	67%	0%	0%	0%	100%
South Bay							9%	9%	3%	0%	0%	0%	14%	66%	0%	0%	0%	100%
Outside Bay Area							33%	0%	0%	0%	0%	0%	33%	33%	0%	0%	0%	100%
All Origins							29%	5%	8%	4%	6%	1%	6%	39%	1%	1%	0%	100%

2013 UCSF Transportation Commute Survey

	TYPE OF PARKING LOCATION					ON-STREET PARKING AWAY FROM DESTINATION					
	Non-UCSF facility	On the street	UCSF facility	Other facility	All locations	Within one block	Two blocks	Three blocks	Four blocks	5 or more blocks	All on-street
PARNASSUS											
Faculty/Physician		18	145		163	1	3	1		13	18
Fellow/Resident	2	9	28	1	40	1	1	2		5	9
Nurse/Nurse Practitioner	31	49	201	3	284	2	3	6	4	33	48
Postdoc/Student	2	40	21	1	64		3	6	10	20	39
Other Staff	61	346	317	11	735	6	24	48	34	232	344
All population types	96	462	712	16	1,286	10	34	63	48	303	458
Faculty/Physician	0.0%	11.0%	89.0%	0.0%	100%	5.6%	16.7%	5.6%	0.0%	72.2%	100%
Fellow/Resident	5.0%	22.5%	70.0%	2.5%	100%	11.1%	11.1%	22.2%	0.0%	55.6%	100%
Nurse/Nurse Practitioner	10.9%	17.3%	70.8%	1.1%	100%	4.2%	6.3%	12.5%	8.3%	68.8%	100%
Postdoc/Student	3.1%	62.5%	32.8%	1.6%	100%	0.0%	7.7%	15.4%	25.6%	51.3%	100%
Other Staff	8.3%	47.1%	43.1%	1.5%	100%	1.7%	7.0%	14.0%	9.9%	67.4%	100%
All population types	7.5%	35.9%	55.4%	1.2%	100%	2.2%	7.4%	13.8%	10.5%	66.2%	100%
MISSION BAY											
Faculty/Physician	1	11	39		51	2	1	1	2	5	11
Fellow/Resident		4	6		10		1	1		2	4
Nurse/Nurse Practitioner	1		5		6						0
Postdoc/Student		48	19		67	6	5	6	11	20	48
Other Staff	7	111	101	1	220	2	17	23	26	43	111
All population types	9	174	170	1	354	10	24	31	39	70	174
Faculty/Physician	2.0%	21.6%	76.5%	0.0%	100%	18.2%	9.1%	9.1%	18.2%	45.5%	100%
Fellow/Resident	0.0%	40.0%	60.0%	0.0%	100%	0.0%	25.0%	25.0%	0.0%	50.0%	100%
Nurse/Nurse Practitioner	16.7%	0.0%	83.3%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Postdoc/Student	0.0%	71.6%	28.4%	0.0%	100%	12.5%	10.4%	12.5%	22.9%	41.7%	100%
Other Staff	3.2%	50.5%	45.9%	0.5%	100%	1.8%	15.3%	20.7%	23.4%	38.7%	100%
All population types	2.5%	49.2%	48.0%	0.3%	100%	5.7%	13.8%	17.8%	22.4%	40.2%	100%

2013 UCSF Transportation Commute Survey

	TYPE OF PARKING LOCATION					ON-STREET PARKING AWAY FROM DESTINATION					
	Non-UCSF facility	On the street	UCSF facility	Other facility	All locations	Within one block	Two blocks	Three blocks	Four blocks	5 or more blocks	All on-street
MOUNT ZION											
Faculty/Physician	2	5	26		33			1	4		5
Fellow/Resident	2		3		5						0
Nurse/Nurse Practitioner	29	15	12		56	2	3	1	2	7	15
Postdoc/Student		2	1		3	1				1	2
Other Staff	42	103	27	2	174	5	6	33	15	44	103
All population types	75	125	69	2	271	8	9	35	21	52	125
Faculty/Physician	6.1%	15.2%	78.8%	0.0%	100%	0.0%	0.0%	20.0%	80.0%	0.0%	100%
Fellow/Resident	40.0%	0.0%	60.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Nurse/Nurse Practitioner	51.8%	26.8%	21.4%	0.0%	100%	13.3%	20.0%	6.7%	13.3%	46.7%	100%
Postdoc/Student	0.0%	66.7%	33.3%	0.0%	100%	50.0%	0.0%	0.0%	0.0%	50.0%	100%
Other Staff	24.1%	59.2%	15.5%	1.1%	100%	4.9%	5.8%	32.0%	14.6%	42.7%	100%
All population types	27.7%	46.1%	25.5%	0.7%	100%	6.4%	7.2%	28.0%	16.8%	41.6%	100%
MISSION CENTER											
Faculty/Physician					0						0
Fellow/Resident			2		2						0
Nurse/Nurse Practitioner					0						0
Postdoc/Student					0						0
Other Staff	3	54	69	1	127	7	16	17	9	5	54
All population types	3	54	71	1	129	7	16	17	9	5	54
Faculty/Physician	0.0%	0.0%	0.0%	0.0%	0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Fellow/Resident	0.0%	0.0%	100.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Nurse/Nurse Practitioner	0.0%	0.0%	0.0%	0.0%	0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Postdoc/Student	0.0%	0.0%	0.0%	0.0%	0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Other Staff	2.4%	42.5%	54.3%	0.8%	100%	13.0%	29.6%	31.5%	16.7%	9.3%	100%
All population types	2.3%	41.9%	55.0%	0.8%	100%	13.0%	29.6%	31.5%	16.7%	9.3%	100%

1.2 UCSF RESIDENTS SURVEY

2013 UCSF Tenant Survey

	All Residential Locations		Parnassus Heights, Aldea Housing		Parnassus Heights, Avenue Housing		Mission Bay Housing	
Housing Contracts	919		172		151		596	
Surveys / Response Rate	153	17%	37	22%	16	11%	100	17%
Which category best represents your position at UCSF?								
Faculty/Physician	1	1%	0	0%	0	0%	1	1%
Fellow	5	3%	2	5%	0	0%	3	3%
Medical Resident	12	8%	4	11%	0	0%	8	8%
Not associated with UCSF	18	12%	5	14%	1	6%	12	12%
Postdoc	42	27%	10	27%	1	6%	31	31%
Staff	2	1%	0	0%	0	0%	2	2%
Student	73	48%	16	43%	14	88%	43	43%
TOTAL	153	100%	37	100%	16	100%	100	100%
Please identify your primary UCSF location for work/research/study								
Mission Bay	20	14%	0	0%	1	7%	19	21%
Mission Center	25	18%	5	14%	1	7%	19	21%
Mount Zion	4	3%	0	0%	0	0%	4	4%
Not associated with UCSF	10	7%	4	11%	0	0%	6	7%
Parnassus Heights	76	54%	27	75%	12	86%	37	41%
SFGH	5	4%	0	0%	0	0%	5	6%
Other	4	3%	1	3%	1	7%	2	2%
TOTAL	140	100%	36	100%	14	100%	90	100%
How many round trips do you make during a typical day from your UCSF residence to other locations outside UCSF?								
0	19	12%	3	8%	2	13%	14	14%
1	59	39%	13	35%	2	13%	44	44%
2	55	36%	15	41%	7	44%	33	33%
3	12	8%	4	11%	3	19%	5	5%
4	2	1%	1	3%	0	0%	1	1%
5	3	2%	0	0%	1	6%	2	2%
6	1	1%	0	0%	1	6%	0	0%
10	2	1%	1	3%	0	0%	1	1%
TOTAL	153	100%	37	100%	16	100%	100	100%
On a typical day when do you leave for your first trip from your UCSF residence?								
Before 7AM	23	16%	12	32%	2	14%	9	10%
7AM-8AM	46	32%	13	35%	5	36%	28	30%
8AM-9AM	39	27%	7	19%	2	14%	30	33%
9AM-10AM	17	12%	3	8%	1	7%	13	14%
10AM-11AM	2	1%	0	0%	1	7%	1	1%
11AM-noon	3	2%	1	3%	0	0%	2	2%
noon-1PM	1	1%	0	0%	0	0%	1	1%
1PM-2PM	3	2%	1	3%	0	0%	2	2%
4PM-5PM	3	2%	0	0%	1	7%	2	2%
5PM-6PM	2	1%	0	0%	1	7%	1	1%
6PM-7PM	1	1%	0	0%	0	0%	1	1%
7PM-8PM	2	1%	0	0%	0	0%	2	2%
After 8PM	1	1%	0	0%	1	7%	0	0%
TOTAL	143	100%	37	100%	14	100%	92	100%
On a typical day when do you return from your last trip to your UCSF residence?								
Before 7AM	1	1%	0	0%	0	0%	1	1%
7AM-8AM	1	1%	0	0%	1	7%	0	0%
8AM-9AM	1	1%	1	3%	0	0%	0	0%
10AM-11AM	2	1%	0	0%	0	0%	2	2%
noon-1PM	4	3%	0	0%	0	0%	4	4%
1PM-2PM	2	1%	1	3%	0	0%	1	1%
2PM-3PM	3	2%	0	0%	0	0%	3	3%
3PM-4PM	3	2%	0	0%	0	0%	3	3%
4PM-5PM	9	6%	2	5%	0	0%	7	8%
5PM-6PM	44	31%	9	24%	5	36%	30	33%
6PM-7PM	25	17%	9	24%	4	29%	12	13%
7PM-8PM	20	14%	8	22%	1	7%	11	12%
After 8PM	28	20%	7	19%	3	21%	18	20%
TOTAL	143	100%	37	100%	14	100%	92	100%

	All Residential Locations		Parnassus Heights, Aldea Housing		Parnassus Heights, Avenue Housing		Mission Bay Housing	
How did you travel from your UCSF residence to work or school on your most recent trip?								
Walk	40	26%	9	24%	6	38%	25	25%
Bike	4	3%	1	3%	0	0%	3	3%
Muni	8	5%	1	3%	2	13%	5	5%
UCSF Shuttle	79	52%	21	57%	7	44%	51	51%
Other transit	3	2%	0	0%	0	0%	3	3%
Motorcycle/scooter	2	1%	0	0%	0	0%	2	2%
Car or van, drove alone	15	10%	4	11%	1	6%	10	10%
Car or van, was dropped off	1	1%	1	3%	0	0%	0	0%
Carpool	1	1%	0	0%	0	0%	1	1%
TOTAL	153	100%	37	100%	16	100%	100	100%
How many days per week do you typically travel to work/school?								
1	3	2%	0	0%	0	0%	3	3%
2	8	5%	3	8%	2	13%	3	3%
3	6	4%	1	3%	0	0%	5	5%
4	7	5%	1	3%	2	13%	4	4%
5	120	78%	32	86%	12	75%	76	76%
Never/infrequent	9	6%	0	0%	0	0%	9	9%
TOTAL	153	100%	37	100%	16	100%	100	100%
How many additional one-way trips do you make on a typical day between other UCSF sites?								
0	87	58%	20	54%	7	44%	60	61%
1	40	26%	11	30%	4	25%	25	26%
2	18	12%	5	14%	4	25%	9	9%
3	4	3%	1	3%	1	6%	2	2%
4	2	1%	0	0%	0	0%	2	2%
TOTAL	151	100%	37	100%	16	100%	98	100%
If you own a vehicle, where do you typically park it at night?								
In a UCSF garage/lot	92	83%	32	94%	3	27%	57	86%
On the street	19	17%	2	6%	8	73%	9	14%
TOTAL	111	100%	34	100%	11	100%	66	100%

2. TRIP GENERATION CALCULATIONS

2.1 PARNASSUS HEIGHTS – EXISTING

Trip Generation
UCSF Parnassus Campus
Existing 2011-2012

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	1,146	10%	115	1,031	2.23	2,300	10%	230	2,070
Fellows/Residents	963	10%	96	867	2.23	1,933	10%	193	1,739
Nurses/Nurse Practitioners	1,562	10%	156	1,406	2.23	3,135	10%	313	2,821
Postdocs/Students	2,906	10%	291	2,615	2.23	5,832	10%	583	5,249
Other Staff	5,313	10%	531	4,782	2.23	10,663	10%	1,066	9,597
Total staff	*11,890*	*10%*	*1,189*	*10,701*	*2.23*	*23,863*	*10%*	*2,386*	*21,477*
PATIENTS & VISITORS									
Inpatients	498	0%	0	498	2.00	996	0%	0	996
Outpatients	2,074	0%	0	2,074	2.00	4,148	0%	0	4,148
Visitors to inpatients	1,245	0%	0	1,245	2.00	2,490	0%	0	2,490
Visitors with outpatients	1,452	0%	0	1,452	2.00	2,904	0%	0	2,904
Total patients and visitors	*5,269*	*0%*	*0*	*5,269*	*2.00*	*10,538*	*0%*	*0*	*10,538*
OTHER VISITORS									
Community Center Visitors	290	0%	0	290	2.00	580	0%	0	580
Faculty/Staff Visitors	450	0%	0	450	2.00	900	0%	0	900
Vendors/Services	180	0%	0	180	2.00	360	0%	0	360
Total other visitors	*920*	*0%*	*0*	*920*	*2.00*	*1,840*	*0%*	*0*	*1,840*
Subtotal Staff+Patients+Visitors	*18,079*	*7%*	*1,189*	*16,890*	*2.15*	*36,241*	*7%*	*2,386*	*33,855*
CHILDCARE									
Childcare staff	20	10%	2	18	2.23	40	10%	4	36
Childcare children	100	0%	0	100	2.00	200	50%	100	100
Total childcare	*120*	*2%*	*2*	*118*	*2.04*	*240*	*43%*	*104*	*136*
RESIDENTIAL (222 Units)									
Contract holders	323	0%	0	323	4.50	1,454	70%	1,017	436
Spouses	150	0%	0	150	4.50	675	10%	68	608
Children	85	0%	0	85	0.00	0		0	0
Visitors	20	0%	0	20	2.00	40	0%	0	40
Vendors/Services	10	0%	0	10	2.00	20	0%	0	20
Total residential	*588*	*0%*	*0*	*588*	*3.72*	*2,189*	*50%*	*1,085*	*1,104*
GRAND TOTAL	18,787	6%	1,191	17,596	2.20	38,670	9%	3,575	35,095

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

Trip Generation
UCSF Parnassus Campus
Existing 2011-2012

Population Group	Mode Splits for External Trips [b]																	
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	1,242	60%	41	2%	104	5%	21	1%	311	15%	145	7%	104	5%	104	5%	2,070	100%
Fellows/Residents	557	32%	35	2%	17	1%	0	0%	261	15%	261	15%	174	10%	435	25%	1,739	100%
Nurses/Nurse Practitioners	1,552	55%	141	5%	141	5%	0	0%	423	15%	282	10%	141	5%	141	5%	2,821	100%
Postdocs/Students	525	10%	105	2%	52	1%	0	0%	892	17%	1,575	30%	787	15%	1,312	25%	5,249	100%
Other Staff	2,879	30%	480	5%	480	5%	480	5%	2,399	25%	1,440	15%	480	5%	960	10%	9,597	100%
Total staff	*6,754*	*31%*	*802*	*4%*	*794*	*4%*	*501*	*2%*	*4,286*	*20%*	*3,702*	*17%*	*1,686*	*8%*	*2,951*	*14%*	*21,477*	*100%*
PATIENTS & VISITORS																		
Inpatients	329	33%	159	16%	50	5%	50	5%	349	35%	0	0%	10	1%	50	5%	996	100%
Outpatients	1,369	33%	664	16%	207	5%	207	5%	1,452	35%	0	0%	41	1%	207	5%	4,148	100%
Visitors to inpatients	1,121	45%	374	15%	50	2%	50	2%	623	25%	0	0%	25	1%	249	10%	2,490	100%
Visitors with outpatients	958	33%	465	16%	145	5%	145	5%	1,016	35%	0	0%	29	1%	145	5%	2,904	100%
Total patients and visitors	*3,776*	*36%*	*1,661*	*16%*	*452*	*4%*	*452*	*4%*	*3,439*	*33%*	*0*	*0%*	*105*	*1%*	*651*	*6%*	*10,538*	*100%*
OTHER VISITORS																		
Community Center Visitors	290	50%	58	10%	17	3%	12	2%	128	22%	0	0%	6	1%	70	12%	580	100%
Faculty/Staff Visitors	450	50%	90	10%	27	3%	18	2%	198	22%	0	0%	9	1%	108	12%	900	100%
Vendors/Services	252	70%	7	2%	4	1%	0	0%	36	10%	0	0%	7	2%	54	15%	360	100%
Total other visitors	*992*	*54%*	*155*	*8%*	*48*	*3%*	*30*	*2%*	*362*	*20%*	*0*	*0%*	*22*	*1%*	*232*	*13%*	*1,840*	*100%*
Subtotal Staff+Patients+Visitors	*11,523*	*34%*	*2,618*	*8%*	*1,295*	*4%*	*982*	*3%*	*8,087*	*24%*	*3,702*	*11%*	*1,813*	*5%*	*3,834*	*11%*	*33,855*	*100%*
CHILDCARE																		
Childcare staff	11	30%	2	5%	2	5%	2	5%	9	25%	5	15%	2	5%	4	10%	36	100%
Childcare children	0	0%	100	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	100	100%
Total childcare	*11*	*8%*	*102*	*75%*	*2*	*1%*	*2*	*1%*	*9*	*7%*	*5*	*4%*	*2*	*1%*	*4*	*3%*	*136*	*100%*
RESIDENTIAL (222 Units)																		
Contract holders	65	15%	13	3%	0	0%	0	0%	44	10%	305	70%	9	2%	0	0%	436	100%
Spouses	182	30%	30	5%	0	0%	0	0%	182	30%	122	20%	30	5%	61	10%	608	100%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	20	50%	4	10%	1	3%	1	2%	9	22%	0	0%	0	1%	5	12%	40	100%
Vendors/Services	14	70%	0	2%	0	1%	0	0%	2	10%	0	0%	0	2%	3	15%	20	100%
Total residential	*282*	*26%*	*48*	*4%*	*1*	*0%*	*1*	*0%*	*237*	*21%*	*427*	*39%*	*40*	*4%*	*69*	*6%*	*1,104*	*100%*
GRAND TOTAL	11,815	34%	2,768	8%	1,298	4%	985	3%	8,333	24%	4,134	12%	1,855	5%	3,907	11%	35,095	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Parnassus Campus.

Trip Generation
UCSF Parnassus Campus
Existing 2011-2012

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
													AM Peak Hour			PM Peak Hour		
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	1,408	68%	311	15%	145	7%	207	10%	2,070	100%	1,388	1.15	19%	100%	0%	12%	0%	100%
Fellows/Residents	609	35%	261	15%	261	15%	609	35%	1,739	100%	652	1.39	18%	97%	3%	13%	5%	95%
Nurses/Nurse Practitioners	1,834	65%	423	15%	282	10%	282	10%	2,821	100%	1,923	1.17	20%	100%	0%	8%	0%	100%
Postdocs/Students	682	13%	892	17%	1,575	30%	2,100	40%	5,249	100%	866	2.73	18%	97%	3%	13%	5%	95%
Other Staff	4,319	45%	2,399	25%	1,440	15%	1,440	15%	9,597	100%	4,223	1.48	23%	100%	0%	23%	3%	97%
Total staff	*8,851*	*41%*	*4,286*	*20%*	*3,702*	*17%*	*4,637*	*22%*	*21,477*	*100%*	*9,053*	*1.48*	*22%*	*97%*	*3%*	*17%*	*5%*	*95%*
PATIENTS & VISITORS																		
Inpatients	588	59%	349	35%	0	0%	60	6%	996	100%	677	1.10	12%	79%	21%	9%	22%	78%
Outpatients	2,447	59%	1,452	35%	0	0%	249	6%	4,148	100%	2,821	1.88	12%	79%	21%	9%	22%	78%
Visitors to inpatients	1,594	64%	623	25%	0	0%	274	11%	2,490	100%	1,897	1.04	10%	77%	23%	7%	28%	72%
Visitors with outpatients	1,713	59%	1,016	35%	0	0%	174	6%	2,904	100%			12%	79%	21%	9%	22%	78%
Total patients and visitors	*6,342*	*60%*	*3,439*	*33%*	*0*	*0%*	*757*	*7%*	*10,538*	*100%*	*5,395*	*1.48*	*11%*	*78%*	*22%*	*8%*	*24%*	*76%*
OTHER VISITORS																		
Community Center Visitors	377	65%	128	22%	0	0%	75	13%	580	100%	416	1.05	15%	82%	18%	6%	17%	83%
Faculty/Staff Visitors	585	65%	198	22%	0	0%	117	13%	900	100%	645	1.05	15%	82%	18%	6%	17%	83%
Vendors/Services	263	73%	36	10%	0	0%	61	17%	360	100%	268	1.01	19%	84%	16%	10%	19%	81%
Total other visitors	*1,225*	*67%*	*362*	*20%*	*0*	*0%*	*254*	*14%*	*1,840*	*100%*	*1,329*	*1.04*	*16%*	*83%*	*17%*	*7%*	*18%*	*82%*
Subtotal Staff+Patients+Visitors	*16,418*	*48%*	*8,087*	*24%*	*3,702*	*11%*	*5,648*	*17%*	*33,855*	*100%*	*15,777*	*1.44*	*18%*	*92%*	*8%*	*13%*	*10%*	*90%*
CHILDCARE																		
Childcare staff	16	45%	9	25%	5	15%	5	15%	36	100%	16	1.48	23%	100%	0%	23%	3%	97%
Childcare children	100	100%	0	0%	0	0%	0	0%	100	100%	200	1.00	50%	50%	50%	50%	50%	50%
Total childcare	*116*	*85%*	*9*	*7%*	*5*	*4%*	*5*	*4%*	*136*	*100%*	*216*	*1.04*	*48%*	*52%*	*48%*	*48%*	*48%*	*52%*
RESIDENTIAL (222 Units)																		
Contract holders	78	18%	44	10%	305	70%	9	2%	436	100%	112	3.55	20%	10%	90%	15%	93%	7%
Spouses	213	35%	182	30%	122	20%	91	15%	608	100%	251	1.45	8%	21%	79%	17%	67%	34%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	26	65%	9	22%	0	0%	5	13%	40	100%	29	1.05	15%	82%	18%	6%	17%	83%
Vendors/Services	15	73%	2	10%	0	0%	3	17%	20	100%	15	1.01	19%	84%	16%	10%	19%	81%
Total residential	*332*	*30%*	*237*	*21%*	*427*	*39%*	*108*	*10%*	*1,104*	*100%*	*407*	*1.98*	*14%*	*29%*	*71%*	*17%*	*69%*	*31%*
GRAND TOTAL	16,866	48%	8,333	24%	4,134	12%	5,761	16%	35,095	100%	16,400	1.45	18%	89%	11%	14%	13%	87%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Parnassus Heights Transportation Surveys, 1992 and 1999, ITE Trip Generation 9th Edition (residential AM), and 2002 SF Guidelines (residential PM).

Trip Generation
UCSF Parnassus Campus
Existing 2011-2012

Population Group	AM Peak Hour Person Trips (External)															AM Peak Hour								
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes			Private Vehicles			UCSF Shuttle			Total Vehicles		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	267	0	267	59	0	59	28	0	28	39	0	39	393	0	393	264	0	264	2	2	4	266	2	268
Fellows/Residents	106	3	109	46	1	47	46	1	47	106	3	109	304	8	312	114	4	118	3	3	6	117	7	124
Nurses/Nurse Practitioners	367	0	367	85	0	85	56	0	56	56	0	56	564	0	564	385	0	385	4	4	8	389	4	393
Postdocs/Students	119	4	123	156	5	161	275	9	284	367	11	378	917	29	946	151	5	156	19	19	38	170	24	194
Other Staff	993	0	993	552	0	552	331	0	331	331	0	331	2,207	0	2,207	971	0	971	22	22	44	993	22	1,015
Total staff	*1,852*	*7*	*1,859*	*898*	*6*	*904*	*736*	*10*	*746*	*899*	*14*	*913*	*4,385*	*37*	*4,422*	*1,885*	*9*	*1,894*	*50*	*50*	*100*	*1,935*	*59*	*1,994*
PATIENTS & VISITORS																								
Inpatients	56	15	71	33	9	42	0	0	0	6	2	8	95	26	121	64	17	81	0	0	0	64	17	81
Outpatients	232	62	294	138	37	175	0	0	0	24	6	30	394	105	499	267	71	338	0	0	0	267	71	338
Visitors to inpatients	123	37	160	48	14	62	0	0	0	21	6	27	192	57	249	146	44	190	0	0	0	146	44	190
Visitors with outpatients	162	43	205	96	26	122	0	0	0	17	4	21	275	73	348	0	0	0	0	0	0	0	0	0
Total patients and visitors	*573*	*157*	*730*	*315*	*86*	*401*	*0*	*0*	*0*	*68*	*18*	*86*	*956*	*261*	*1,217*	*477*	*132*	*609*	*0*	*0*	*0*	*477*	*132*	*609*
OTHER VISITORS																								
Community Center Visitors	46	10	56	16	3	19	0	0	0	9	2	11	71	15	86	51	11	62	0	0	0	51	11	62
Faculty/Staff Visitors	72	16	88	24	5	29	0	0	0	14	3	17	110	24	134	79	17	96	0	0	0	79	17	96
Vendors/Services	42	8	50	6	1	7	0	0	0	10	2	12	58	11	69	43	8	51	0	0	0	43	8	51
Total other visitors	*160*	*34*	*194*	*46*	*9*	*55*	*0*	*0*	*0*	*33*	*7*	*40*	*239*	*50*	*289*	*173*	*36*	*209*	*0*	*0*	*0*	*173*	*36*	*209*
Subtotal Staff+Patients+Visitors	*2,585*	*198*	*2,783*	*1,259*	*101*	*1,360*	*736*	*10*	*746*	*1,000*	*39*	*1,039*	*5,580*	*348*	*5,928*	*2,535*	*177*	*2,712*	*50*	*50*	*100*	*2,585*	*227*	*2,812*
CHILDCARE																								
Childcare staff	4	0	4	2	0	2	1	0	1	1	0	1	8	0	8	4	0	4	0	0	0	4	0	4
Childcare children	25	25	50	0	0	0	0	0	0	0	0	0	25	25	50	50	50	100	0	0	0	50	50	100
Total childcare	*29*	*25*	*54*	*2*	*0*	*2*	*1*	*0*	*1*	*1*	*0*	*1*	*33*	*25*	*58*	*54*	*50*	*104*	*0*	*0*	*0*	*54*	*50*	*104*
RESIDENTIAL (222 Units)																								
Contract holders	2	14	16	1	8	9	6	55	61	0	2	2	9	79	88	2	20	22	4	4	8	6	24	30
Spouses	3	13	16	3	11	14	2	7	9	1	6	7	9	37	46	4	15	19	1	1	2	5	16	21
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	3	1	4	1	0	1	0	0	0	1	0	1	5	1	6	4	1	5	0	0	0	4	1	5
Vendors/Services	2	0	2	0	0	0	0	0	0	1	0	1	3	0	3	2	0	2	0	0	0	2	0	2
Total residential	*10*	*28*	*38*	*5*	*19*	*24*	*8*	*62*	*70*	*3*	*8*	*11*	*26*	*117*	*143*	*12*	*36*	*48*	*5*	*5*	*10*	*17*	*41*	*58*
GRAND TOTAL	2,624	251	2,875	1,266	120	1,386	745	72	817	1,004	47	1,051	5,639	490	6,129	2,601	263	2,864	55	55	110	2,656	318	2,974

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Parnassus Campus
Existing 2011-2012

Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour Private Vehicles			PM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	0	169	169	0	37	37	0	17	17	0	25	25	0	248	248	0	167	167	1	1	2	1	168	169
Fellows/Residents	4	75	79	2	32	34	2	32	34	4	75	79	12	214	226	4	81	85	2	2	4	6	83	89
Nurses/Nurse Practitioners	0	147	147	0	34	34	0	23	23	0	23	23	0	227	227	0	154	154	2	2	4	2	156	158
Postdocs/Students	4	84	88	6	110	116	10	194	204	14	259	273	34	647	681	6	107	113	14	14	28	20	121	141
Other Staff	30	963	993	17	535	552	10	321	331	10	321	331	67	2,140	2,207	29	942	971	22	22	44	51	964	1,015
Total staff	*38*	*1,438*	*1,476*	*25*	*748*	*773*	*22*	*587*	*609*	*28*	*703*	*731*	*113*	*3,476*	*3,589*	*39*	*1,451*	*1,490*	*41*	*41*	*82*	*80*	*1,492*	*1,572*
PATIENTS & VISITORS																								
Inpatients	12	41	53	7	24	31	0	0	0	1	4	5	20	69	89	13	48	61	0	0	0	13	48	61
Outpatients	48	172	220	29	102	131	0	0	0	5	17	22	82	291	373	56	198	254	0	0	0	56	198	254
Visitors to inpatients	31	80	111	12	31	43	0	0	0	5	14	19	48	125	173	37	96	133	0	0	0	37	96	133
Visitors with outpatients	34	120	154	20	71	91	0	0	0	3	12	15	57	203	260	0	0	0	0	0	0	0	0	0
Total patients and visitors	*125*	*413*	*538*	*68*	*228*	*296*	*0*	*0*	*0*	*14*	*47*	*61*	*207*	*688*	*895*	*106*	*342*	*448*	*0*	*0*	*0*	*106*	*342*	*448*
OTHER VISITORS																								
Community Center Visitors	4	19	23	1	6	7	0	0	0	1	4	5	6	29	35	4	21	25	0	0	0	4	21	25
Faculty/Staff Visitors	6	29	35	2	10	12	0	0	0	1	6	7	9	45	54	7	32	39	0	0	0	7	32	39
Vendors/Services	5	21	26	1	3	4	0	0	0	1	5	6	7	29	36	5	22	27	0	0	0	5	22	27
Total other visitors	*15*	*69*	*84*	*4*	*19*	*23*	*0*	*0*	*0*	*3*	*15*	*18*	*22*	*103*	*125*	*16*	*75*	*91*	*0*	*0*	*0*	*16*	*75*	*91*
Subtotal Staff+Patients+Visitors	*178*	*1,920*	*2,098*	*97*	*995*	*1,092*	*22*	*587*	*609*	*45*	*765*	*810*	*342*	*4,267*	*4,609*	*161*	*1,868*	*2,029*	*41*	*41*	*82*	*202*	*1,909*	*2,111*
CHILDCARE																								
Childcare staff	0	4	4	0	2	2	0	1	1	0	1	1	0	8	8	0	4	4	0	0	0	0	4	4
Childcare children	25	25	50	0	0	0	0	0	0	0	0	0	25	25	50	50	50	100	0	0	0	50	50	100
Total childcare	*25*	*29*	*54*	*0*	*2*	*2*	*0*	*1*	*1*	*0*	*1*	*1*	*25*	*33*	*58*	*50*	*54*	*104*	*0*	*0*	*0*	*50*	*54*	*104*
RESIDENTIAL (222 Units)																								
Contract holders	11	1	12	6	0	6	43	3	46	1	0	1	61	4	65	16	1	17	3	3	6	19	4	23
Spouses	24	12	36	21	11	32	14	7	21	10	5	15	69	35	104	29	15	44	1	1	2	30	16	46
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	1
Vendors/Services	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	1
Total residential	*35*	*15*	*50*	*27*	*11*	*38*	*57*	*10*	*67*	*11*	*5*	*16*	*130*	*41*	*171*	*45*	*18*	*63*	*4*	*4*	*8*	*49*	*22*	*71*
GRAND TOTAL	238	1,964	2,202	124	1,008	1,132	79	598	677	56	771	827	497	4,341	4,838	256	1,940	2,196	45	45	90	301	1,985	2,286

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

2.2 PARNASSUS HEIGHTS – 2035

Trip Generation
UCSF Parnassus Campus
Year 2035

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	1,146	10%	115	1,031	2.23	2,300	10%	230	2,070
Fellows/Residents	987	10%	99	888	2.23	1,981	10%	198	1,783
Nurses/Nurse Practitioners	1,468	10%	147	1,321	2.23	2,946	10%	295	2,652
Postdocs/Students	3,448	10%	345	3,103	2.23	6,920	10%	692	6,228
Other Staff	5,352	10%	535	4,817	2.23	10,741	10%	1,074	9,667
Total staff	*12,401*	*10%*	*1,240*	*11,161*	*2.23*	*24,889*	*10%*	*2,489*	*22,400*
PATIENTS & VISITORS									
Inpatients	462	0%	0	462	2.00	924	0%	0	924
Outpatients	2,223	0%	0	2,223	2.00	4,446	0%	0	4,446
Visitors to inpatients	1,155	0%	0	1,155	2.00	2,310	0%	0	2,310
Visitors with outpatients	1,556	0%	0	1,556	2.00	3,112	0%	0	3,112
Total patients and visitors	*5,396*	*0%*	*0*	*5,396*	*2.00*	*10,792*	*0%*	*0*	*10,792*
OTHER VISITORS									
Community Center Visitors	290	0%	0	290	2.00	580	0%	0	580
Faculty/Staff Visitors	450	0%	0	450	2.00	900	0%	0	900
Vendors/Services	180	0%	0	180	2.00	360	0%	0	360
Total other visitors	*920*	*0%*	*0*	*920*	*2.00*	*1,840*	*0%*	*0*	*1,840*
Subtotal Staff+Patients+Visitors	*18,717*	*7%*	*1,240*	*17,477*	*2.15*	*37,521*	*7%*	*2,489*	*35,032*
CHILDCARE									
Childcare staff	25	10%	3	23	2.23	50	10%	5	45
Childcare children	120	0%	0	120	2.00	240	50%	120	120
Total childcare	*145*	*2%*	*3*	*143*	*2.04*	*290*	*43%*	*125*	*165*
RESIDENTIAL (551 Units)									
Contract holders	633	0%	0	633	4.50	2,849	70%	1,994	855
Spouses	210	0%	0	210	4.50	945	10%	95	851
Children	140	0%	0	140	0.00	0	0%	0	0
Visitors	40	0%	0	40	2.00	80	0%	0	80
Vendors/Services	20	0%	0	20	2.00	40	0%	0	40
Total residential	*1,043*	*0%*	*0*	*1,043*	*3.75*	*3,914*	*53%*	*2,088*	*1,825*
GRAND TOTAL	19,905	6%	1,243	18,662	2.24	41,724	11%	4,702	37,022

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

Trip Generation
UCSF Parnassus Campus
Year 2035

Population Group	Mode Splits for External Trips [b]																			
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	1,242	60%	41	2%	104	5%	21	1%	311	15%	145	7%	104	5%	104	5%	2,070	100%
Fellows/Residents	571	32%	36	2%	18	1%	0	0%	267	15%	267	15%	178	10%	446	25%	1,783	100%
Nurses/Nurse Practitioners	1,458	55%	133	5%	133	5%	0	0%	398	15%	265	10%	133	5%	133	5%	2,652	100%
Postdocs/Students	623	10%	125	2%	62	1%	0	0%	1,059	17%	1,868	30%	934	15%	1,557	25%	6,228	100%
Other Staff	2,900	30%	483	5%	483	5%	483	5%	2,417	25%	1,450	15%	483	5%	967	10%	9,667	100%
Total staff	*6,794*	*30%*	*818*	*4%*	*800*	*4%*	*504*	*2%*	*4,451*	*20%*	*3,996*	*18%*	*1,832*	*8%*	*3,206*	*14%*	*22,400*	*100%*
PATIENTS & VISITORS																		
Inpatients	305	33%	148	16%	46	5%	46	5%	323	35%	0	0%	9	1%	46	5%	924	100%
Outpatients	1,467	33%	711	16%	222	5%	222	5%	1,556	35%	0	0%	44	1%	222	5%	4,446	100%
Visitors to inpatients	1,040	45%	347	15%	46	2%	46	2%	578	25%	0	0%	23	1%	231	10%	2,310	100%
Visitors with outpatients	1,027	33%	498	16%	156	5%	156	5%	1,089	35%	0	0%	31	1%	156	5%	3,112	100%
Total patients and visitors	*3,839*	*36%*	*1,704*	*16%*	*470*	*4%*	*470*	*4%*	*3,546*	*33%*	*0*	*0%*	*108*	*1%*	*655*	*6%*	*10,792*	*100%*
OTHER VISITORS																		
Community Center Visitors	290	50%	58	10%	17	3%	12	2%	128	22%	0	0%	6	1%	70	12%	580	100%
Faculty/Staff Visitors	450	50%	90	10%	27	3%	18	2%	198	22%	0	0%	9	1%	108	12%	900	100%
Vendors/Services	252	70%	7	2%	4	1%	0	0%	36	10%	0	0%	7	2%	54	15%	360	100%
Total other visitors	*992*	*54%*	*155*	*8%*	*48*	*3%*	*30*	*2%*	*362*	*20%*	*0*	*0%*	*22*	*1%*	*232*	*13%*	*1,840*	*100%*
Subtotal Staff+Patients+Visitors	*11,624*	*33%*	*2,676*	*8%*	*1,318*	*4%*	*1,004*	*3%*	*8,359*	*24%*	*3,996*	*11%*	*1,962*	*6%*	*4,092*	*12%*	*35,032*	*100%*
CHILDCARE																		
Childcare staff	14	30%	2	5%	2	5%	2	5%	11	25%	7	15%	2	5%	5	10%	45	100%
Childcare children	0	0%	120	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	120	100%
Total childcare	*14*	*8%*	*122*	*74%*	*2*	*1%*	*2*	*1%*	*11*	*7%*	*7*	*4%*	*2*	*1%*	*5*	*3%*	*165*	*100%*
RESIDENTIAL (551 Units)																		
Contract holders	128	15%	26	3%	0	0%	0	0%	85	10%	598	70%	17	2%	0	0%	855	100%
Spouses	255	30%	43	5%	0	0%	0	0%	255	30%	170	20%	43	5%	85	10%	851	100%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	40	50%	8	10%	2	3%	2	2%	18	22%	0	0%	1	1%	10	12%	80	100%
Vendors/Services	28	70%	1	2%	0	1%	0	0%	4	10%	0	0%	1	2%	6	15%	40	100%
Total residential	*451*	*25%*	*77*	*4%*	*3*	*0%*	*2*	*0%*	*362*	*20%*	*768*	*42%*	*61*	*3%*	*101*	*6%*	*1,825*	*100%*
GRAND TOTAL	12,089	33%	2,876	8%	1,323	4%	1,008	3%	8,733	24%	4,771	13%	2,025	5%	4,197	11%	37,022	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Parnassus Campus.

Trip Generation
UCSF Parnassus Campus
Year 2035

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
													AM Peak Hour			PM Peak Hour		
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	1,408	68%	311	15%	145	7%	207	10%	2,070	100%	1,388	1.15	19%	100%	0%	12%	0%	100%
Fellows/Residents	624	35%	267	15%	267	15%	624	35%	1,783	100%	669	1.39	18%	97%	3%	13%	5%	95%
Nurses/Nurse Practitioners	1,724	65%	398	15%	265	10%	265	10%	2,652	100%	1,808	1.17	20%	100%	0%	8%	0%	100%
Postdocs/Students	810	13%	1,059	17%	1,868	30%	2,491	40%	6,228	100%	1,028	2.73	18%	97%	3%	13%	5%	95%
Other Staff	4,350	45%	2,417	25%	1,450	15%	1,450	15%	9,667	100%	4,254	1.48	23%	100%	0%	23%	3%	97%
Total staff	*8,915*	*40%*	*4,451*	*20%*	*3,996*	*18%*	*5,037*	*22%*	*22,400*	*100%*	*9,146*	*1.50*	*22%*	*97%*	*3%*	*17%*	*5%*	*95%*
PATIENTS & VISITORS																		
Inpatients	545	59%	323	35%	0	0%	55	6%	924	100%	628	1.10	12%	79%	21%	9%	22%	78%
Outpatients	2,623	59%	1,556	35%	0	0%	267	6%	4,446	100%	3,023	1.87	12%	79%	21%	9%	22%	78%
Visitors to inpatients	1,478	64%	578	25%	0	0%	254	11%	2,310	100%	1,760	1.04	10%	77%	23%	7%	28%	72%
Visitors with outpatients	1,836	59%	1,089	35%	0	0%	187	6%	3,112	100%			12%	79%	21%	9%	22%	78%
Total patients and visitors	*6,483*	*60%*	*3,546*	*33%*	*0*	*0%*	*763*	*7%*	*10,792*	*100%*	*5,412*	*1.51*	*11%*	*79%*	*21%*	*8%*	*24%*	*76%*
OTHER VISITORS																		
Community Center Visitors	377	65%	128	22%	0	0%	75	13%	580	100%	416	1.05	15%	82%	18%	6%	17%	83%
Faculty/Staff Visitors	585	65%	198	22%	0	0%	117	13%	900	100%	645	1.05	15%	82%	18%	6%	17%	83%
Vendors/Services	263	73%	36	10%	0	0%	61	17%	360	100%	268	1.01	19%	84%	16%	10%	19%	81%
Total other visitors	*1,225*	*67%*	*362*	*20%*	*0*	*0%*	*254*	*14%*	*1,840*	*100%*	*1,329*	*1.04*	*16%*	*83%*	*17%*	*7%*	*18%*	*82%*
Subtotal Staff+Patients+Visitors	*16,623*	*47%*	*8,359*	*24%*	*3,996*	*11%*	*6,054*	*17%*	*35,032*	*100%*	*15,887*	*1.47*	*18%*	*92%*	*8%*	*13%*	*10%*	*90%*
CHILDCARE																		
Childcare staff	20	45%	11	25%	7	15%	7	15%	45	100%	20	1.48	23%	100%	0%	23%	3%	97%
Childcare children	120	100%	0	0%	0	0%	0	0%	120	100%	240	1.00	50%	50%	50%	50%	50%	50%
Total childcare	*140*	*85%*	*11*	*7%*	*7*	*4%*	*7*	*4%*	*165*	*100%*	*260*	*1.04*	*48%*	*52%*	*48%*	*48%*	*48%*	*52%*
RESIDENTIAL (551 Units)																		
Contract holders	154	18%	85	10%	598	70%	17	2%	855	100%	219	3.55	20%	10%	90%	15%	93%	7%
Spouses	298	35%	255	30%	170	20%	128	15%	851	100%	352	1.45	8%	21%	79%	17%	67%	34%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	52	65%	18	22%	0	0%	10	13%	80	100%	57	1.05	15%	82%	18%	6%	17%	83%
Vendors/Services	29	73%	4	10%	0	0%	7	17%	40	100%	30	1.01	19%	84%	16%	10%	19%	81%
Total residential	*533*	*29%*	*362*	*20%*	*768*	*42%*	*162*	*9%*	*1,825*	*100%*	*658*	*2.09*	*16%*	*30%*	*70%*	*18%*	*70%*	*30%*
GRAND TOTAL	17,296	47%	8,733	24%	4,771	13%	6,223	17%	37,022	100%	16,805	1.48	18%	88%	12%	14%	15%	85%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Parnassus Heights Transportation Surveys, 1992 and 1999, ITE Trip Generation 9th Edition (residential AM), and 2002 SF Guidelines (residential PM).

Trip Generation
UCSF Parnassus Campus
Year 2035

Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	267	0	267	59	0	59	28	0	28	39	0	39	393	0	393	264	0	264	2	2	4	266	2	268
Fellows/Residents	109	3	112	47	1	48	47	1	48	109	3	112	312	8	320	117	4	121	3	3	6	120	7	127
Nurses/Nurse Practitioners	345	0	345	80	0	80	53	0	53	53	0	53	531	0	531	362	0	362	4	4	8	366	4	370
Postdocs/Students	141	4	145	185	6	191	326	10	336	435	13	448	1,087	33	1,120	179	6	185	22	22	44	201	28	229
Other Staff	1,001	0	1,001	556	0	556	334	0	334	334	0	334	2,225	0	2,225	978	0	978	22	22	44	1,000	22	1,022
Total staff	*1,863*	*7*	*1,870*	*927*	*7*	*934*	*788*	*11*	*799*	*970*	*16*	*986*	*4,548*	*41*	*4,589*	*1,900*	*10*	*1,910*	*53*	*53*	*106*	*1,953*	*63*	*2,016*
PATIENTS & VISITORS																								
Inpatients	52	14	66	31	8	39	0	0	0	5	1	6	88	23	111	60	16	76	0	0	0	60	16	76
Outpatients	249	66	315	148	39	187	0	0	0	25	7	32	422	112	534	287	76	363	0	0	0	287	76	363
Visitors to inpatients	114	34	148	44	13	57	0	0	0	20	6	26	178	53	231	136	40	176	0	0	0	136	40	176
Visitors with outpatients	174	46	220	103	27	130	0	0	0	18	5	23	295	78	373	0	0	0	0	0	0	0	0	0
Total patients and visitors	*589*	*160*	*749*	*326*	*87*	*413*	*0*	*0*	*0*	*68*	*19*	*87*	*983*	*266*	*1,249*	*483*	*132*	*615*	*0*	*0*	*0*	*483*	*132*	*615*
OTHER VISITORS																								
Community Center Visitors	46	10	56	16	3	19	0	0	0	9	2	11	71	15	86	51	11	62	0	0	0	51	11	62
Faculty/Staff Visitors	72	16	88	24	5	29	0	0	0	14	3	17	110	24	134	79	17	96	0	0	0	79	17	96
Vendors/Services	42	8	50	6	1	7	0	0	0	10	2	12	58	11	69	43	8	51	0	0	0	43	8	51
Total other visitors	*160*	*34*	*194*	*46*	*9*	*55*	*0*	*0*	*0*	*33*	*7*	*40*	*239*	*50*	*289*	*173*	*36*	*209*	*0*	*0*	*0*	*173*	*36*	*209*
Subtotal Staff+Patients+Visitors	*2,612*	*201*	*2,813*	*1,299*	*103*	*1,402*	*788*	*11*	*799*	*1,071*	*42*	*1,113*	*5,770*	*357*	*6,127*	*2,556*	*178*	*2,734*	*53*	*53*	*106*	*2,609*	*231*	*2,840*
CHILDCARE																								
Childcare staff	5	0	5	3	0	3	2	0	2	2	0	2	12	0	12	5	0	5	0	0	0	5	0	5
Childcare children	30	30	60	0	0	0	0	0	0	0	0	0	30	30	60	60	60	120	0	0	0	60	60	120
Total childcare	*35*	*30*	*65*	*3*	*0*	*3*	*2*	*0*	*2*	*2*	*0*	*2*	*42*	*30*	*72*	*65*	*60*	*125*	*0*	*0*	*0*	*65*	*60*	*125*
RESIDENTIAL (551 Units)																								
Contract holders	3	28	31	2	15	17	12	108	120	0	3	3	17	154	171	4	39	43	8	8	16	12	47	59
Spouses	5	18	23	4	16	20	3	10	13	2	8	10	14	52	66	6	22	28	1	1	2	7	23	30
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	6	1	7	2	0	2	0	0	0	1	0	1	9	1	10	7	2	9	0	0	0	7	2	9
Vendors/Services	5	1	6	1	0	1	0	0	0	1	0	1	7	1	8	5	1	6	0	0	0	5	1	6
Total residential	*19*	*48*	*67*	*9*	*31*	*40*	*15*	*118*	*133*	*4*	*11*	*15*	*47*	*208*	*255*	*22*	*64*	*86*	*9*	*9*	*18*	*31*	*73*	*104*
GRAND TOTAL	2,666	279	2,945	1,311	134	1,445	805	129	934	1,077	53	1,130	5,859	595	6,454	2,643	302	2,945	62	62	124	2,705	364	3,069

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Parnassus Campus
Year 2035

Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour Private Vehicles			PM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	0	169	169	0	37	37	0	17	17	0	25	25	0	248	248	0	167	167	1	1	2	1	168	169
Fellows/Residents	4	77	81	2	33	35	2	33	35	4	77	81	12	220	232	4	83	87	2	2	4	6	85	91
Nurses/Nurse Practitioners	0	138	138	0	32	32	0	21	21	0	21	21	0	212	212	0	145	145	1	1	2	1	146	147
Postdocs/Students	5	100	105	7	131	138	12	231	243	16	308	324	40	770	810	7	127	134	16	16	32	23	143	166
Other Staff	30	971	1,001	17	539	556	10	324	334	10	324	334	67	2,158	2,225	29	949	978	22	22	44	51	971	1,022
Total staff	*39*	*1,455*	*1,494*	*26*	*772*	*798*	*24*	*626*	*650*	*30*	*755*	*785*	*119*	*3,608*	*3,727*	*40*	*1,471*	*1,511*	*42*	*42*	*84*	*82*	*1,513*	*1,595*
PATIENTS & VISITORS																								
Inpatients	11	38	49	6	23	29	0	0	0	1	4	5	18	65	83	12	44	56	0	0	0	12	44	56
Outpatients	52	184	236	31	109	140	0	0	0	5	19	24	88	312	400	60	212	272	0	0	0	60	212	272
Visitors to inpatients	29	75	104	11	29	40	0	0	0	5	13	18	45	117	162	35	89	124	0	0	0	35	89	124
Visitors with outpatients	36	129	165	22	76	98	0	0	0	4	13	17	62	218	280	0	0	0	0	0	0	0	0	0
Total patients and visitors	*128*	*426*	*554*	*70*	*237*	*307*	*0*	*0*	*0*	*15*	*49*	*64*	*213*	*712*	*925*	*107*	*345*	*452*	*0*	*0*	*0*	*107*	*345*	*452*
OTHER VISITORS																								
Community Center Visitors	4	19	23	1	6	7	0	0	0	1	4	5	6	29	35	4	21	25	0	0	0	4	21	25
Faculty/Staff Visitors	6	29	35	2	10	12	0	0	0	1	6	7	9	45	54	7	32	39	0	0	0	7	32	39
Vendors/Services	5	21	26	1	3	4	0	0	0	1	5	6	7	29	36	5	22	27	0	0	0	5	22	27
Total other visitors	*15*	*69*	*84*	*4*	*19*	*23*	*0*	*0*	*0*	*3*	*15*	*18*	*22*	*103*	*125*	*16*	*75*	*91*	*0*	*0*	*0*	*16*	*75*	*91*
Subtotal Staff+Patients+Visitors	*182*	*1,950*	*2,132*	*100*	*1,028*	*1,128*	*24*	*626*	*650*	*48*	*819*	*867*	*354*	*4,423*	*4,777*	*163*	*1,891*	*2,054*	*42*	*42*	*84*	*205*	*1,933*	*2,138*
CHILDCARE																								
Childcare staff	0	5	5	0	3	3	0	2	2	0	2	2	0	12	12	0	4	4	0	0	0	0	4	4
Childcare children	30	30	60	0	0	0	0	0	0	0	0	0	30	30	60	60	60	120	0	0	0	60	60	120
Total childcare	*30*	*35*	*65*	*0*	*3*	*3*	*0*	*2*	*2*	*0*	*2*	*2*	*30*	*42*	*72*	*60*	*64*	*124*	*0*	*0*	*0*	*60*	*64*	*124*
RESIDENTIAL (551 Units)																								
Contract holders	21	2	23	12	1	13	83	6	89	2	0	2	118	9	127	31	2	33	6	6	12	37	8	45
Spouses	34	17	51	29	15	44	20	10	30	15	7	22	98	49	147	40	20	60	2	2	4	42	22	64
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	3	4	0	1	1	0	0	0	0	1	1	1	5	6	1	3	4	0	0	0	1	3	4
Vendors/Services	1	2	3	0	0	0	0	0	0	0	1	1	1	3	4	1	2	3	0	0	0	1	2	3
Total residential	*57*	*24*	*81*	*41*	*17*	*58*	*103*	*16*	*119*	*17*	*9*	*26*	*218*	*66*	*284*	*73*	*27*	*100*	*8*	*8*	*16*	*81*	*35*	*116*
GRAND TOTAL	269	2,009	2,278	141	1,048	1,189	127	644	771	65	830	895	602	4,531	5,133	296	1,982	2,278	50	50	100	346	2,032	2,378

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Mission Bay Campus
Existing 2011-2012

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	450	10%	45	405	2.23	903	10%	90	813
Fellows/Residents	0	10%	0	0	2.23	0	10%	0	0
Nurses/Nurse Practitioners	24	10%	2	22	2.23	48	10%	5	43
Postdocs/Students	784	10%	78	706	2.23	1,573	10%	157	1,416
Other Staff	2,901	10%	290	2,611	2.23	5,822	10%	582	5,240
Total staff	*4,159*	*10%*	*416*	*3,743*	*2.23*	*8,347*	*10%*	*835*	*7,512*
PATIENTS & VISITORS									
Inpatients	0	0%	0	0	2.00	0	0%	0	0
Outpatients	153	0%	0	153	2.00	306	0%	0	306
Visitors to inpatients	0	0%	0	0	2.00	0	0%	0	0
Visitors with outpatients	107	0%	0	107	2.00	214	0%	0	214
Total patients and visitors	*260*	*0%*	*0*	*260*	*2.00*	*520*	*0%*	*0*	*520*
OTHER VISITORS									
Community Center Visitors	370	0%	0	370	2.00	740	0%	0	740
Faculty/Staff Visitors	170	0%	0	170	2.00	340	0%	0	340
Vendors/Services	70	0%	0	70	2.00	140	0%	0	140
Total other visitors	*610*	*0%*	*0*	*610*	*2.00*	*1,220*	*0%*	*0*	*1,220*
Subtotal Staff+Patients+Visitors	*5,029*	*8%*	*416*	*4,613*	*2.19*	*10,087*	*8%*	*835*	*9,252*
CHILDCARE									
Childcare staff	24	10%	2	22	2.23	48	10%	5	43
Childcare children	85	0%	0	85	2.00	170	50%	85	85
Total childcare	*109*	*2%*	*2*	*107*	*2.05*	*218*	*41%*	*90*	*128*
RESIDENTIAL (Block 20-431 units)									
Contract holders	658	0%	0	658	4.50	2,961	20%	592	2,369
Spouses	166	0%	0	166	4.50	747	10%	75	672
Children	67	0%	0	67	0.00	0		0	0
Visitors	40	0%	0	40	2.00	80	0%	0	80
Vendors/Services	20	0%	0	20	2.00	40	0%	0	40
Total residential	*951*	*0%*	*0*	*951*	*4.03*	*3,828*	*17%*	*667*	*3,161*
GRAND TOTAL	6,089	7%	418	5,671	2.49	14,133	11%	1,591	12,542

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

Trip Generation
UCSF Mission Bay Campus
Existing 2011-2012

Population Group	Mode Splits for External Trips [b]																			
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	366	45%	8	1%	41	5%	0	0%	122	15%	163	20%	89	11%	24	3%	813	100%
Fellows/Residents	0	30%	0	1%	0	1%	0	0%	0	20%	0	15%	0	25%	0	8%	0	100%
Nurses/Nurse Practitioners	20	45%	0	0%	0	0%	0	0%	4	10%	0	0%	4	10%	15	35%	43	100%
Postdocs/Students	142	10%	14	1%	28	2%	0	0%	283	20%	453	32%	283	20%	212	15%	1,416	100%
Other Staff	1,572	30%	105	2%	262	5%	105	2%	1,310	25%	1,310	25%	314	6%	262	5%	5,240	100%
Total staff	*2,099*	*28%*	*127*	*2%*	*331*	*4%*	*105*	*1%*	*1,720*	*23%*	*1,926*	*26%*	*691*	*9%*	*514*	*7%*	*7,512*	*100%*
PATIENTS & VISITORS																		
Inpatients	0	40%	0	5%	0	15%	0	0%	0	30%	0	1%	0	1%	0	8%	0	100%
Outpatients	122	40%	15	5%	46	15%	0	0%	92	30%	3	1%	3	1%	24	8%	306	100%
Visitors to inpatients	0	60%	0	5%	0	10%	0	0%	0	15%	0	3%	0	1%	0	6%	0	100%
Visitors with outpatients	86	40%	11	5%	32	15%	0	0%	64	30%	2	1%	2	1%	17	8%	214	100%
Total patients and visitors	*208*	*40%*	*26*	*5%*	*78*	*15%*	*0*	*0%*	*156*	*30%*	*5*	*1%*	*5*	*1%*	*42*	*8%*	*520*	*100%*
OTHER VISITORS																		
Community Center Visitors	444	60%	37	5%	74	10%	15	2%	111	15%	0	0%	15	2%	44	6%	740	100%
Faculty/Staff Visitors	204	60%	17	5%	34	10%	7	2%	51	15%	0	0%	7	2%	20	6%	340	100%
Vendors/Services	140	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	140	100%
Total other visitors	*788*	*65%*	*54*	*4%*	*108*	*9%*	*22*	*2%*	*162*	*13%*	*0*	*0%*	*22*	*2%*	*65*	*5%*	*1,220*	*100%*
Subtotal Staff+Patients+Visitors	*3,095*	*33%*	*207*	*2%*	*517*	*6%*	*126*	*1%*	*2,038*	*22%*	*1,931*	*21%*	*718*	*8%*	*620*	*7%*	*9,252*	*100%*
CHILDCARE																		
Childcare staff	13	30%	1	2%	2	5%	1	2%	11	25%	11	25%	3	6%	2	5%	43	100%
Childcare children	0	0%	85	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	85	100%
Total childcare	*13*	*10%*	*86*	*67%*	*2*	*2%*	*1*	*1%*	*11*	*8%*	*11*	*8%*	*3*	*2%*	*2*	*2%*	*128*	*100%*
RESIDENTIAL (Block 20-431 units)																		
Contract holders	355	15%	0	0%	0	0%	0	0%	237	10%	1,540	65%	118	5%	118	5%	2,369	100%
Spouses	336	50%	0	0%	0	0%	0	0%	134	20%	101	15%	34	5%	67	10%	672	100%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	48	60%	4	5%	8	10%	2	2%	12	15%	0	0%	2	2%	5	6%	80	100%
Vendors/Services	40	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	40	100%
Total residential	*779*	*25%*	*4*	*0%*	*8*	*0%*	*2*	*0%*	*383*	*12%*	*1,641*	*52%*	*154*	*5%*	*190*	*6%*	*3,161*	*100%*
GRAND TOTAL	3,887	31%	297	2%	527	4%	129	1%	2,432	19%	3,582	29%	874	7%	813	6%	12,542	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.

Trip Generation
UCSF Mission Bay Campus
Existing 2011-2012

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				AM Peak Hour			PM Peak Hour		
													% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	415	51%	122	15%	163	20%	114	14%	813	100%	413	1.42	19%	100%	0%	12%	0%	100%
Fellows/Residents	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	18%	97%	3%	13%	5%	95%
Nurses/Nurse Practitioners	20	45%	4	10%	0	0%	20	45%	43	100%	20	1.00	20%	100%	0%	8%	0%	100%
Postdocs/Students	184	13%	283	20%	453	32%	496	35%	1,416	100%	214	3.04	18%	97%	3%	13%	5%	95%
Other Staff	2,044	39%	1,310	25%	1,310	25%	576	11%	5,240	100%	2,010	1.72	23%	100%	0%	23%	3%	97%
Total staff	*2,662*	*35%*	*1,720*	*23%*	*1,926*	*26%*	*1,205*	*16%*	*7,512*	*100%*	*2,657*	*1.77*	*24%*	*96%*	*4%*	*22%*	*7%*	*93%*
PATIENTS & VISITORS																		
Inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	12%	79%	21%	9%	22%	78%
Outpatients	184	60%	92	30%	3	1%	28	9%	306	100%	176	1.95	12%	79%	21%	9%	22%	78%
Visitors to inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	10%	77%	23%	7%	28%	72%
Visitors with outpatients	128	60%	64	30%	2	1%	19	9%	214	100%			12%	79%	21%	9%	22%	78%
Total patients and visitors	*312*	*60%*	*156*	*30%*	*5*	*1%*	*47*	*9%*	*520*	*100%*	*176*	*1.95*	*12%*	*81%*	*19%*	*9%*	*20%*	*80%*
OTHER VISITORS																		
Community Center Visitors	570	77%	111	15%	0	0%	59	8%	740	100%	556	1.09	15%	82%	18%	6%	17%	83%
Faculty/Staff Visitors	262	77%	51	15%	0	0%	27	8%	340	100%	256	1.09	15%	82%	18%	6%	17%	83%
Vendors/Services	140	100%	0	0%	0	0%	0	0%	140	100%	140	1.00	19%	84%	16%	10%	19%	81%
Total other visitors	*972*	*80%*	*162*	*13%*	*0*	*0%*	*86*	*7%*	*1,220*	*100%*	*952*	*1.08*	*15%*	*82%*	*18%*	*7%*	*19%*	*81%*
Subtotal Staff+Patients+Visitors	*3,945*	*43%*	*2,038*	*22%*	*1,931*	*21%*	*1,339*	*14%*	*9,252*	*100%*	*3,786*	*1.61*	*21%*	*93%*	*7%*	*18%*	*8%*	*92%*
CHILDCARE																		
Childcare staff	17	39%	11	25%	11	25%	5	11%	43	100%	17	1.72	23%	100%	0%	23%	3%	97%
Childcare children	85	100%	0	0%	0	0%	0	0%	85	100%	170	1.00	50%	50%	50%	50%	50%	50%
Total childcare	*102*	*79%*	*11*	*8%*	*11*	*8%*	*5*	*4%*	*128*	*100%*	*187*	*1.06*	*48%*	*52%*	*48%*	*48%*	*48%*	*52%*
RESIDENTIAL (Block 20-431 units)																		
Contract holders	355	15%	237	10%	1,540	65%	237	10%	2,369	100%	458	4.14	16%	2%	98%	17%	94%	6%
Spouses	336	50%	134	20%	101	15%	101	15%	672	100%	343	1.27	8%	21%	79%	17%	67%	34%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	62	77%	12	15%	0	0%	6	8%	80	100%	60	1.09	15%	82%	18%	6%	17%	83%
Vendors/Services	40	100%	0	0%	0	0%	0	0%	40	100%	40	1.00	19%	84%	16%	10%	19%	81%
Total residential	*793*	*25%*	*383*	*12%*	*1,641*	*52%*	*344*	*11%*	*3,161*	*100%*	*901*	*2.71*	*17%*	*24%*	*76%*	*20%*	*73%*	*27%*
GRAND TOTAL	4,840	39%	2,432	19%	3,582	29%	1,687	13%	12,542	100%	4,873	1.79	21%	80%	20%	19%	24%	76%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Parnassus Heights Transportation Surveys, 1992 and 1999, ITE Trip Generation 9th Edition (residential AM), and 2002 SF Guidelines (residential PM).

Trip Generation
UCSF Mission Bay Campus
Existing 2011-2012

Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	79	0	79	23	0	23	31	0	31	22	0	22	155	0	155	79	0	79	2	2	4	81	2	83
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	4	0	4	1	0	1	0	0	0	4	0	4	9	0	9	4	0	4	0	0	0	4	0	4
Postdocs/Students	32	1	33	49	2	51	79	2	81	87	3	90	247	8	255	37	1	38	5	5	10	42	6	48
Other Staff	470	0	470	301	0	301	301	0	301	133	0	133	1,205	0	1,205	462	0	462	20	20	40	482	20	502
Total staff	*585*	*1*	*586*	*374*	*2*	*376*	*411*	*2*	*413*	*246*	*3*	*249*	*1,616*	*8*	*1,624*	*582*	*1*	*583*	*27*	*27*	*54*	*609*	*28*	*637*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	17	5	22	9	2	11	0	0	0	3	1	4	29	8	37	17	4	21	0	0	0	17	4	21
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	12	3	15	6	2	8	0	0	0	2	0	2	20	5	25	0	0	0	0	0	0	0	0	0
Total patients and visitors	*29*	*8*	*37*	*15*	*4*	*19*	*0*	*0*	*0*	*5*	*1*	*6*	*49*	*13*	*62*	*17*	*4*	*21*	*0*	*0*	*0*	*17*	*4*	*21*
OTHER VISITORS																								
Community Center Visitors	70	15	85	14	3	17	0	0	0	7	2	9	91	20	111	68	15	83	0	0	0	68	15	83
Faculty/Staff Visitors	32	7	39	6	1	7	0	0	0	3	1	4	41	9	50	31	7	38	0	0	0	31	7	38
Vendors/Services	22	4	26	0	0	0	0	0	0	0	0	0	22	4	26	22	4	26	0	0	0	22	4	26
Total other visitors	*124*	*26*	*150*	*20*	*4*	*24*	*0*	*0*	*0*	*10*	*3*	*13*	*154*	*33*	*187*	*121*	*26*	*147*	*0*	*0*	*0*	*121*	*26*	*147*
Subtotal Staff+Patients+Visitors	*738*	*35*	*773*	*409*	*10*	*419*	*411*	*2*	*413*	*261*	*7*	*268*	*1,819*	*54*	*1,873*	*720*	*31*	*751*	*27*	*27*	*54*	*747*	*58*	*805*
CHILDCARE																								
Childcare staff	4	0	4	2	0	2	2	0	2	1	0	1	9	0	9	4	0	4	0	0	0	4	0	4
Childcare children	21	21	42	0	0	0	0	0	0	0	0	0	21	21	42	43	43	86	0	0	0	43	43	86
Total childcare	*25*	*21*	*46*	*2*	*0*	*2*	*2*	*0*	*2*	*1*	*0*	*1*	*30*	*21*	*51*	*47*	*43*	*90*	*0*	*0*	*0*	*47*	*43*	*90*
RESIDENTIAL (Block 20-431 units)																								
Contract holders	1	56	57	1	37	38	5	241	246	1	37	38	8	371	379	1	72	73	16	16	32	17	88	105
Spouses	5	21	26	2	8	10	2	6	8	2	6	8	11	41	52	5	21	26	1	1	2	6	22	28
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	8	2	10	1	0	1	0	0	0	1	0	1	10	2	12	7	2	9	0	0	0	7	2	9
Vendors/Services	6	1	7	0	0	0	0	0	0	0	0	0	6	1	7	6	1	7	0	0	0	6	1	7
Total residential	*20*	*80*	*100*	*4*	*45*	*49*	*7*	*247*	*254*	*4*	*43*	*47*	*35*	*415*	*450*	*19*	*96*	*115*	*17*	*17*	*34*	*36*	*113*	*149*
GRAND TOTAL	783	136	919	415	55	470	420	249	669	266	50	316	1,884	490	2,374	786	170	956	44	44	88	830	214	1,044

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Mission Bay Campus
Existing 2011-2012

Population Group	PM Peak Hour Person Trips (External)															Private Vehicles			PM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	0	50	50	0	15	15	0	20	20	0	14	14	0	99	99	0	50	50	1	1	2	1	51	52
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	2	2	0	0	0	0	0	0	0	2	2	0	4	4	0	2	2	0	0	0	0	2	2
Postdocs/Students	1	23	24	2	35	37	3	56	59	3	61	64	9	175	184	1	26	27	4	4	8	5	30	35
Other Staff	14	456	470	9	292	301	9	292	301	4	129	133	36	1,169	1,205	14	449	463	20	20	40	34	469	503
Total staff	*15*	*531*	*546*	*11*	*342*	*353*	*12*	*368*	*380*	*7*	*206*	*213*	*45*	*1,447*	*1,492*	*15*	*527*	*542*	*25*	*25*	*50*	*40*	*552*	*592*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	4	13	17	2	6	8	0	0	0	1	2	3	7	21	28	3	12	15	0	0	0	3	12	15
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	3	9	12	1	5	6	0	0	0	0	1	1	4	15	19	0	0	0	0	0	0	0	0	0
Total patients and visitors	*7*	*22*	*29*	*3*	*11*	*14*	*0*	*0*	*0*	*1*	*3*	*4*	*11*	*36*	*47*	*3*	*12*	*15*	*0*	*0*	*0*	*3*	*12*	*15*
OTHER VISITORS																								
Community Center Visitors	6	28	34	1	6	7	0	0	0	1	3	4	8	37	45	6	28	34	0	0	0	6	28	34
Faculty/Staff Visitors	3	13	16	1	3	4	0	0	0	0	1	1	4	17	21	3	13	16	0	0	0	3	13	16
Vendors/Services	3	11	14	0	0	0	0	0	0	0	0	0	3	11	14	3	11	14	0	0	0	3	11	14
Total other visitors	*12*	*52*	*64*	*2*	*9*	*11*	*0*	*0*	*0*	*1*	*4*	*5*	*15*	*65*	*80*	*12*	*52*	*64*	*0*	*0*	*0*	*12*	*52*	*64*
Subtotal Staff+Patients+Visitors	*34*	*605*	*639*	*16*	*362*	*378*	*12*	*368*	*380*	*9*	*213*	*222*	*71*	*1,548*	*1,619*	*30*	*591*	*621*	*25*	*25*	*50*	*55*	*616*	*671*
CHILDCARE																								
Childcare staff	0	4	4	0	2	2	0	2	2	0	1	1	0	9	9	0	4	4	0	0	0	0	4	4
Childcare children	21	21	42	0	0	0	0	0	0	0	0	0	21	21	42	43	43	86	0	0	0	43	43	86
Total childcare	*21*	*25*	*46*	*0*	*2*	*2*	*0*	*2*	*2*	*0*	*1*	*1*	*21*	*30*	*51*	*43*	*47*	*90*	*0*	*0*	*0*	*43*	*47*	*90*
RESIDENTIAL (Block 20-431 units)																								
Contract holders	57	4	61	38	2	40	246	16	262	38	2	40	379	24	403	73	5	78	17	17	34	90	22	112
Spouses	39	19	58	15	8	23	12	6	18	12	6	18	78	39	117	39	20	59	1	1	2	40	21	61
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	3	4	0	1	1	0	0	0	0	0	0	1	4	5	1	3	4	0	0	0	1	3	4
Vendors/Services	1	3	4	0	0	0	0	0	0	0	0	0	1	3	4	1	3	4	0	0	0	1	3	4
Total residential	*98*	*29*	*127*	*53*	*11*	*64*	*258*	*22*	*280*	*50*	*8*	*58*	*459*	*70*	*529*	*114*	*31*	*145*	*18*	*18*	*36*	*132*	*49*	*181*
GRAND TOTAL	153	659	812	69	375	444	270	392	662	59	222	281	551	1,648	2,199	187	669	856	43	43	86	230	712	942

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Mission Bay Campus
Year 2015 w/ Phase 1 MC

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	864	10%	86	778	2.23	1,734	10%	173	1,561
Fellows/Residents	200	10%	20	180	2.23	401	10%	40	361
Nurses/Nurse Practitioners	672	10%	67	605	2.23	1,349	10%	135	1,214
Postdocs/Students	1,051	10%	105	946	2.23	2,109	10%	211	1,898
Other Staff	4,044	10%	404	3,640	2.23	8,116	10%	812	7,305
Total staff	*6,831*	*10%*	*683*	*6,148*	*2.23*	*13,710*	*10%*	*1,371*	*12,339*
PATIENTS & VISITORS									
Inpatients	172	0%	0	172	2.00	344	0%	0	344
Outpatients	1,050	0%	0	1,050	2.00	2,100	0%	0	2,100
Visitors to inpatients	430	0%	0	430	2.00	860	0%	0	860
Visitors with outpatients	735	0%	0	735	2.00	1,470	0%	0	1,470
Total patients and visitors	*2,387*	*0%*	*0*	*2,387*	*2.00*	*4,774*	*0%*	*0*	*4,774*
OTHER VISITORS									
Community Center Visitors	370	0%	0	370	2.00	740	0%	0	740
Faculty/Staff Visitors	290	0%	0	290	2.00	580	0%	0	580
Vendors/Services	120	0%	0	120	2.00	240	0%	0	240
Total other visitors	*780*	*0%*	*0*	*780*	*2.00*	*1,560*	*0%*	*0*	*1,560*
Subtotal Staff+Patients+Visitors	*9,998*	*7%*	*683*	*9,315*	*2.15*	*20,044*	*7%*	*1,371*	*18,673*
CHILDCARE									
Childcare staff	24	10%	2	22	2.23	48	10%	5	43
Childcare children	85	0%	0	85	2.00	170	50%	85	85
Total childcare	*109*	*2%*	*2*	*107*	*2.05*	*218*	*41%*	*90*	*128*
RESIDENTIAL (Block 20-431 units)									
Contract holders	658	0%	0	658	4.50	2,961	20%	592	2,369
Spouses	166	0%	0	166	4.50	747	10%	75	672
Children	67	0%	0	67	0.00	0	0%	0	0
Visitors	40	0%	0	40	2.00	80	0%	0	80
Vendors/Services	20	0%	0	20	2.00	40	0%	0	40
Total residential	*951*	*0%*	*0*	*951*	*4.03*	*3,828*	*17%*	*667*	*3,161*
GRAND TOTAL	11,058	6%	686	10,373	2.32	24,090	9%	2,128	21,962

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

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Population Group	Mode Splits for External Trips [b]																			
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	702	45%	16	1%	78	5%	0	0%	234	15%	312	20%	172	11%	47	3%	1,561	100%
Fellows/Residents	108	30%	4	1%	4	1%	0	0%	72	20%	54	15%	90	25%	29	8%	361	100%
Nurses/Nurse Practitioners	546	45%	0	0%	0	0%	0	0%	121	10%	0	0%	121	10%	425	35%	1,214	100%
Postdocs/Students	190	10%	19	1%	38	2%	0	0%	380	20%	607	32%	380	20%	285	15%	1,898	100%
Other Staff	2,191	30%	146	2%	365	5%	146	2%	1,826	25%	1,826	25%	438	6%	365	5%	7,305	100%
Total staff	*3,738*	*30%*	*184*	*1%*	*485*	*4%*	*146*	*1%*	*2,634*	*21%*	*2,800*	*23%*	*1,201*	*10%*	*1,151*	*9%*	*12,339*	*100%*
PATIENTS & VISITORS																		
Inpatients	138	40%	17	5%	52	15%	0	0%	103	30%	3	1%	3	1%	28	8%	344	100%
Outpatients	840	40%	105	5%	315	15%	0	0%	630	30%	21	1%	21	1%	168	8%	2,100	100%
Visitors to inpatients	516	60%	43	5%	86	10%	0	0%	129	15%	26	3%	9	1%	52	6%	860	100%
Visitors with outpatients	588	40%	74	5%	221	15%	0	0%	441	30%	15	1%	15	1%	118	8%	1,470	100%
Total patients and visitors	*2,082*	*44%*	*239*	*5%*	*673*	*14%*	*0*	*0%*	*1,303*	*27%*	*65*	*1%*	*48*	*1%*	*365*	*8%*	*4,774*	*100%*
OTHER VISITORS																		
Community Center Visitors	444	60%	37	5%	74	10%	15	2%	111	15%	0	0%	15	2%	44	6%	740	100%
Faculty/Staff Visitors	348	60%	29	5%	58	10%	12	2%	87	15%	0	0%	12	2%	35	6%	580	100%
Vendors/Services	240	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	240	100%
Total other visitors	*1,032*	*66%*	*66*	*4%*	*132*	*8%*	*26*	*2%*	*198*	*13%*	*0*	*0%*	*26*	*2%*	*79*	*5%*	*1,560*	*100%*
Subtotal Staff+Patients+Visitors	*6,852*	*37%*	*489*	*3%*	*1,290*	*7%*	*172*	*1%*	*4,135*	*22%*	*2,865*	*15%*	*1,275*	*7%*	*1,594*	*9%*	*18,673*	*100%*
CHILDCARE																		
Childcare staff	13	30%	1	2%	2	5%	1	2%	11	25%	11	25%	3	6%	2	5%	43	100%
Childcare children	0	0%	85	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	85	100%
Total childcare	*13*	*10%*	*86*	*67%*	*2*	*2%*	*1*	*1%*	*11*	*8%*	*11*	*8%*	*3*	*2%*	*2*	*2%*	*128*	*100%*
RESIDENTIAL (Block 20-431 units)																		
Contract holders	355	15%	0	0%	0	0%	0	0%	237	10%	1,540	65%	118	5%	118	5%	2,369	100%
Spouses	336	50%	0	0%	0	0%	0	0%	134	20%	101	15%	34	5%	67	10%	672	100%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	48	60%	4	5%	8	10%	2	2%	12	15%	0	0%	2	2%	5	6%	80	100%
Vendors/Services	40	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	40	100%
Total residential	*779*	*25%*	*4*	*0%*	*8*	*0%*	*2*	*0%*	*383*	*12%*	*1,641*	*52%*	*154*	*5%*	*190*	*6%*	*3,161*	*100%*
GRAND TOTAL	7,644	35%	579	3%	1,300	6%	175	1%	4,529	21%	4,516	21%	1,432	7%	1,787	8%	21,962	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.

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Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
													AM Peak Hour			PM Peak Hour		
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	796	51%	234	15%	312	20%	218	14%	1,561	100%	793	1.42	19%	100%	0%	12%	0%	100%
Fellows/Residents	116	32%	72	20%	54	15%	119	33%	361	100%	121	1.43	18%	97%	3%	13%	5%	95%
Nurses/Nurse Practitioners	546	45%	121	10%	0	0%	546	45%	1,214	100%	546	1.00	20%	100%	0%	8%	0%	100%
Postdocs/Students	247	13%	380	20%	607	32%	664	35%	1,898	100%	287	3.04	18%	97%	3%	13%	5%	95%
Other Staff	2,849	39%	1,826	25%	1,826	25%	804	11%	7,305	100%	2,803	1.72	23%	100%	0%	23%	3%	97%
Total staff	*4,553*	*37%*	*2,634*	*21%*	*2,800*	*23%*	*2,352*	*19%*	*12,339*	*100%*	*4,550*	*1.66*	*23%*	*96%*	*4%*	*20%*	*6%*	*94%*
PATIENTS & VISITORS																		
Inpatients	206	60%	103	30%	3	1%	31	9%	344	100%	198	1.15	12%	79%	21%	9%	22%	78%
Outpatients	1,260	60%	630	30%	21	1%	189	9%	2,100	100%	1,209	1.95	12%	79%	21%	9%	22%	78%
Visitors to inpatients	645	75%	129	15%	26	3%	60	7%	860	100%	647	1.10	10%	77%	23%	7%	28%	72%
Visitors with outpatients	882	60%	441	30%	15	1%	132	9%	1,470	100%			12%	79%	21%	9%	22%	78%
Total patients and visitors	*2,993*	*63%*	*1,303*	*27%*	*65*	*1%*	*412*	*9%*	*4,774*	*100%*	*2,054*	*1.61*	*11%*	*79%*	*21%*	*8%*	*24%*	*76%*
OTHER VISITORS																		
Community Center Visitors	570	77%	111	15%	0	0%	59	8%	740	100%	556	1.09	15%	82%	18%	6%	17%	83%
Faculty/Staff Visitors	447	77%	87	15%	0	0%	46	8%	580	100%	436	1.09	15%	82%	18%	6%	17%	83%
Vendors/Services	240	100%	0	0%	0	0%	0	0%	240	100%	240	1.00	19%	84%	16%	10%	19%	81%
Total other visitors	*1,256*	*81%*	*198*	*13%*	*0*	*0%*	*106*	*7%*	*1,560*	*100%*	*1,233*	*1.07*	*16%*	*82%*	*18%*	*7%*	*18%*	*82%*
Subtotal Staff+Patients+Visitors	*8,803*	*47%*	*4,135*	*22%*	*2,865*	*15%*	*2,870*	*15%*	*18,673*	*100%*	*7,837*	*1.55*	*19%*	*91%*	*9%*	*15%*	*10%*	*90%*
CHILDCARE																		
Childcare staff	17	39%	11	25%	11	25%	5	11%	43	100%	17	1.72	23%	100%	0%	23%	3%	97%
Childcare children	85	100%	0	0%	0	0%	0	0%	85	100%	170	1.00	50%	50%	50%	50%	50%	50%
Total childcare	*102*	*79%*	*11*	*8%*	*11*	*8%*	*5*	*4%*	*128*	*100%*	*187*	*1.06*	*48%*	*52%*	*48%*	*48%*	*48%*	*52%*
RESIDENTIAL (Block 20-431 units)																		
Contract holders	355	15%	237	10%	1,540	65%	237	10%	2,369	100%	458	4.14	16%	2%	98%	17%	94%	6%
Spouses	336	50%	134	20%	101	15%	101	15%	672	100%	343	1.27	8%	21%	79%	17%	67%	34%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	62	77%	12	15%	0	0%	6	8%	80	100%	60	1.09	15%	82%	18%	6%	17%	83%
Vendors/Services	40	100%	0	0%	0	0%	0	0%	40	100%	40	1.00	19%	84%	16%	10%	19%	81%
Total residential	*793*	*25%*	*383*	*12%*	*1,641*	*52%*	*344*	*11%*	*3,161*	*100%*	*901*	*2.71*	*17%*	*24%*	*76%*	*20%*	*73%*	*27%*
GRAND TOTAL	9,698	44%	4,529	21%	4,516	21%	3,219	15%	21,962	100%	8,924	1.66	19%	84%	16%	16%	20%	80%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Parnassus Heights Transportation Surveys, 1992 and 1999, ITE Trip Generation 9th Edition (residential AM), and 2002 SF Guidelines (residential PM).

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Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	151	0	151	44	0	44	59	0	59	42	0	42	296	0	296	151	0	151	4	4	8	155	4	159
Fellows/Residents	20	1	21	13	0	13	9	0	9	21	1	22	63	2	65	21	1	22	1	1	2	22	2	24
Nurses/Nurse Practitioners	109	0	109	24	0	24	0	0	0	109	0	109	242	0	242	109	0	109	0	0	0	109	0	109
Postdocs/Students	43	1	44	66	2	68	106	3	109	116	4	120	331	10	341	50	2	52	7	7	14	57	9	66
Other Staff	655	0	655	420	0	420	420	0	420	185	0	185	1,680	0	1,680	645	0	645	28	28	56	673	28	701
Total staff	*978*	*2*	*980*	*567*	*2*	*569*	*594*	*3*	*597*	*473*	*5*	*478*	*2,612*	*12*	*2,624*	*976*	*3*	*979*	*40*	*40*	*80*	*1,016*	*43*	*1,059*
PATIENTS & VISITORS																								
Inpatients	20	5	25	10	3	13	0	0	0	3	1	4	33	9	42	19	5	24	0	0	0	19	5	24
Outpatients	119	32	151	60	16	76	2	1	3	18	5	23	199	54	253	115	30	145	0	0	0	115	30	145
Visitors to inpatients	50	15	65	10	3	13	2	1	3	5	1	6	67	20	87	50	15	65	0	0	0	50	15	65
Visitors with outpatients	84	22	106	42	11	53	1	0	1	13	3	16	140	36	176	0	0	0	0	0	0	0	0	0
Total patients and visitors	*273*	*74*	*347*	*122*	*33*	*155*	*5*	*2*	*7*	*39*	*10*	*49*	*439*	*119*	*558*	*184*	*50*	*234*	*0*	*0*	*0*	*184*	*50*	*234*
OTHER VISITORS																								
Community Center Visitors	70	15	85	14	3	17	0	0	0	7	2	9	91	20	111	68	15	83	0	0	0	68	15	83
Faculty/Staff Visitors	55	12	67	11	2	13	0	0	0	6	1	7	72	15	87	54	12	66	0	0	0	54	12	66
Vendors/Services	38	7	45	0	0	0	0	0	0	0	0	0	38	7	45	38	7	45	0	0	0	38	7	45
Total other visitors	*163*	*34*	*197*	*25*	*5*	*30*	*0*	*0*	*0*	*13*	*3*	*16*	*201*	*42*	*243*	*160*	*34*	*194*	*0*	*0*	*0*	*160*	*34*	*194*
Subtotal Staff+Patients+Visitors	*1,414*	*110*	*1,524*	*714*	*40*	*754*	*599*	*5*	*604*	*525*	*18*	*543*	*3,252*	*173*	*3,425*	*1,320*	*87*	*1,407*	*40*	*40*	*80*	*1,360*	*127*	*1,487*
CHILDCARE																								
Childcare staff	4	0	4	2	0	2	2	0	2	1	0	1	9	0	9	4	0	4	0	0	0	4	0	4
Childcare children	21	21	42	0	0	0	0	0	0	0	0	0	21	21	42	43	43	86	0	0	0	43	43	86
Total childcare	*25*	*21*	*46*	*2*	*0*	*2*	*2*	*0*	*2*	*1*	*0*	*1*	*30*	*21*	*51*	*47*	*43*	*90*	*0*	*0*	*0*	*47*	*43*	*90*
RESIDENTIAL (Block 20-431 units)																								
Contract holders	1	56	57	1	37	38	5	241	246	1	37	38	8	371	379	1	72	73	16	16	32	17	88	105
Spouses	5	21	26	2	8	10	2	6	8	2	6	8	11	41	52	5	21	26	1	1	2	6	22	28
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	8	2	10	1	0	1	0	0	0	1	0	1	10	2	12	7	2	9	0	0	0	7	2	9
Vendors/Services	6	1	7	0	0	0	0	0	0	0	0	0	6	1	7	6	1	7	0	0	0	6	1	7
Total residential	*20*	*80*	*100*	*4*	*45*	*49*	*7*	*247*	*254*	*4*	*43*	*47*	*35*	*415*	*450*	*19*	*96*	*115*	*17*	*17*	*34*	*36*	*113*	*149*
GRAND TOTAL	1,459	211	1,670	720	85	805	608	252	860	530	61	591	3,317	609	3,926	1,386	226	1,612	57	57	114	1,443	283	1,726

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

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Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour Private Vehicles			PM Peak Hour UCSF Shuttle			PM Peak Hour Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	0	96	96	0	28	28	0	37	37	0	26	26	0	187	187	0	95	95	2	2	4	2	97	99
Fellows/Residents	1	14	15	0	9	9	0	7	7	1	15	16	2	45	47	1	15	16	0	0	0	1	15	16
Nurses/Nurse Practitioners	0	44	44	0	10	10	0	0	0	0	44	44	0	98	98	0	44	44	0	0	0	0	44	44
Postdocs/Students	2	30	32	2	47	49	4	75	79	4	82	86	12	234	246	2	35	37	5	5	10	7	40	47
Other Staff	20	636	656	13	407	420	13	407	420	6	179	185	52	1,629	1,681	19	625	644	28	28	56	47	653	700
Total staff	*23*	*820*	*843*	*15*	*501*	*516*	*17*	*526*	*543*	*11*	*346*	*357*	*66*	*2,193*	*2,259*	*22*	*814*	*836*	*35*	*35*	*70*	*57*	*849*	*906*
PATIENTS & VISITORS																								
Inpatients	4	14	18	2	7	9	0	0	0	1	2	3	7	23	30	4	14	18	0	0	0	4	14	18
Outpatients	25	88	113	12	44	56	0	1	1	4	13	17	41	146	187	24	85	109	0	0	0	24	85	109
Visitors to inpatients	13	33	46	3	7	10	1	1	2	1	3	4	18	44	62	13	33	46	0	0	0	13	33	46
Visitors with outpatients	17	62	79	9	31	40	0	1	1	3	9	12	29	103	132	0	0	0	0	0	0	0	0	0
Total patients and visitors	*59*	*197*	*256*	*26*	*89*	*115*	*1*	*3*	*4*	*9*	*27*	*36*	*95*	*316*	*411*	*41*	*132*	*173*	*0*	*0*	*0*	*41*	*132*	*173*
OTHER VISITORS																								
Community Center Visitors	6	28	34	1	6	7	0	0	0	1	3	4	8	37	45	6	28	34	0	0	0	6	28	34
Faculty/Staff Visitors	5	22	27	1	4	5	0	0	0	0	2	2	6	28	34	4	22	26	0	0	0	4	22	26
Vendors/Services	5	19	24	0	0	0	0	0	0	0	0	0	5	19	24	5	19	24	0	0	0	5	19	24
Total other visitors	*16*	*69*	*85*	*2*	*10*	*12*	*0*	*0*	*0*	*1*	*5*	*6*	*19*	*84*	*103*	*15*	*69*	*84*	*0*	*0*	*0*	*15*	*69*	*84*
Subtotal Staff+Patients+Visitors	*98*	*1,086*	*1,184*	*43*	*600*	*643*	*18*	*529*	*547*	*21*	*378*	*399*	*180*	*2,593*	*2,773*	*78*	*1,015*	*1,093*	*35*	*35*	*70*	*113*	*1,050*	*1,163*
CHILDCARE																								
Childcare staff	0	4	4	0	2	2	0	2	2	0	1	1	0	9	9	0	4	4	0	0	0	0	4	4
Childcare children	21	21	42	0	0	0	0	0	0	0	0	0	21	21	42	43	43	86	0	0	0	43	43	86
Total childcare	*21*	*25*	*46*	*0*	*2*	*2*	*0*	*2*	*2*	*0*	*1*	*1*	*21*	*30*	*51*	*43*	*47*	*90*	*0*	*0*	*0*	*43*	*47*	*90*
RESIDENTIAL (Block 20-431 units)																								
Contract holders	57	4	61	38	2	40	246	16	262	38	2	40	379	24	403	73	5	78	17	17	34	90	22	112
Spouses	39	19	58	15	8	23	12	6	18	12	6	18	78	39	117	39	20	59	1	1	2	40	21	61
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	3	4	0	1	1	0	0	0	0	0	0	1	4	5	1	3	4	0	0	0	1	3	4
Vendors/Services	1	3	4	0	0	0	0	0	0	0	0	0	1	3	4	1	3	4	0	0	0	1	3	4
Total residential	*98*	*29*	*127*	*53*	*11*	*64*	*258*	*22*	*280*	*50*	*8*	*58*	*459*	*70*	*529*	*114*	*31*	*145*	*18*	*18*	*36*	*132*	*49*	*181*
GRAND TOTAL	217	1,140	1,357	96	613	709	276	553	829	71	387	458	660	2,693	3,353	235	1,093	1,328	53	53	106	288	1,146	1,434

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

UCSF Mission Bay Trip Gen
Year 2040 w/ Phase 2 MC
+ Blocks 33-34 Scenario 1 - All R&D

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	1,957	10%	196	1,761	2.23	3,928	10%	393	3,535
Fellows/Residents	200	10%	20	180	2.23	401	10%	40	361
Nurses/Nurse Practitioners	1,295	10%	130	1,166	2.23	2,599	10%	260	2,339
Postdocs/Students	1,193	10%	119	1,074	2.23	2,394	10%	239	2,155
Other Staff	11,241	10%	1,124	10,117	2.23	22,561	10%	2,256	20,305
Total staff	*15,886*	*10%*	*1,589*	*14,297*	*2.23*	*31,883*	*10%*	*3,188*	*28,695*
PATIENTS & VISITORS									
Inpatients	495	0%	0	495	2.00	990	0%	0	990
Outpatients	1,912	0%	0	1,912	2.00	3,824	0%	0	3,824
Visitors to inpatients	1,238	0%	0	1,238	2.00	2,476	0%	0	2,476
Visitors with outpatients	1,338	0%	0	1,338	2.00	2,676	0%	0	2,676
Total patients and visitors	*4,983*	*0%*	*0*	*4,983*	*2.00*	*9,966*	*0%*	*0*	*9,966*
OTHER VISITORS									
Community Center Visitors	370	0%	0	370	2.00	740	0%	0	740
Faculty/Staff Visitors	730	0%	0	730	2.00	1,460	0%	0	1,460
Vendors/Services	290	0%	0	290	2.00	580	0%	0	580
Total other visitors	*1,390*	*0%*	*0*	*1,390*	*2.00*	*2,780*	*0%*	*0*	*2,780*
Subtotal Staff+Patients+Visitors	*22,259*	*7%*	*1,589*	*20,670*	*2.16*	*44,629*	*7%*	*3,188*	*41,441*
CHILDCARE									
Childcare staff	50	10%	5	45	2.23	100	10%	10	90
Childcare children	200	0%	0	200	2.00	400	50%	200	200
Total childcare	*250*	*2%*	*5*	*245*	*2.04*	*500*	*42%*	*210*	*290*
RESIDENTIAL (Blocks 15+20-954 units)									
Contract holders	1,326	0%	0	1,326	4.50	5,967	50%	2,984	2,984
Spouses	330	0%	0	330	4.50	1,485	10%	149	1,337
Children	148	0%	0	148	0.00	0	0%	0	0
Visitors	80	0%	0	80	2.00	160	0%	0	160
Vendors/Services	40	0%	0	40	2.00	80	0%	0	80
Total residential	*1,924*	*0%*	*0*	*1,924*	*4.00*	*7,692*	*41%*	*3,132*	*4,560*
GRAND TOTAL	24,433	7%	1,594	22,839	2.31	52,822	12%	6,530	46,291

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

UCSF Mission Bay Trip Ger
Year 2040 w/ Phase 2 MC
+ Blocks 33-34 Scenario 1 -

Population Group	Mode Splits for External Trips [b]																	
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	1,591	45%	35	1%	177	5%	0	0%	530	15%	707	20%	389	11%	106	3%	3,535	100%
Fellows/Residents	108	30%	4	1%	4	1%	0	0%	72	20%	54	15%	90	25%	29	8%	361	100%
Nurses/Nurse Practitioners	1,053	45%	0	0%	0	0%	0	0%	234	10%	0	0%	234	10%	819	35%	2,339	100%
Postdocs/Students	215	10%	22	1%	43	2%	0	0%	431	20%	690	32%	431	20%	323	15%	2,155	100%
Other Staff	6,091	30%	406	2%	1,015	5%	406	2%	5,076	25%	5,076	25%	1,218	6%	1,015	5%	20,305	100%
Total staff	*9,059*	*32%*	*467*	*2%*	*1,239*	*4%*	*406*	*1%*	*6,344*	*22%*	*6,527*	*23%*	*2,362*	*8%*	*2,292*	*8%*	*28,695*	*100%*
PATIENTS & VISITORS																		
Inpatients	396	40%	50	5%	149	15%	0	0%	297	30%	10	1%	10	1%	79	8%	990	100%
Outpatients	1,530	40%	191	5%	574	15%	0	0%	1,147	30%	38	1%	38	1%	306	8%	3,824	100%
Visitors to inpatients	1,486	60%	124	5%	248	10%	0	0%	371	15%	74	3%	25	1%	149	6%	2,476	100%
Visitors with outpatients	1,070	40%	134	5%	401	15%	0	0%	803	30%	27	1%	27	1%	214	8%	2,676	100%
Total patients and visitors	*4,482*	*45%*	*498*	*5%*	*1,371*	*14%*	*0*	*0%*	*2,618*	*26%*	*149*	*1%*	*100*	*1%*	*748*	*8%*	*9,966*	*100%*
OTHER VISITORS																		
Community Center Visitors	444	60%	37	5%	74	10%	15	2%	111	15%	0	0%	15	2%	44	6%	740	100%
Faculty/Staff Visitors	876	60%	73	5%	146	10%	29	2%	219	15%	0	0%	29	2%	88	6%	1,460	100%
Vendors/Services	580	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	580	100%
Total other visitors	*1,900*	*68%*	*110*	*4%*	*220*	*8%*	*44*	*2%*	*330*	*12%*	*0*	*0%*	*44*	*2%*	*132*	*5%*	*2,780*	*100%*
Subtotal Staff+Patients+Visitors	*15,440*	*37%*	*1,075*	*3%*	*2,830*	*7%*	*450*	*1%*	*9,292*	*22%*	*6,676*	*16%*	*2,506*	*6%*	*3,172*	*8%*	*41,441*	*100%*
CHILDCARE																		
Childcare staff	27	30%	2	2%	5	5%	2	2%	23	25%	23	25%	5	6%	5	5%	90	100%
Childcare children	0	0%	200	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	200	100%
Total childcare	*27*	*9%*	*202*	*70%*	*5*	*2%*	*2*	*1%*	*23*	*8%*	*23*	*8%*	*5*	*2%*	*5*	*2%*	*290*	*100%*
RESIDENTIAL (Blocks 15+20-954 u																		
Contract holders	448	15%	0	0%	0	0%	0	0%	298	10%	1,939	65%	149	5%	149	5%	2,984	100%
Spouses	668	50%	0	0%	0	0%	0	0%	267	20%	200	15%	67	5%	134	10%	1,337	100%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	96	60%	8	5%	16	10%	3	2%	24	15%	0	0%	3	2%	10	6%	160	100%
Vendors/Services	80	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	80	100%
Total residential	*1,292*	*28%*	*8*	*0%*	*16*	*0%*	*3*	*0%*	*590*	*13%*	*2,140*	*47%*	*219*	*5%*	*292*	*6%*	*4,560*	*100%*
GRAND TOTAL	16,759	36%	1,285	3%	2,850	6%	455	1%	9,904	21%	8,838	19%	2,731	6%	3,469	7%	46,291	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.

UCSF Mission Bay Trip Gen
Year 2040 w/ Phase 2 MC
+ Blocks 33-34 Scenario 1 -

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
													AM Peak Hour			PM Peak Hour		
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	1,803	51%	530	15%	707	20%	495	14%	3,535	100%	1,797	1.42	19%	100%	0%	12%	0%	100%
Fellows/Residents	116	32%	72	20%	54	15%	119	33%	361	100%	121	1.43	18%	97%	3%	13%	5%	95%
Nurses/Nurse Practitioners	1,053	45%	234	10%	0	0%	1,053	45%	2,339	100%	1,053	1.00	20%	100%	0%	8%	0%	100%
Postdocs/Students	280	13%	431	20%	690	32%	754	35%	2,155	100%	326	3.04	18%	97%	3%	13%	5%	95%
Other Staff	7,919	39%	5,076	25%	5,076	25%	2,234	11%	20,305	100%	7,790	1.72	23%	100%	0%	23%	3%	97%
Total staff	*11,170*	*39%*	*6,344*	*22%*	*6,527*	*23%*	*4,654*	*16%*	*28,695*	*100%*	*11,087*	*1.64*	*24%*	*96%*	*4%*	*21%*	*6%*	*94%*
PATIENTS & VISITORS																		
Inpatients	594	60%	297	30%	10	1%	89	9%	990	100%	570	1.15	12%	79%	21%	9%	22%	78%
Outpatients	2,294	60%	1,147	30%	38	1%	344	9%	3,824	100%	2,201	1.95	12%	79%	21%	9%	22%	78%
Visitors to inpatients	1,857	75%	371	15%	74	3%	173	7%	2,476	100%	1,862	1.10	10%	77%	23%	7%	28%	72%
Visitors with outpatients	1,606	60%	803	30%	27	1%	241	9%	2,676	100%			12%	79%	21%	9%	22%	78%
Total patients and visitors	*6,351*	*64%*	*2,618*	*26%*	*149*	*1%*	*847*	*9%*	*9,966*	*100%*	*4,633*	*1.51*	*11%*	*78%*	*22%*	*8%*	*24%*	*76%*
OTHER VISITORS																		
Community Center Visitors	570	77%	111	15%	0	0%	59	8%	740	100%	556	1.09	15%	82%	18%	6%	17%	83%
Faculty/Staff Visitors	1,124	77%	219	15%	0	0%	117	8%	1,460	100%	1,098	1.09	15%	82%	18%	6%	17%	83%
Vendors/Services	580	100%	0	0%	0	0%	0	0%	580	100%	580	1.00	19%	84%	16%	10%	19%	81%
Total other visitors	*2,274*	*82%*	*330*	*12%*	*0*	*0%*	*176*	*6%*	*2,780*	*100%*	*2,234*	*1.07*	*16%*	*82%*	*18%*	*7%*	*18%*	*82%*
Subtotal Staff+Patients+Visitors	*19,795*	*48%*	*9,292*	*22%*	*6,676*	*16%*	*5,678*	*14%*	*41,441*	*100%*	*17,954*	*1.53*	*19%*	*92%*	*8%*	*16%*	*9%*	*91%*
CHILDCARE																		
Childcare staff	35	39%	23	25%	23	25%	10	11%	90	100%	35	1.72	23%	100%	0%	23%	3%	97%
Childcare children	200	100%	0	0%	0	0%	0	0%	200	100%	400	1.00	50%	50%	50%	50%	50%	50%
Total childcare	*235*	*81%*	*23*	*8%*	*23*	*8%*	*10*	*3%*	*290*	*100%*	*435*	*1.06*	*48%*	*52%*	*48%*	*48%*	*48%*	*52%*
RESIDENTIAL (Blocks 15+20-954 u																		
Contract holders	448	15%	298	10%	1,939	65%	298	10%	2,984	100%	577	4.14	16%	2%	98%	17%	94%	6%
Spouses	668	50%	267	20%	200	15%	200	15%	1,337	100%	682	1.27	8%	21%	79%	17%	67%	34%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	123	77%	24	15%	0	0%	13	8%	160	100%	120	1.09	15%	82%	18%	6%	17%	83%
Vendors/Services	80	100%	0	0%	0	0%	0	0%	80	100%	80	1.00	19%	84%	16%	10%	19%	81%
Total residential	*1,319*	*29%*	*590*	*13%*	*2,140*	*47%*	*512*	*11%*	*4,560*	*100%*	*1,459*	*2.38*	*15%*	*28%*	*72%*	*19%*	*71%*	*29%*
GRAND TOTAL	21,349	46%	9,904	21%	8,838	19%	6,199	13%	46,291	100%	19,848	1.59	20%	86%	14%	17%	17%	83%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Parnassus Heights Transportation Surveys, 1992 and 1999, ITE Trip Generation 9th Edition (residential AM), and 2002 SF Guidelines (residential PM).

UCSF Mission Bay Trip Gen
Year 2040 w/ Phase 2 MC
+ Blocks 33-34 Scenario 1 -

Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	343	0	343	101	0	101	134	0	134	94	0	94	672	0	672	341	0	341	9	9	18	350	9	359
Fellows/Residents	20	1	21	13	0	13	9	0	9	21	1	22	63	2	65	21	1	22	1	1	2	22	2	24
Nurses/Nurse Practitioners	211	0	211	47	0	47	0	0	0	211	0	211	469	0	469	211	0	211	0	0	0	211	0	211
Postdocs/Students	49	2	51	75	2	77	120	4	124	132	4	136	376	12	388	57	2	59	8	8	16	65	10	75
Other Staff	1,821	0	1,821	1,168	0	1,168	1,168	0	1,168	514	0	514	4,671	0	4,671	1,792	0	1,792	78	78	156	1,870	78	1,948
Total staff	*2,444*	*3*	*2,447*	*1,404*	*2*	*1,406*	*1,431*	*4*	*1,435*	*972*	*5*	*977*	*6,251*	*14*	*6,265*	*2,422*	*3*	*2,425*	*96*	*96*	*192*	*2,518*	*99*	*2,617*
PATIENTS & VISITORS																								
Inpatients	56	15	71	28	7	35	1	0	1	8	2	10	93	24	117	54	14	68	0	0	0	54	14	68
Outpatients	218	58	276	109	29	138	4	1	5	33	9	42	364	97	461	209	55	264	0	0	0	209	55	264
Visitors to inpatients	143	43	186	29	9	38	6	2	8	13	4	17	191	58	249	143	43	186	0	0	0	143	43	186
Visitors with outpatients	152	40	192	76	20	96	3	1	4	23	6	29	254	67	321	0	0	0	0	0	0	0	0	0
Total patients and visitors	*569*	*156*	*725*	*242*	*65*	*307*	*14*	*4*	*18*	*77*	*21*	*98*	*902*	*246*	*1,148*	*406*	*112*	*518*	*0*	*0*	*0*	*406*	*112*	*518*
OTHER VISITORS																								
Community Center Visitors	70	15	85	14	3	17	0	0	0	7	2	9	91	20	111	68	15	83	0	0	0	68	15	83
Faculty/Staff Visitors	138	30	168	27	6	33	0	0	0	14	3	17	179	39	218	135	30	165	0	0	0	135	30	165
Vendors/Services	93	18	111	0	0	0	0	0	0	0	0	0	93	18	111	93	18	111	0	0	0	93	18	111
Total other visitors	*301*	*63*	*364*	*41*	*9*	*50*	*0*	*0*	*0*	*21*	*5*	*26*	*363*	*77*	*440*	*296*	*63*	*359*	*0*	*0*	*0*	*296*	*63*	*359*
Subtotal Staff+Patients+Visitors	*3,314*	*222*	*3,536*	*1,687*	*76*	*1,763*	*1,445*	*8*	*1,453*	*1,070*	*31*	*1,101*	*7,516*	*337*	*7,853*	*3,124*	*178*	*3,302*	*96*	*96*	*192*	*3,220*	*274*	*3,494*
CHILDCARE																								
Childcare staff	8	0	8	5	0	5	5	0	5	2	0	2	20	0	20	8	0	8	0	0	0	8	0	8
Childcare children	50	50	100	0	0	0	0	0	0	0	0	0	50	50	100	100	100	200	0	0	0	100	100	200
Total childcare	*58*	*50*	*108*	*5*	*0*	*5*	*5*	*0*	*5*	*2*	*0*	*2*	*70*	*50*	*120*	*108*	*100*	*208*	*0*	*0*	*0*	*108*	*100*	*208*
RESIDENTIAL (Blocks 15+20-954 u																								
Contract holders	1	70	71	1	47	48	6	304	310	1	47	48	9	468	477	2	90	92	21	21	42	23	111	134
Spouses	11	41	52	4	16	20	3	12	15	3	12	15	21	81	102	11	42	53	1	1	2	12	43	55
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	15	3	18	3	1	4	0	0	0	2	0	2	20	4	24	15	3	18	0	0	0	15	3	18
Vendors/Services	13	2	15	0	0	0	0	0	0	0	0	0	13	2	15	13	2	15	0	0	0	13	2	15
Total residential	*40*	*116*	*156*	*8*	*64*	*72*	*9*	*316*	*325*	*6*	*59*	*65*	*63*	*555*	*618*	*41*	*137*	*178*	*22*	*22*	*44*	*63*	*159*	*222*
GRAND TOTAL	3,412	388	3,800	1,700	140	1,840	1,459	324	1,783	1,078	90	1,168	7,649	942	8,591	3,273	415	3,688	118	118	236	3,391	533	3,924

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

UCSF Mission Bay Trip Gen
Year 2040 w/ Phase 2 MC
+ Blocks 33-34 Scenario 1 -

Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour Private Vehicles			PM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	0	216	216	0	64	64	0	85	85	0	59	59	0	424	424	0	216	216	6	6	12	6	222	228
Fellows/Residents	1	14	15	0	9	9	0	7	7	1	15	16	2	45	47	1	15	16	0	0	0	1	15	16
Nurses/Nurse Practitioners	0	84	84	0	19	19	0	0	0	0	84	84	0	187	187	0	84	84	0	0	0	0	84	84
Postdocs/Students	2	35	37	3	53	56	4	85	89	5	93	98	14	266	280	2	40	42	6	6	12	8	46	54
Other Staff	55	1,767	1,822	35	1,132	1,167	35	1,132	1,167	15	498	513	140	4,529	4,669	54	1,738	1,792	78	78	156	132	1,816	1,948
Total staff	*58*	*2,116*	*2,174*	*38*	*1,277*	*1,315*	*39*	*1,309*	*1,348*	*21*	*749*	*770*	*156*	*5,451*	*5,607*	*57*	*2,093*	*2,150*	*90*	*90*	*180*	*147*	*2,183*	*2,330*
PATIENTS & VISITORS																								
Inpatients	12	42	54	6	21	27	0	1	1	2	6	8	20	70	90	11	40	51	0	0	0	11	40	51
Outpatients	45	161	206	23	81	104	1	3	4	7	24	31	76	269	345	44	155	199	0	0	0	44	155	199
Visitors to inpatients	36	94	130	7	19	26	1	4	5	3	9	12	47	126	173	36	94	130	0	0	0	36	94	130
Visitors with outpatients	32	113	145	16	56	72	1	2	3	5	17	22	54	188	242	0	0	0	0	0	0	0	0	0
Total patients and visitors	*125*	*410*	*535*	*52*	*177*	*229*	*3*	*10*	*13*	*17*	*56*	*73*	*197*	*653*	*850*	*91*	*289*	*380*	*0*	*0*	*0*	*91*	*289*	*380*
OTHER VISITORS																								
Community Center Visitors	6	28	34	1	6	7	0	0	0	1	3	4	8	37	45	6	28	34	0	0	0	6	28	34
Faculty/Staff Visitors	11	56	67	2	11	13	0	0	0	1	6	7	14	73	87	11	55	66	0	0	0	11	55	66
Vendors/Services	11	47	58	0	0	0	0	0	0	0	0	0	11	47	58	11	47	58	0	0	0	11	47	58
Total other visitors	*28*	*131*	*159*	*3*	*17*	*20*	*0*	*0*	*0*	*2*	*9*	*11*	*33*	*157*	*190*	*28*	*130*	*158*	*0*	*0*	*0*	*28*	*130*	*158*
Subtotal Staff+Patients+Visitors	*211*	*2,657*	*2,868*	*93*	*1,471*	*1,564*	*42*	*1,319*	*1,361*	*40*	*814*	*854*	*386*	*6,261*	*6,647*	*176*	*2,512*	*2,688*	*90*	*90*	*180*	*266*	*2,602*	*2,868*
CHILDCARE																								
Childcare staff	0	8	8	0	5	5	0	5	5	0	2	2	0	20	20	0	8	8	0	0	0	0	8	8
Childcare children	50	50	100	0	0	0	0	0	0	0	0	0	50	50	100	100	100	200	0	0	0	100	100	200
Total childcare	*50*	*58*	*108*	*0*	*5*	*5*	*0*	*5*	*5*	*0*	*2*	*2*	*50*	*70*	*120*	*100*	*108*	*208*	*0*	*0*	*0*	*100*	*108*	*208*
RESIDENTIAL (Blocks 15+20-954 u																								
Contract holders	72	5	77	48	3	51	310	20	330	48	3	51	478	31	509	92	6	98	22	22	44	114	28	142
Spouses	77	39	116	31	15	46	23	12	35	23	12	35	154	78	232	78	40	118	2	2	4	80	42	122
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	6	7	0	1	1	0	0	0	0	1	1	1	8	9	1	6	7	0	0	0	1	6	7
Vendors/Services	2	6	8	0	0	0	0	0	0	0	0	0	2	6	8	2	6	8	0	0	0	2	6	8
Total residential	*152*	*56*	*208*	*79*	*19*	*98*	*333*	*32*	*365*	*71*	*16*	*87*	*635*	*123*	*758*	*173*	*58*	*231*	*24*	*24*	*48*	*197*	*82*	*279*
GRAND TOTAL	413	2,771	3,184	172	1,495	1,667	375	1,356	1,731	111	832	943	1,071	6,454	7,525	449	2,678	3,127	114	114	228	563	2,792	3,355

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

2.6 MOUNT ZION – EXISTING

Trip Generation
UCSF Mt. Zion Campus
Existing 2011-2012

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	237	10%	24	213	2.23	476	0%	0	476
Fellows/Residents	50	10%	5	45	2.23	100	0%	0	100
Nurses/Nurse Practitioners	274	10%	27	247	2.23	550	0%	0	550
Postdocs/Students	215	10%	22	194	2.23	432	0%	0	432
Other Staff	1,274	10%	127	1,147	2.23	2,557	0%	0	2,557
Total staff	*2,050*	*10%*	*205*	*1,845*	*2.23*	*4,114*	*0%*	*0*	*4,114*
PATIENTS & VISITORS									
Inpatients	48	0%	0	48	2.00	96	0%	0	96
Outpatients	1,358	0%	0	1,358	2.00	2,716	0%	0	2,716
Visitors to inpatients	120	0%	0	120	2.00	240	0%	0	240
Visitors with outpatients	951	0%	0	951	2.00	1,902	0%	0	1,902
Total patients and visitors	*2,477*	*0%*	*0*	*2,477*	*2.00*	*4,954*	*0%*	*0*	*4,954*
OTHER VISITORS									
Community Center Visitors		0%	0	0	2.00	0	0%	0	0
Faculty/Staff Visitors	90	0%	0	90	2.00	180	0%	0	180
Vendors/Services	40	0%	0	40	2.00	80	0%	0	80
Total other visitors	*130*	*0%*	*0*	*130*	*2.00*	*260*	*0%*	*0*	*260*
Subtotal Staff+Patients+Visitors	*4,657*	*4%*	*205*	*4,452*	*2.10*	*9,328*	*0%*	*0*	*9,328*
CHILDCARE									
Childcare staff			0	0		0		0	0
Childcare children			0	0		0		0	0
Total childcare	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
RESIDENTIAL									
Contract holders			0	0		0		0	0
Spouses			0	0		0		0	0
Children			0	0		0		0	0
Visitors	0		0	0		0		0	0
Vendors/Services	0		0	0		0		0	0
Total residential	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
GRAND TOTAL	4,657	4%	205	4,452	2.10	9,328	0%	0	9,328

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

Trip Generation
UCSF Mt. Zion Campus
Existing 2011-2012

Population Group	Mode Splits for External Trips [b]																			
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	333	70%	5	1%	10	2%	10	2%	24	5%	24	5%	24	5%	48	10%	476	100%
Fellows/Residents	45	45%	0	0%	0	0%	0	0%	15	15%	40	40%	0	0%	0	0%	100	100%
Nurses/Nurse Practitioners	275	50%	16	3%	27	5%	0	0%	137	25%	55	10%	22	4%	16	3%	550	100%
Postdocs/Students	108	25%	0	0%	0	0%	0	0%	108	25%	151	35%	65	15%	0	0%	432	100%
Other Staff	767	30%	128	5%	128	5%	128	5%	767	30%	256	10%	128	5%	256	10%	2,557	100%
Total staff	*1,528*	*37%*	*149*	*4%*	*165*	*4%*	*137*	*3%*	*1,051*	*26%*	*526*	*13%*	*238*	*6%*	*320*	*8%*	*4,114*	*100%*
PATIENTS & VISITORS																		
Inpatients	38	40%	7	7%	16	17%	5	5%	24	25%	0	0%	1	1%	5	5%	96	100%
Outpatients	1,086	40%	190	7%	462	17%	136	5%	679	25%	0	0%	27	1%	136	5%	2,716	100%
Visitors to inpatients	120	50%	12	5%	24	10%	10	4%	60	25%	0	0%	2	1%	12	5%	240	100%
Visitors with outpatients	761	40%	133	7%	323	17%	95	5%	476	25%	0	0%	19	1%	95	5%	1,902	100%
Total patients and visitors	*2,006*	*40%*	*342*	*7%*	*825*	*17%*	*245*	*5%*	*1,239*	*25%*	*0*	*0%*	*50*	*1%*	*248*	*5%*	*4,954*	*100%*
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Faculty/Staff Visitors	90	50%	9	5%	25	14%	7	4%	36	20%	0	0%	4	2%	9	5%	180	100%
Vendors/Services	80	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	80	100%
Total other visitors	*170*	*65%*	*9*	*3%*	*25*	*10%*	*7*	*3%*	*36*	*14%*	*0*	*0%*	*4*	*1%*	*9*	*3%*	*260*	*100%*
Subtotal Staff+Patients+Visitors	*3,704*	*40%*	*500*	*5%*	*1,015*	*11%*	*390*	*4%*	*2,326*	*25%*	*526*	*6%*	*291*	*3%*	*576*	*6%*	*9,328*	*100%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
GRAND TOTAL	3,704	40%	500	5%	1,015	11%	390	4%	2,326	25%	526	6%	291	3%	576	6%	9,328	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Mt Zion Campus.

Trip Generation
UCSF Mt. Zion Campus
Existing 2011-2012

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
													AM Peak Hour			PM Peak Hour		
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	357	75%	24	5%	24	5%	71	15%	476	100%	350	1.10	17%	100%	0%	11%	33%	67%
Fellows/Residents	45	45%	15	15%	40	40%	0	0%	100	100%	48	1.78	6%	100%	0%	12%	50%	50%
Nurses/Nurse Practitioners	319	58%	137	25%	55	10%	38	7%	550	100%	325	1.20	33%	100%	0%	17%	0%	100%
Postdocs/Students	108	25%	108	25%	151	35%	65	15%	432	100%	118	2.20	6%	100%	0%	12%	50%	50%
Other Staff	1,151	45%	767	30%	256	10%	384	15%	2,557	100%	1,117	1.37	19%	100%	0%	19%	0%	100%
Total staff	*1,979*	*48%*	*1,051*	*26%*	*526*	*13%*	*558*	*14%*	*4,114*	*100%*	*1,957*	*1.36*	*20%*	*99%*	*1%*	*17%*	*8%*	*92%*
PATIENTS & VISITORS																		
Inpatients	66	69%	24	25%	0	0%	6	6%	96	100%	60	1.21	22%	60%	40%	6%	50%	50%
Outpatients	1,874	69%	679	25%	0	0%	163	6%	2,716	100%	1,711	2.05	22%	60%	40%	6%	50%	50%
Visitors to inpatients	166	69%	60	25%	0	0%	14	6%	240	100%	157	1.13	9%	60%	40%	12%	50%	50%
Visitors with outpatients	1,312	69%	476	25%	0	0%	114	6%	1,902	100%			22%	60%	40%	6%	50%	50%
Total patients and visitors	*3,418*	*69%*	*1,239*	*25%*	*0*	*0%*	*297*	*6%*	*4,954*	*100%*	*1,929*	*1.95*	*21%*	*60%*	*40%*	*6%*	*50%*	*50%*
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Faculty/Staff Visitors	131	73%	36	20%	0	0%	13	7%	180	100%	121	1.16	12%	68%	32%	10%	25%	75%
Vendors/Services	80	100%	0	0%	0	0%	0	0%	80	100%	80	1.00	6%	40%	60%	9%	33%	67%
Total other visitors	*211*	*81%*	*36*	*14%*	*0*	*0%*	*13*	*5%*	*260*	*100%*	*201*	*1.09*	*10%*	*60%*	*40%*	*9%*	*26%*	*74%*
Subtotal Staff+Patients+Visitors	*5,609*	*60%*	*2,326*	*25%*	*526*	*6%*	*868*	*9%*	*9,328*	*100%*	*4,087*	*1.62*	*20%*	*79%*	*21%*	*12%*	*20%*	*80%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
GRAND TOTAL	5,609	60%	2,326	25%	526	6%	868	9%	9,328	100%	4,087	1.62	20%	79%	21%	12%	20%	80%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Mt Zion Transportation Surveys, 1992 and 1999.

Trip Generation
UCSF Mt. Zion Campus
Existing 2011-2012

Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	61	0	61	4	0	4	4	0	4	12	0	12	81	0	81	59	0	59	0	0	0	59	0	59
Fellows/Residents	3	0	3	1	0	1	2	0	2	0	0	0	6	0	6	3	0	3	0	0	0	3	0	3
Nurses/Nurse Practitioners	105	0	105	45	0	45	18	0	18	13	0	13	181	0	181	107	0	107	1	1	2	108	1	109
Postdocs/Students	6	0	6	6	0	6	9	0	9	4	0	4	25	0	25	7	0	7	1	1	2	8	1	9
Other Staff	219	0	219	146	0	146	49	0	49	73	0	73	487	0	487	212	0	212	3	3	6	215	3	218
Total staff	*394*	*0*	*394*	*202*	*0*	*202*	*82*	*0*	*82*	*102*	*0*	*102*	*780*	*0*	*780*	*388*	*0*	*388*	*5*	*5*	*10*	*393*	*5*	*398*
PATIENTS & VISITORS																								
Inpatients	9	6	15	3	2	5	0	0	0	1	1	2	13	9	22	8	5	13	0	0	0	8	5	13
Outpatients	247	165	412	90	60	150	0	0	0	22	14	36	359	239	598	226	151	377	0	0	0	226	151	377
Visitors to inpatients	9	6	15	3	2	5	0	0	0	1	1	2	13	9	22	8	6	14	0	0	0	8	6	14
Visitors with outpatients	173	115	288	63	42	105	0	0	0	15	10	25	251	167	418	0	0	0	0	0	0	0	0	0
Total patients and visitors	*438*	*292*	*730*	*159*	*106*	*265*	*0*	*0*	*0*	*39*	*26*	*65*	*636*	*424*	*1,060*	*242*	*162*	*404*	*0*	*0*	*0*	*242*	*162*	*404*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	11	5	16	3	1	4	0	0	0	1	0	1	15	6	21	10	5	15	0	0	0	10	5	15
Vendors/Services	2	3	5	0	0	0	0	0	0	0	0	0	2	3	5	2	3	5	0	0	0	2	3	5
Total other visitors	*13*	*8*	*21*	*3*	*1*	*4*	*0*	*0*	*0*	*1*	*0*	*1*	*17*	*9*	*26*	*12*	*8*	*20*	*0*	*0*	*0*	*12*	*8*	*20*
Subtotal Staff+Patients+Visitors	*845*	*300*	*1,145*	*364*	*107*	*471*	*82*	*0*	*82*	*142*	*26*	*168*	*1,433*	*433*	*1,866*	*642*	*170*	*812*	*5*	*5*	*10*	*647*	*175*	*822*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	845	300	1,145	364	107	471	82	0	82	142	26	168	1,433	433	1,866	642	170	812	5	5	10	647	175	822

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Mt. Zion Campus
Existing 2011-2012

Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour Private Vehicles			PM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	13	26	39	1	2	3	1	2	3	3	5	8	18	35	53	13	26	39	0	0	0	13	26	39
Fellows/Residents	3	3	6	1	1	2	2	2	4	0	0	0	6	6	12	3	3	6	0	0	0	3	3	6
Nurses/Nurse Practitioners	0	54	54	0	23	23	0	9	9	0	7	7	0	93	93	0	55	55	1	1	2	1	56	57
Postdocs/Students	6	6	12	6	6	12	9	9	18	4	4	8	25	25	50	7	7	14	1	1	2	8	8	16
Other Staff	0	219	219	0	146	146	0	49	49	0	73	73	0	487	487	0	212	212	3	3	6	3	215	218
Total staff	*22*	*308*	*330*	*8*	*178*	*186*	*12*	*71*	*83*	*7*	*89*	*96*	*49*	*646*	*695*	*23*	*303*	*326*	*5*	*5*	*10*	*28*	*308*	*336*
PATIENTS & VISITORS																								
Inpatients	2	2	4	1	1	2	0	0	0	0	0	0	3	3	6	2	2	4	0	0	0	2	2	4
Outpatients	56	56	112	20	20	40	0	0	0	5	5	10	81	81	162	51	51	102	0	0	0	51	51	102
Visitors to inpatients	10	10	20	4	4	8	0	0	0	1	1	2	15	15	30	9	9	18	0	0	0	9	9	18
Visitors with outpatients	39	39	78	14	14	28	0	0	0	3	3	6	56	56	112	0	0	0	0	0	0	0	0	0
Total patients and visitors	*107*	*107*	*214*	*39*	*39*	*78*	*0*	*0*	*0*	*9*	*9*	*18*	*155*	*155*	*310*	*62*	*62*	*124*	*0*	*0*	*0*	*62*	*62*	*124*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	3	10	13	1	3	4	0	0	0	0	1	1	4	14	18	3	9	12	0	0	0	3	9	12
Vendors/Services	2	5	7	0	0	0	0	0	0	0	0	0	2	5	7	2	5	7	0	0	0	2	5	7
Total other visitors	*5*	*15*	*20*	*1*	*3*	*4*	*0*	*0*	*0*	*0*	*1*	*1*	*6*	*19*	*25*	*5*	*14*	*19*	*0*	*0*	*0*	*5*	*14*	*19*
Subtotal Staff+Patients+Visitors	*134*	*430*	*564*	*48*	*220*	*268*	*12*	*71*	*83*	*16*	*99*	*115*	*210*	*820*	*1,030*	*90*	*379*	*469*	*5*	*5*	*10*	*95*	*384*	*479*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	134	430	564	48	220	268	12	71	83	16	99	115	210	820	1,030	90	379	469	5	5	10	95	384	479

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

2.7 MOUNT ZION – 2035

Trip Generation
UCSF Mt. Zion Campus
Year 2035

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	320	10%	32	288	2.23	642	0%	0	642
Fellows/Residents	50	10%	5	45	2.23	100	0%	0	100
Nurses/Nurse Practitioners	387	10%	39	348	2.23	777	0%	0	777
Postdocs/Students	277	10%	28	249	2.23	556	0%	0	556
Other Staff	1,727	10%	173	1,554	2.23	3,466	0%	0	3,466
Total staff	*2,761*	*10%*	*276*	*2,485*	*2.23*	*5,541*	*0%*	*0*	*5,541*
PATIENTS & VISITORS									
Inpatients	0	0%	0	0	2.00	0	0%	0	0
Outpatients	1,962	0%	0	1,962	2.00	3,924	0%	0	3,924
Visitors to inpatients	0	0%	0	0	2.00	0	0%	0	0
Visitors with outpatients	1,373	0%	0	1,373	2.00	2,746	0%	0	2,746
Total patients and visitors	*3,335*	*0%*	*0*	*3,335*	*2.00*	*6,670*	*0%*	*0*	*6,670*
OTHER VISITORS									
Community Center Visitors		0%	0	0	2.00	0	0%	0	0
Faculty/Staff Visitors	120	0%	0	120	2.00	240	0%	0	240
Vendors/Services	50	0%	0	50	2.00	100	0%	0	100
Total other visitors	*170*	*0%*	*0*	*170*	*2.00*	*340*	*0%*	*0*	*340*
Subtotal Staff+Patients+Visitors	*6,266*	*4%*	*276*	*5,990*	*2.10*	*12,551*	*0%*	*0*	*12,551*
CHILDCARE									
Childcare staff			0	0		0		0	0
Childcare children			0	0		0		0	0
Total childcare	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
RESIDENTIAL									
Contract holders			0	0		0		0	0
Spouses			0	0		0		0	0
Children			0	0		0		0	0
Visitors	0		0	0		0		0	0
Vendors/Services	0		0	0		0		0	0
Total residential	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
GRAND TOTAL	6,266	4%	276	5,990	2.10	12,551	0%	0	12,551

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

Trip Generation
UCSF Mt. Zion Campus
Year 2035

Population Group	Mode Splits for External Trips [b]																	
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	450	70%	6	1%	13	2%	13	2%	32	5%	32	5%	32	5%	64	10%	642	100%
Fellows/Residents	45	45%	0	0%	0	0%	0	0%	15	15%	40	40%	0	0%	0	0%	100	100%
Nurses/Nurse Practitioners	388	50%	23	3%	39	5%	0	0%	194	25%	78	10%	31	4%	23	3%	777	100%
Postdocs/Students	139	25%	0	0%	0	0%	0	0%	139	25%	195	35%	83	15%	0	0%	556	100%
Other Staff	1,040	30%	173	5%	173	5%	173	5%	1,040	30%	347	10%	173	5%	347	10%	3,466	100%
Total staff	*2,062*	*37%*	*203*	*4%*	*225*	*4%*	*186*	*3%*	*1,420*	*26%*	*691*	*12%*	*320*	*6%*	*434*	*8%*	*5,541*	*100%*
PATIENTS & VISITORS																		
Inpatients	0	40%	0	7%	0	17%	0	5%	0	25%	0	0%	0	1%	0	5%	0	100%
Outpatients	1,570	40%	275	7%	667	17%	196	5%	981	25%	0	0%	39	1%	196	5%	3,924	100%
Visitors to inpatients	0	50%	0	5%	0	10%	0	4%	0	25%	0	0%	0	1%	0	5%	0	100%
Visitors with outpatients	1,098	40%	192	7%	467	17%	137	5%	687	25%	0	0%	27	1%	137	5%	2,746	100%
Total patients and visitors	*2,668*	*40%*	*467*	*7%*	*1,134*	*17%*	*334*	*5%*	*1,668*	*25%*	*0*	*0%*	*67*	*1%*	*334*	*5%*	*6,670*	*100%*
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Faculty/Staff Visitors	120	50%	12	5%	34	14%	10	4%	48	20%	0	0%	5	2%	12	5%	240	100%
Vendors/Services	100	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	100	100%
Total other visitors	*220*	*65%*	*12*	*4%*	*34*	*10%*	*10*	*3%*	*48*	*14%*	*0*	*0%*	*5*	*1%*	*12*	*4%*	*340*	*100%*
Subtotal Staff+Patients+Visitors	*4,950*	*39%*	*682*	*5%*	*1,392*	*11%*	*529*	*4%*	*3,136*	*25%*	*691*	*6%*	*391*	*3%*	*780*	*6%*	*12,551*	*100%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
GRAND TOTAL	4,950	39%	682	5%	1,392	11%	529	4%	3,136	25%	691	6%	391	3%	780	6%	12,551	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Mt Zion Campus.

Trip Generation
UCSF Mt. Zion Campus
Year 2035

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
													AM Peak Hour			PM Peak Hour		
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	482	75%	32	5%	32	5%	96	15%	642	100%	472	1.10	17%	100%	0%	11%	33%	67%
Fellows/Residents	45	45%	15	15%	40	40%	0	0%	100	100%	48	1.78	6%	100%	0%	12%	50%	50%
Nurses/Nurse Practitioners	450	58%	194	25%	78	10%	54	7%	777	100%	460	1.20	33%	100%	0%	17%	0%	100%
Postdocs/Students	139	25%	139	25%	195	35%	83	15%	556	100%	152	2.20	6%	100%	0%	12%	50%	50%
Other Staff	1,560	45%	1,040	30%	347	10%	520	15%	3,466	100%	1,514	1.37	19%	100%	0%	19%	0%	100%
Total staff	*2,676*	*48%*	*1,420*	*26%*	*691*	*12%*	*754*	*14%*	*5,541*	*100%*	*2,645*	*1.35*	*21%*	*99%*	*1%*	*17%*	*8%*	*92%*
PATIENTS & VISITORS																		
Inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	22%	60%	40%	6%	50%	50%
Outpatients	2,708	69%	981	25%	0	0%	235	6%	3,924	100%	2,472	2.05	22%	60%	40%	6%	50%	50%
Visitors to inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	9%	60%	40%	12%	50%	50%
Visitors with outpatients	1,895	69%	687	25%	0	0%	165	6%	2,746	100%			22%	60%	40%	6%	50%	50%
Total patients and visitors	*4,602*	*69%*	*1,668*	*25%*	*0*	*0%*	*400*	*6%*	*6,670*	*100%*	*2,472*	*2.05*	*22%*	*60%*	*40%*	*6%*	*50%*	*50%*
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Faculty/Staff Visitors	175	73%	48	20%	0	0%	17	7%	240	100%	162	1.16	12%	68%	32%	10%	25%	75%
Vendors/Services	100	100%	0	0%	0	0%	0	0%	100	100%	100	1.00	6%	40%	60%	9%	33%	67%
Total other visitors	*275*	*81%*	*48*	*14%*	*0*	*0%*	*17*	*5%*	*340*	*100%*	*262*	*1.10*	*10%*	*60%*	*40%*	*10%*	*28%*	*72%*
Subtotal Staff+Patients+Visitors	*7,554*	*60%*	*3,136*	*25%*	*691*	*6%*	*1,171*	*9%*	*12,551*	*100%*	*5,379*	*1.66*	*21%*	*79%*	*21%*	*12%*	*19%*	*81%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
GRAND TOTAL	7,554	60%	3,136	25%	691	6%	1,171	9%	12,551	100%	5,379	1.66	21%	79%	21%	12%	19%	81%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Mt Zion Transportation Surveys, 1992 and 1999.

Trip Generation
UCSF Mt. Zion Campus
Year 2035

Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	82	0	82	5	0	5	5	0	5	16	0	16	108	0	108	80	0	80	0	0	0	80	0	80
Fellows/Residents	3	0	3	1	0	1	2	0	2	0	0	0	6	0	6	3	0	3	0	0	0	3	0	3
Nurses/Nurse Practitioners	149	0	149	64	0	64	26	0	26	18	0	18	257	0	257	152	0	152	2	2	4	154	2	156
Postdocs/Students	8	0	8	8	0	8	12	0	12	5	0	5	33	0	33	9	0	9	1	1	2	10	1	11
Other Staff	296	0	296	198	0	198	66	0	66	99	0	99	659	0	659	288	0	288	4	4	8	292	4	296
Total staff	*538*	*0*	*538*	*276*	*0*	*276*	*111*	*0*	*111*	*138*	*0*	*138*	*1,063*	*0*	*1,063*	*532*	*0*	*532*	*7*	*7*	*14*	*539*	*7*	*546*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	357	238	595	129	86	215	0	0	0	31	21	52	517	345	862	326	218	544	0	0	0	326	218	544
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	250	167	417	91	60	151	0	0	0	22	14	36	363	241	604	0	0	0	0	0	0	0	0	0
Total patients and visitors	*607*	*405*	*1,012*	*220*	*146*	*366*	*0*	*0*	*0*	*53*	*35*	*88*	*880*	*586*	*1,466*	*326*	*218*	*544*	*0*	*0*	*0*	*326*	*218*	*544*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	14	7	21	4	2	6	0	0	0	1	1	2	19	10	29	13	6	19	0	0	0	13	6	19
Vendors/Services	2	4	6	0	0	0	0	0	0	0	0	0	2	4	6	2	4	6	0	0	0	2	4	6
Total other visitors	*16*	*11*	*27*	*4*	*2*	*6*	*0*	*0*	*0*	*1*	*1*	*2*	*21*	*14*	*35*	*15*	*10*	*25*	*0*	*0*	*0*	*15*	*10*	*25*
Subtotal Staff+Patients+Visitors	*1,161*	*416*	*1,577*	*500*	*148*	*648*	*111*	*0*	*111*	*192*	*36*	*228*	*1,964*	*600*	*2,564*	*873*	*228*	*1,101*	*7*	*7*	*14*	*880*	*235*	*1,115*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	1,161	416	1,577	500	148	648	111	0	111	192	36	228	1,964	600	2,564	873	228	1,101	7	7	14	880	235	1,115

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Mt. Zion Campus
Year 2035

Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour Private Vehicles			PM Peak Hour UCSF Shuttle			PM Peak Hour Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	17	35	52	1	2	3	1	2	3	3	7	10	22	46	68	17	35	52	0	0	0	17	35	52
Fellows/Residents	3	3	6	1	1	2	2	2	4	0	0	0	6	6	12	3	3	6	0	0	0	3	3	6
Nurses/Nurse Practitioners	0	77	77	0	33	33	0	13	13	0	9	9	0	132	132	0	78	78	1	1	2	1	79	80
Postdocs/Students	8	8	16	8	8	16	12	12	24	5	5	10	33	33	66	9	9	18	2	2	4	11	11	22
Other Staff	0	296	296	0	198	198	0	66	66	0	99	99	0	659	659	0	288	288	4	4	8	4	292	296
Total staff	*28*	*419*	*447*	*10*	*242*	*252*	*15*	*95*	*110*	*8*	*120*	*128*	*61*	*876*	*937*	*29*	*413*	*442*	*7*	*7*	*14*	*36*	*420*	*456*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	81	81	162	29	29	58	0	0	0	7	7	14	117	117	234	74	74	148	0	0	0	74	74	148
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	57	57	114	21	21	42	0	0	0	5	5	10	83	83	166	0	0	0	0	0	0	0	0	0
Total patients and visitors	*138*	*138*	*276*	*50*	*50*	*100*	*0*	*0*	*0*	*12*	*12*	*24*	*200*	*200*	*400*	*74*	*74*	*148*	*0*	*0*	*0*	*74*	*74*	*148*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	4	13	17	1	4	5	0	0	0	0	1	1	5	18	23	4	12	16	0	0	0	4	12	16
Vendors/Services	3	6	9	0	0	0	0	0	0	0	0	0	3	6	9	3	6	9	0	0	0	3	6	9
Total other visitors	*7*	*19*	*26*	*1*	*4*	*5*	*0*	*0*	*0*	*0*	*1*	*1*	*8*	*24*	*32*	*7*	*18*	*25*	*0*	*0*	*0*	*7*	*18*	*25*
Subtotal Staff+Patients+Visitors	*173*	*576*	*749*	*61*	*296*	*357*	*15*	*95*	*110*	*20*	*133*	*153*	*269*	*1,100*	*1,369*	*110*	*505*	*615*	*7*	*7*	*14*	*117*	*512*	*629*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	173	576	749	61	296	357	15	95	110	20	133	153	269	1,100	1,369	110	505	615	7	7	14	117	512	629

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

2.8 MISSION CENTER – EXISTING

Trip Generation
UCSF Mission Center
Existing 2011-2012

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	72	10%	7	65	2.23	145	0%	0	145
Fellows/Residents		10%	0	0	2.23	0	0%	0	0
Nurses/Nurse Practitioners		10%	0	0	2.23	0	0%	0	0
Postdocs/Students	16	10%	2	14	2.23	32	0%	0	32
Other Staff	712	10%	71	641	2.23	1,429	0%	0	1,429
Total staff	*800*	*10%*	*80*	*720*	*2.23*	*1,606*	*0%*	*0*	*1,606*
PATIENTS & VISITORS									
Inpatients		0%	0	0	2.00	0	0%	0	0
Outpatients		0%	0	0	2.00	0	0%	0	0
Visitors to inpatients	0	0%	0	0	2.00	0	0%	0	0
Visitors with outpatients	0	0%	0	0	2.00	0	0%	0	0
Total patients and visitors	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
OTHER VISITORS									
Community Center Visitors		0%	0	0	2.00	0	0%	0	0
Faculty/Staff Visitors	40	0%	0	40	2.00	80	0%	0	80
Vendors/Services	20	0%	0	20	2.00	40	0%	0	40
Total other visitors	*60*	*0%*	*0*	*60*	*2.00*	*120*	*0%*	*0*	*120*
Subtotal Staff+Patients+Visitors	*860*	*9%*	*80*	*780*	*2.21*	*1,726*	*0%*	*0*	*1,726*
CHILDCARE									
Childcare staff			0	0		0		0	0
Childcare children			0	0		0		0	0
Total childcare	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
RESIDENTIAL									
Contract holders			0	0		0		0	0
Spouses			0	0		0		0	0
Children			0	0		0		0	0
Visitors	0		0	0		0		0	0
Vendors/Services	0		0	0		0		0	0
Total residential	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
GRAND TOTAL	860	9%	80	780	2.21	1,726	0%	0	1,726

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

Trip Generation
UCSF Mission Center
Existing 2011-2012

Population Group	Mode Splits for External Trips [b]																	
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	123	85%	0	0%	0	0%	0	0%	7	5%	7	5%	3	2%	4	3%	145	100%
Fellows/Residents	0	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	100%
Nurses/Nurse Practitioners	0	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	100%
Postdocs/Students	8	25%	0	0%	0	0%	0	0%	8	25%	13	40%	3	10%	0	0%	32	100%
Other Staff	557	39%	16	1%	63	4%	16	1%	424	30%	196	14%	102	7%	55	4%	1,429	100%
Total staff	*688*	*43%*	*16*	*1%*	*63*	*4%*	*16*	*1%*	*439*	*27%*	*216*	*13%*	*108*	*7%*	*59*	*4%*	*1,606*	*100%*
PATIENTS & VISITORS																		
Inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Outpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors to inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors with outpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total patients and visitors	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Faculty/Staff Visitors	80	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	80	100%
Vendors/Services	40	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	40	100%
Total other visitors	*120*	*100%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*120*	*100%*
Subtotal Staff+Patients+Visitors	*808*	*47%*	*16*	*1%*	*63*	*4%*	*16*	*1%*	*439*	*25%*	*216*	*13%*	*108*	*6%*	*59*	*3%*	*1,726*	*100%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
GRAND TOTAL	808	47%	16	1%	63	4%	16	1%	439	25%	216	13%	108	6%	59	3%	1,726	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Center Campus.

Trip Generation
UCSF Mission Center
Existing 2011-2012

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				AM Peak Hour			PM Peak Hour		
													% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	123	85%	7	5%	7	5%	7	5%	145	100%	123	1.05	19%	100%	0%	12%	0%	100%
Fellows/Residents	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	18%	97%	3%	13%	5%	95%
Nurses/Nurse Practitioners	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	20%	100%	0%	8%	0%	100%
Postdocs/Students	8	25%	8	25%	13	40%	3	10%	32	100%	9	2.35	18%	97%	3%	13%	5%	95%
Other Staff	652	46%	424	30%	196	14%	157	11%	1,429	100%	635	1.36	23%	100%	0%	23%	3%	97%
Total staff	*783*	*49%*	*439*	*27%*	*216*	*13%*	*167*	*10%*	*1,606*	*100%*	*767*	*1.32*	*23%*	*98%*	*2%*	*22%*	*4%*	*96%*
PATIENTS & VISITORS																		
Inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Outpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors to inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors with outpatients	0	0%	0	0%	0	0%	0	0%	0	0%								
Total patients and visitors	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Faculty/Staff Visitors	80	100%	0	0%	0	0%	0	0%	80	100%	80	1.00	15%	82%	18%	6%	17%	83%
Vendors/Services	40	100%	0	0%	0	0%	0	0%	40	100%	40	1.00	19%	84%	16%	10%	19%	81%
Total other visitors	*120*	*100%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*120*	*100%*	*120*	*1.00*	*16%*	*84%*	*16%*	*8%*	*22%*	*78%*
Subtotal Staff+Patients+Visitors	*903*	*52%*	*439*	*25%*	*216*	*13%*	*167*	*10%*	*1,726*	*100%*	*887*	*1.28*	*22%*	*97%*	*3%*	*20%*	*5%*	*95%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
GRAND TOTAL	903	52%	439	25%	216	13%	167	10%	1,726	100%	887	1.28	22%	97%	3%	20%	5%	95%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Parnassus Heights Transportation Surveys, 1992 and 1999.

Trip Generation
UCSF Mission Center
Existing 2011-2012

Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	23	0	23	1	0	1	1	0	1	1	0	1	26	0	26	23	0	23	0	0	0	23	0	23
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	1	0	1	1	0	1	2	0	2	1	0	1	5	0	5	2	0	2	0	0	0	2	0	2
Other Staff	150	0	150	98	0	98	45	0	45	36	0	36	329	0	329	146	0	146	3	3	6	149	3	152
Total staff	*174*	*0*	*174*	*100*	*0*	*100*	*48*	*0*	*48*	*38*	*0*	*38*	*360*	*0*	*360*	*171*	*0*	*171*	*3*	*3*	*6*	*174*	*3*	*177*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	10	2	12	0	0	0	0	0	0	0	0	0	10	2	12	10	2	12	0	0	0	10	2	12
Vendors/Services	6	1	7	0	0	0	0	0	0	0	0	0	6	1	7	6	1	7	0	0	0	6	1	7
Total other visitors	*16*	*3*	*19*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*16*	*3*	*19*	*16*	*3*	*19*	*0*	*0*	*0*	*16*	*3*	*19*
Subtotal Staff+Patients+Visitors	*190*	*3*	*193*	*100*	*0*	*100*	*48*	*0*	*48*	*38*	*0*	*38*	*376*	*3*	*379*	*187*	*3*	*190*	*3*	*3*	*6*	*190*	*6*	*196*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	190	3	193	100	0	100	48	0	48	38	0	38	376	3	379	187	3	190	3	3	6	190	6	196

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Mission Center
Existing 2011-2012

Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour Private Vehicles			PM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	0	15	15	0	1	1	0	1	1	0	1	1	0	18	18	0	15	15	0	0	0	0	15	15
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	1	1	0	1	1	0	2	2	0	0	0	0	4	4	0	1	1	0	0	0	0	1	1
Other Staff	4	145	149	3	95	98	1	44	45	1	35	36	9	319	328	4	142	146	3	3	6	7	145	152
Total staff	*4*	*161*	*165*	*3*	*97*	*100*	*1*	*47*	*48*	*1*	*36*	*37*	*9*	*341*	*350*	*4*	*158*	*162*	*3*	*3*	*6*	*7*	*161*	*168*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	4	5	0	0	0	0	0	0	0	0	0	1	4	5	1	4	5	0	0	0	1	4	5
Vendors/Services	1	3	4	0	0	0	0	0	0	0	0	0	1	3	4	1	3	4	0	0	0	1	3	4
Total other visitors	*2*	*7*	*9*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*	*7*	*9*	*2*	*7*	*9*	*0*	*0*	*0*	*2*	*7*	*9*
Subtotal Staff+Patients+Visitors	*6*	*168*	*174*	*3*	*97*	*100*	*1*	*47*	*48*	*1*	*36*	*37*	*11*	*348*	*359*	*6*	*165*	*171*	*3*	*3*	*6*	*9*	*168*	*177*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	6	168	174	3	97	100	1	47	48	1	36	37	11	348	359	6	165	171	3	3	6	9	168	177

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

2.9 MISSION CENTER – 2035

Trip Generation
UCSF Mission Center
Year 2035

Population Group	User Population	Absentees		Average Weekday Staff and Visitor Population	Daily Person Trip Rate [a]	Daily Person Trips	Proportion of Internal UCSF Campus Trips		Net External Daily Person Trips
STAFF									
Faculty/Physicians	117	10%	12	105	2.23	235	0%	0	235
Fellows/Residents		10%	0	0	2.23	0	0%	0	0
Nurses/Nurse Practitioners		10%	0	0	2.23	0	0%	0	0
Postdocs/Students	26	10%	3	23	2.23	52	0%	0	52
Other Staff	1,157	10%	116	1,041	2.23	2,322	0%	0	2,322
Total staff	*1,300*	*10%*	*130*	*1,170*	*2.23*	*2,609*	*0%*	*0*	*2,609*
PATIENTS & VISITORS									
Inpatients		0%	0	0	2.00	0	0%	0	0
Outpatients		0%	0	0	2.00	0	0%	0	0
Visitors to inpatients	0	0%	0	0	2.00	0	0%	0	0
Visitors with outpatients	0	0%	0	0	2.00	0	0%	0	0
Total patients and visitors	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
OTHER VISITORS									
Community Center Visitors		0%	0	0	2.00	0	0%	0	0
Faculty/Staff Visitors	60	0%	0	60	2.00	120	0%	0	120
Vendors/Services	30	0%	0	30	2.00	60	0%	0	60
Total other visitors	*90*	*0%*	*0*	*90*	*2.00*	*180*	*0%*	*0*	*180*
Subtotal Staff+Patients+Visitors	*1,390*	*9%*	*130*	*1,260*	*2.21*	*2,789*	*0%*	*0*	*2,789*
CHILDCARE									
Childcare staff			0	0		0		0	0
Childcare children			0	0		0		0	0
Total childcare	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
RESIDENTIAL									
Contract holders			0	0		0		0	0
Spouses			0	0		0		0	0
Children			0	0		0		0	0
Visitors	0		0	0		0		0	0
Vendors/Services	0		0	0		0		0	0
Total residential	*0*	*0%*	*0*	*0*	*0.00*	*0*	*0%*	*0*	*0*
GRAND TOTAL	1,390	9%	130	1,260	2.21	2,789	0%	0	2,789

[a] Daily trip rates from the UCSF LRDP FEIR (1997) and UCSF LRDP Amendment #1 FSEIR (2002).

Trip Generation
UCSF Mission Center
Year 2035

Population Group	Mode Splits for External Trips [b]															
	Drive Alone		Drop-off/Taxi		Carpool		Vanpool		Public Transit		UCSF Shuttle		Bike/ Motorcycle		Walk		Total All Modes	
STAFF																		
Faculty/Physicians	200	85%	0	0%	0	0%	0	0%	12	5%	12	5%	5	2%	7	3%	235	100%
Fellows/Residents	0	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	100%
Nurses/Nurse Practitioners	0	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	100%
Postdocs/Students	13	25%	0	0%	0	0%	0	0%	13	25%	21	40%	5	10%	0	0%	52	100%
Other Staff	906	39%	26	1%	102	4%	26	1%	689	30%	319	14%	166	7%	89	4%	2,322	100%
Total staff	*1,119*	*43%*	*26*	*1%*	*102*	*4%*	*26*	*1%*	*714*	*27%*	*352*	*13%*	*176*	*7%*	*96*	*4%*	*2,609*	*100%*
PATIENTS & VISITORS																		
Inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Outpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors to inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors with outpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total patients and visitors	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Faculty/Staff Visitors	120	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	120	100%
Vendors/Services	60	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	60	100%
Total other visitors	*180*	*100%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*180*	*100%*
Subtotal Staff+Patients+Visitors	*1,299*	*47%*	*26*	*1%*	*102*	*4%*	*26*	*1%*	*714*	*26%*	*352*	*13%*	*176*	*6%*	*96*	*3%*	*2,789*	*100%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
GRAND TOTAL	1,299	47%	26	1%	102	4%	26	1%	714	26%	352	13%	176	6%	96	3%	2,789	100%

[b] Mode of travel based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Center Campus.

Trip Generation
UCSF Mission Center
Year 2035

Population Group	Weekday Person Trips by Mode (External)										Daily Vehicle Trips [d]	Avg. Veh. Occup. (persons per vehicle)	Peak Hour Percentages [e]					
	Auto		Public Transit		UCSF Shuttle		Other [c]		All Modes				AM Peak Hour			PM Peak Hour		
													% of Daily	% In	% Out	% of Daily	% In	% Out
STAFF																		
Faculty/Physicians	200	85%	12	5%	12	5%	12	5%	235	100%	200	1.05	19%	100%	0%	12%	0%	100%
Fellows/Residents	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	18%	97%	3%	13%	5%	95%
Nurses/Nurse Practitioners	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00	20%	100%	0%	8%	0%	100%
Postdocs/Students	13	25%	13	25%	21	40%	5	10%	52	100%	14	2.35	18%	97%	3%	13%	5%	95%
Other Staff	1,059	46%	689	30%	319	14%	255	11%	2,322	100%	1,032	1.36	23%	100%	0%	23%	3%	97%
Total staff	*1,272*	*49%*	*714*	*27%*	*352*	*13%*	*272*	*10%*	*2,609*	*100%*	*1,247*	*1.32*	*23%*	*98%*	*2%*	*22%*	*4%*	*96%*
PATIENTS & VISITORS																		
Inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Outpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors to inpatients	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors with outpatients	0	0%	0	0%	0	0%	0	0%	0	0%								
Total patients and visitors	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
OTHER VISITORS																		
Community Center Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Faculty/Staff Visitors	120	100%	0	0%	0	0%	0	0%	120	100%	120	1.00	15%	82%	18%	6%	17%	83%
Vendors/Services	60	100%	0	0%	0	0%	0	0%	60	100%	60	1.00	19%	84%	16%	10%	19%	81%
Total other visitors	*180*	*100%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*180*	*100%*	*180*	*1.00*	*17%*	*83%*	*17%*	*7%*	*15%*	*85%*
Subtotal Staff+Patients+Visitors	*1,452*	*52%*	*714*	*26%*	*352*	*13%*	*272*	*10%*	*2,789*	*100%*	*1,427*	*1.28*	*22%*	*97%*	*3%*	*20%*	*5%*	*95%*
CHILDCARE																		
Childcare staff	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Childcare children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total childcare	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
RESIDENTIAL																		
Contract holders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Spouses	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Children	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Visitors	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Vendors/Services	0	0%	0	0%	0	0%	0	0%	0	0%	0	0.00						
Total residential	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0.00*						
GRAND TOTAL	1,452	52%	714	26%	352	13%	272	10%	2,789	100%	1,427	1.28	22%	97%	3%	20%	5%	95%

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

[d] Vehicle trips are calculated based on the following formula: Drive Alone trips + (Drop-off trips x 2) + (Carpool trips / 2) + (Vanpool trips / 10) + (UCSF Shuttle / 15).

[e] Based on Parnassus Heights Transportation Surveys, 1992 and 1999.

Trip Generation
UCSF Mission Center
Year 2035

Population Group	AM Peak Hour Person Trips (External)															Private Vehicles			AM Peak Hour UCSF Shuttle			Total Vehicles		
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes											
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	38	0	38	2	0	2	2	0	2	2	0	2	44	0	44	38	0	38	0	0	0	38	0	38
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	2	0	2	2	0	2	4	0	4	1	0	1	9	0	9	3	0	3	0	0	0	3	0	3
Other Staff	244	0	244	158	0	158	73	0	73	59	0	59	534	0	534	237	0	237	5	5	10	242	5	247
Total staff	*284*	*0*	*284*	*162*	*0*	*162*	*79*	*0*	*79*	*62*	*0*	*62*	*587*	*0*	*587*	*278*	*0*	*278*	*5*	*5*	*10*	*283*	*5*	*288*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	15	3	18	0	0	0	0	0	0	0	0	0	15	3	18	15	3	18	0	0	0	15	3	18
Vendors/Services	10	2	12	0	0	0	0	0	0	0	0	0	10	2	12	10	2	12	0	0	0	10	2	12
Total other visitors	*25*	*5*	*30*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*25*	*5*	*30*	*25*	*5*	*30*	*0*	*0*	*0*	*25*	*5*	*30*
Subtotal Staff+Patients+Visitors	*309*	*5*	*314*	*162*	*0*	*162*	*79*	*0*	*79*	*62*	*0*	*62*	*612*	*5*	*617*	*303*	*5*	*308*	*5*	*5*	*10*	*308*	*10*	*318*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	309	5	314	162	0	162	79	0	79	62	0	62	612	5	617	303	5	308	5	5	10	308	10	318

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

Trip Generation
UCSF Mission Center
Year 2035

Population Group	PM Peak Hour Person Trips (External)															PM Peak Hour								
	Auto			Public Transit			UCSF Shuttle			Other [c]			All Modes			Private Vehicles			UCSF Shuttle			Total Vehicles		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
STAFF																								
Faculty/Physicians	0	24	24	0	1	1	0	1	1	0	1	1	0	27	27	0	24	24	0	0	0	0	24	24
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	2	2	0	2	2	0	3	3	0	1	1	0	8	8	0	2	2	0	0	0	0	2	2
Other Staff	7	236	243	5	154	159	2	71	73	2	57	59	16	518	534	7	230	237	5	5	10	12	235	247
Total staff	*7*	*262*	*269*	*5*	*157*	*162*	*2*	*75*	*77*	*2*	*59*	*61*	*16*	*553*	*569*	*7*	*256*	*263*	*5*	*5*	*10*	*12*	*261*	*273*
PATIENTS & VISITORS																								
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	6	7	0	0	0	0	0	0	0	0	0	1	6	7	1	6	7	0	0	0	1	6	7
Vendors/Services	1	5	6	0	0	0	0	0	0	0	0	0	1	5	6	1	5	6	0	0	0	1	5	6
Total other visitors	*2*	*11*	*13*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*	*11*	*13*	*2*	*11*	*13*	*0*	*0*	*0*	*2*	*11*	*13*
Subtotal Staff+Patients+Visitors	*9*	*273*	*282*	*5*	*157*	*162*	*2*	*75*	*77*	*2*	*59*	*61*	*18*	*564*	*582*	*9*	*267*	*276*	*5*	*5*	*10*	*14*	*272*	*286*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	9	273	282	5	157	162	2	75	77	2	59	61	18	564	582	9	267	276	5	5	10	14	272	286

[c] Other travel modes include walk, bicycle, taxi and motorcycle.

3. VEHICLE TRIP DISTRIBUTION AM AND PM PEAK HOUR

3.1 PARNASSUS HEIGHTS
EXISTING TO 2035 GROWTH

Trip Generation
UCSF Parnassus Campus
Year 2035 minus Existing

Population Group	Origins/Destinations [a]								
	San Francisco SD1	San Francisco SD2	San Francisco SD3	San Francisco SD4	East Bay	North Bay	South Bay	Outside Bay Area	All Origins
STAFF									
Faculty/Physicians	5%	7%	15%	5%	16%	32%	18%	2%	100%
Fellows/Residents	10%	13%	29%	10%	10%	5%	24%	0%	100%
Nurses/Nurse Practitioners	4%	6%	13%	4%	19%	28%	24%	2%	100%
Postdocs/Students	10%	13%	28%	9%	7%	7%	27%	0%	100%
Other Staff	4%	6%	13%	4%	23%	14%	34%	2%	100%
Total staff	*11%*	*14%*	*31%*	*10%*	*6%*	*-2%*	*30%*	*0%*	*100%*
PATIENTS & VISITORS									
Inpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Outpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Visitors to inpatients	17%	8%	7%	24%	13%	9%	11%	11%	100%
Visitors with outpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Total patients and visitors	*43%*	*3%*	*17%*	*4%*	*22%*	*-1%*	*13%*	*-1%*	*100%*
OTHER VISITORS									
Community Center Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Faculty/Staff Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Vendors/Services	14%	14%	14%	14%	14%	7%	19%	2%	100%
Total other visitors	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Subtotal Staff+Patients+Visitors	*16%*	*12%*	*29%*	*9%*	*8%*	*-1%*	*27%*	*0%*	*100%*
CHILDCARE									
Childcare staff	4%	6%	13%	4%	23%	14%	34%	2%	100%
Childcare children	11%	14%	31%	10%	6%	-2%	30%	0%	100%
Total childcare	*11%*	*14%*	*31%*	*10%*	*6%*	*-2%*	*30%*	*0%*	*100%*
RESIDENTIAL									
Contract holders	25%	10%	50%	10%	2%	1%	2%	0%	100%
Spouses	25%	10%	50%	10%	2%	1%	2%	0%	100%
Children									
Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Vendors/Services	14%	14%	14%	14%	14%	7%	19%	2%	100%
Total residential	*24%*	*10%*	*46%*	*11%*	*3%*	*2%*	*3%*	*1%*	*100%*
GRAND TOTAL	19%	11%	38%	10%	5%	0%	16%	0%	100%

[a] Origin/Destination for staff based on UCSF Transportation Services Annual Commute Survey 2013 for the Parnassus Campus
Origin/Destination for patients, visitors, vendors and services based on Parnassus Heights Transportation Surveys, 199
Origin/Destination for residents based on UCSF survey of residents at Aldea and Avenue Housing, 201

Trip Generation
UCSF Parnassus Campus
Year 2035 minus Existing

Population Group	AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	3	0	3
Nurses/Nurse Practitioners	-1	0	-1	0	-3	0	-1	0	-4	0	-7	0	-5	0	0	0	-23	0	-23
Postdocs/Students	3	0	4	1	9	1	3	0	2	0	2	0	8	1	0	0	31	4	35
Other Staff	0	0	0	0	1	0	0	0	2	0	1	0	2	0	0	0	7	0	7
Total staff	*3*	*0*	*3*	*1*	*8*	*1*	*3*	*0*	*0*	*0*	*-3*	*0*	*6*	*1*	*0*	*0*	*18*	*4*	*22*
PATIENTS & VISITORS																			
Inpatients	-1	0	0	0	0	0	-1	0	-1	0	0	0	0	0	0	0	-4	-1	-5
Outpatients	5	1	1	0	2	1	4	1	3	1	1	0	2	1	1	0	20	5	25
Visitors to inpatients	-2	-1	-1	0	-1	0	-2	-1	-1	-1	-1	0	-1	0	-1	0	-10	-4	-14
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*2*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*6*	*0*	*6*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*5*	*1*	*4*	*0*	*9*	*1*	*3*	*0*	*1*	*0*	*-3*	*0*	*7*	*1*	*0*	*0*	*24*	*4*	*28*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Childcare children	1	1	1	1	3	3	1	1	1	1	0	0	3	3	0	0	10	10	20
Total childcare	*1*	*1*	*1*	*1*	*3*	*3*	*1*	*1*	*1*	*1*	*0*	*0*	*3*	*3*	*0*	*0*	*11*	*10*	*21*
RESIDENTIAL																			
Contract holders	2	6	1	2	3	12	1	2	0	0	0	0	0	0	0	0	6	23	29
Spouses	1	2	0	1	1	4	0	1	0	0	0	0	0	0	0	0	2	7	9
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	1	4
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	1	4
Total residential	*3*	*8*	*1*	*3*	*5*	*15*	*2*	*3*	*1*	*1*	*1*	*0*	*1*	*1*	*0*	*0*	*14*	*32*	*46*
GRAND TOTAL	9	10	7	5	16	20	6	5	3	2	-3	0	11	5	0	0	49	46	95

Trip Generation
UCSF Parnassus Campus
Year 2035 minus Existing

Population Group	PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2
Nurses/Nurse Practitioners	0	0	0	-1	0	-1	0	0	0	-2	0	-3	0	-2	0	0	-1	-10	-11
Postdocs/Students	0	2	0	3	1	6	0	2	0	1	0	1	1	6	0	0	3	22	25
Other Staff	0	0	0	0	0	1	0	0	0	2	0	1	0	2	0	0	0	7	7
Total staff	*0*	*2*	*0*	*3*	*1*	*6*	*0*	*2*	*0*	*1*	*0*	*0*	*1*	*6*	*0*	*0*	*2*	*21*	*23*
PATIENTS & VISITORS																			
Inpatients	0	-1	0	0	0	0	0	-1	0	-1	0	0	0	0	0	0	-1	-4	-5
Outpatients	1	3	0	1	0	1	1	3	1	2	0	1	0	2	0	1	4	14	18
Visitors to inpatients	0	-1	0	-1	0	0	0	-2	0	-1	0	-1	0	-1	0	-1	-2	-7	-9
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*3*	*4*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*1*	*4*	*0*	*3*	*1*	*7*	*0*	*2*	*0*	*2*	*0*	*0*	*1*	*7*	*0*	*0*	*3*	*24*	*27*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	1	1	1	1	3	3	1	1	1	1	0	0	3	3	0	0	10	10	20
Total childcare	*1*	*1*	*1*	*1*	*3*	*3*	*1*	*1*	*1*	*1*	*0*	*0*	*3*	*3*	*0*	*0*	*10*	*10*	*20*
RESIDENTIAL																			
Contract holders	5	1	2	0	9	2	2	0	0	0	0	0	0	0	0	0	18	4	22
Spouses	3	2	1	1	6	3	1	1	0	0	0	0	0	0	0	0	12	6	18
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total residential	*8*	*3*	*3*	*1*	*15*	*5*	*3*	*2*	*1*	*1*	*0*	*0*	*1*	*1*	*0*	*0*	*32*	*13*	*45*
GRAND TOTAL	10	8	5	6	19	15	5	5	2	3	0	0	5	10	0	0	45	47	92

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	Origins/Destinations [a]								
	San Francisco SD1	San Francisco SD2	San Francisco SD3	San Francisco SD4	East Bay	North Bay	South Bay	Outside Bay Area	All Origins
STAFF									
Faculty/Physicians	8%	10%	22%	7%	10%	17%	27%	0%	100%
Fellows/Residents	12%	16%	35%	12%	0%	0%	25%	0%	100%
Nurses/Nurse Practitioners	12%	16%	35%	12%	0%	0%	25%	0%	100%
Postdocs/Students	10%	13%	29%	10%	19%	0%	19%	0%	100%
Other Staff	6%	8%	17%	6%	15%	9%	39%	0%	100%
Total staff	*8%*	*10%*	*22%*	*7%*	*12%*	*8%*	*34%*	*0%*	*100%*
PATIENTS & VISITORS									
Inpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Outpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Visitors to inpatients	17%	8%	7%	24%	13%	9%	11%	11%	100%
Visitors with outpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Total patients and visitors	*23%*	*7%*	*9%*	*20%*	*15%*	*7%*	*12%*	*8%*	*100%*
OTHER VISITORS									
Community Center Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Faculty/Staff Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Vendors/Services	14%	14%	14%	14%	14%	7%	19%	2%	100%
Total other visitors	*16%*	*11%*	*11%*	*19%*	*14%*	*8%*	*15%*	*6%*	*100%*
Subtotal Staff+Patients+Visitors	*13%*	*9%*	*17%*	*12%*	*13%*	*8%*	*26%*	*3%*	*100%*
CHILDCARE									
Childcare staff	6%	8%	17%	6%	15%	9%	39%	0%	100%
Childcare children	8%	10%	22%	7%	12%	8%	34%	0%	100%
Total childcare	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
RESIDENTIAL									
Contract holders	45%	5%	40%	5%	2%	1%	2%	0%	100%
Spouses	45%	5%	40%	5%	2%	1%	2%	0%	100%
Children									
Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Vendors/Services	14%	14%	14%	14%	14%	7%	19%	2%	100%
Total residential	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
GRAND TOTAL	13%	9%	17%	12%	13%	8%	26%	3%	100%

[a] Origin/Destination for staff based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.
Origin/Destination for patients, visitors, vendors and services based on UCSF Mission Bay Medical Center EIR (2008)
Origin/Destination for residents based on UCSF survey of residents at Mission Bay, 2013

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	ENTIRE CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	6	0	7	0	16	0	5	0	7	0	12	0	20	1	0	0	74	2	76
Fellows/Residents	3	0	3	0	8	1	3	0	0	0	0	0	6	1	0	0	22	2	24
Nurses/Nurse Practitioners	13	0	16	0	37	0	12	0	0	0	0	0	26	0	0	0	105	0	105
Postdocs/Students	2	0	2	0	4	1	1	0	3	1	0	0	3	1	0	0	15	3	18
Other Staff	11	0	15	1	33	1	11	0	29	1	18	1	75	3	0	0	191	8	199
Total staff	*34*	*1*	*44*	*2*	*99*	*3*	*33*	*1*	*39*	*2*	*30*	*1*	*129*	*5*	*0*	*0*	*407*	*15*	*422*
PATIENTS & VISITORS																			
Inpatients	5	1	1	0	2	1	3	1	3	1	1	0	2	1	1	0	19	5	24
Outpatients	24	6	6	2	10	3	18	5	16	4	6	2	11	3	7	2	98	26	124
Visitors to inpatients	8	3	4	1	3	1	12	4	7	2	4	1	6	2	5	2	50	15	65
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*38*	*10*	*11*	*3*	*15*	*4*	*33*	*9*	*25*	*7*	*11*	*3*	*19*	*5*	*14*	*4*	*167*	*46*	*213*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	4	1	2	0	2	0	6	1	3	1	2	0	3	1	2	1	23	5	28
Vendors/Services	2	0	2	0	2	0	2	0	2	0	1	0	3	1	0	0	16	3	19
Total other visitors	*6*	*1*	*4*	*1*	*4*	*1*	*8*	*2*	*5*	*1*	*3*	*1*	*6*	*1*	*3*	*1*	*39*	*8*	*47*
Subtotal Staff+Patients+Visitors	*78*	*13*	*59*	*5*	*118*	*8*	*74*	*12*	*69*	*10*	*44*	*5*	*154*	*11*	*17*	*4*	*613*	*69*	*682*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	78	13	59	5	118	8	74	12	69	10	44	5	154	11	17	4	613	69	682

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	NORTH CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	3	0	4	0	9	0	3	0	4	0	7	0	10	0	0	0	39	1	40
Fellows/Residents	3	0	3	0	8	1	3	0	0	0	0	0	6	1	0	0	22	2	24
Nurses/Nurse Practitioners	0	0	-1	0	-1	0	0	0	0	0	0	0	-1	0	0	0	-4	0	-4
Postdocs/Students	2	0	2	0	4	1	1	0	3	1	0	0	3	1	0	0	15	3	18
Other Staff	7	0	9	0	20	1	7	0	17	1	11	0	45	2	0	0	116	5	121
Total staff	*14*	*1*	*17*	*1*	*39*	*3*	*13*	*1*	*24*	*1*	*17*	*1*	*63*	*3*	*0*	*0*	*188*	*11*	*199*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	2	0	1	0	1	0	2	1	1	0	1	0	1	0	1	0	10	2	12
Vendors/Services	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	6	1	8
Total other visitors	*3*	*1*	*2*	*0*	*2*	*0*	*3*	*1*	*2*	*0*	*1*	*0*	*2*	*0*	*1*	*0*	*16*	*3*	*19*
Subtotal Staff+Patients+Visitors	*16*	*1*	*19*	*2*	*41*	*3*	*16*	*2*	*26*	*2*	*18*	*1*	*66*	*4*	*1*	*0*	*205*	*14*	*219*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	16	1	19	2	41	3	16	2	26	2	18	1	66	4	1	0	205	14	219

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	SOUTH CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	3	0	3	0	8	0	3	0	3	0	6	0	9	0	0	0	35	1	36
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	13	0	17	0	38	0	13	0	0	0	0	0	27	0	0	0	109	0	109
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	5	0	6	0	13	1	4	0	11	0	7	0	29	1	0	0	75	3	78
Total staff	*21*	*0*	*26*	*0*	*59*	*1*	*20*	*0*	*15*	*1*	*13*	*0*	*66*	*1*	*0*	*0*	*219*	*4*	*223*
PATIENTS & VISITORS																			
Inpatients	5	1	1	0	2	1	3	1	3	1	1	0	2	1	1	0	19	5	24
Outpatients	24	6	6	2	10	3	18	5	15	4	6	2	11	3	7	2	97	26	123
Visitors to inpatients	8	3	4	1	3	1	12	4	7	2	4	1	6	2	5	2	50	15	65
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*37*	*10*	*11*	*3*	*15*	*4*	*33*	*9*	*25*	*7*	*11*	*3*	*19*	*5*	*14*	*4*	*166*	*46*	*212*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	2	0	1	0	1	0	3	1	2	0	1	0	2	0	1	0	13	3	16
Vendors/Services	1	0	1	0	1	0	1	0	1	0	1	0	2	0	0	0	10	2	11
Total other visitors	*4*	*1*	*2*	*0*	*2*	*0*	*5*	*1*	*3*	*1*	*2*	*0*	*3*	*1*	*2*	*0*	*23*	*5*	*28*
Subtotal Staff+Patients+Visitors	*62*	*11*	*40*	*4*	*76*	*5*	*58*	*10*	*43*	*8*	*26*	*4*	*88*	*7*	*15*	*4*	*408*	*55*	*463*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	62	11	40	4	76	5	58	10	43	8	26	4	88	7	15	4	408	55	463

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	BLOCKS 33-34 - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total staff	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	ENTIRE CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	4	0	4	0	10	0	3	0	5	0	8	0	12	0	0	1	46	47
Fellows/Residents	0	2	0	2	0	5	0	2	0	0	0	0	0	4	0	0	1	15	16
Nurses/Nurse Practitioners	0	5	0	7	0	15	0	5	0	0	0	0	0	11	0	0	0	42	42
Postdocs/Students	0	1	0	1	1	3	0	1	0	2	0	0	0	2	0	0	2	10	12
Other Staff	1	11	1	14	2	32	1	11	2	28	1	17	5	72	0	0	13	184	197
Total staff	*1*	*23*	*2*	*29*	*3*	*65*	*1*	*21*	*2*	*34*	*1*	*25*	*6*	*100*	*0*	*0*	*17*	*297*	*314*
PATIENTS & VISITORS																			
Inpatients	1	3	0	1	0	1	1	3	1	2	0	1	0	2	0	1	4	14	18
Outpatients	5	18	1	5	2	7	4	13	3	12	1	4	2	9	1	5	21	73	94
Visitors to inpatients	2	6	1	3	1	2	3	8	2	4	1	3	1	4	1	4	13	33	46
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*8*	*27*	*3*	*8*	*3*	*11*	*8*	*24*	*6*	*18*	*3*	*8*	*4*	*14*	*3*	*10*	*38*	*120*	*158*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	2	0	1	0	1	0	2	0	1	0	1	0	1	0	1	1	9	10
Vendors/Services	0	1	0	1	0	1	0	1	0	1	0	1	0	2	0	0	2	8	10
Total other visitors	*0*	*3*	*0*	*2*	*0*	*2*	*1*	*3*	*0*	*2*	*0*	*1*	*0*	*3*	*0*	*1*	*3*	*17*	*20*
Subtotal Staff+Patients+Visitors	*10*	*53*	*4*	*39*	*7*	*78*	*9*	*49*	*9*	*55*	*4*	*34*	*11*	*117*	*3*	*11*	*58*	*434*	*492*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	10	53	4	39	7	78	9	49	9	55	4	34	11	117	3	11	58	434	492

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	NORTH CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	2	0	2	0	5	0	2	0	2	0	4	0	6	0	0	1	24	25
Fellows/Residents	0	2	0	2	0	5	0	2	0	0	0	0	0	4	0	0	1	15	16
Nurses/Nurse Practitioners	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	-2	-2
Postdocs/Students	0	1	0	1	1	3	0	1	0	2	0	0	0	2	0	0	2	10	12
Other Staff	0	7	1	9	1	19	0	6	1	17	1	10	3	44	0	0	8	112	119
Total staff	*1*	*11*	*1*	*14*	*2*	*32*	*1*	*11*	*2*	*21*	*1*	*14*	*4*	*55*	*0*	*0*	*11*	*159*	*171*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	4
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	4
Total other visitors	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*0*	*1*	*7*	*8*
Subtotal Staff+Patients+Visitors	*1*	*12*	*1*	*15*	*3*	*33*	*1*	*12*	*2*	*22*	*1*	*15*	*4*	*57*	*0*	*1*	*13*	*167*	*180*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	1	12	1	15	3	33	1	12	2	22	1	15	4	57	0	1	13	167	180

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	SOUTH CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	2	0	2	0	5	0	2	0	2	0	4	0	6	0	0	0	22	22
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	5	0	7	0	15	0	5	0	0	0	0	0	11	0	0	0	44	44
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	0	4	0	6	1	13	0	4	1	11	0	7	2	28	0	0	5	72	78
Total staff	*0*	*11*	*0*	*14*	*1*	*33*	*0*	*11*	*1*	*13*	*1*	*10*	*2*	*45*	*0*	*0*	*6*	*138*	*143*
PATIENTS & VISITORS																			
Inpatients	1	3	0	1	0	1	1	3	1	2	0	1	0	2	0	1	4	14	18
Outpatients	5	18	1	5	2	7	4	13	3	12	1	4	2	8	1	5	21	72	93
Visitors to inpatients	2	6	1	3	1	2	3	8	2	4	1	3	1	4	1	4	13	33	46
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*8*	*27*	*3*	*8*	*3*	*11*	*8*	*24*	*6*	*18*	*3*	*8*	*4*	*14*	*3*	*10*	*38*	*119*	*157*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	1	1	5	6
Vendors/Services	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	1	5	6
Total other visitors	*0*	*2*	*0*	*1*	*0*	*1*	*0*	*2*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*1*	*2*	*10*	*12*
Subtotal Staff+Patients+Visitors	*9*	*40*	*3*	*24*	*5*	*45*	*8*	*37*	*7*	*33*	*3*	*19*	*7*	*60*	*3*	*10*	*45*	*267*	*312*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	9	40	3	24	5	45	8	37	7	33	3	19	7	60	3	10	45	267	312

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	BLOCKS 33-34 - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total staff	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Trip Generation

UCSF Mission Bay Campus
Year 2040 S1 minus Existing

Population Group	Origins/Destinations [a]								
	San Francisco SD1	San Francisco SD2	San Francisco SD3	San Francisco SD4	East Bay	North Bay	South Bay	Outside Bay Area	All Origins
STAFF									
Faculty/Physicians	8%	10%	22%	7%	10%	17%	27%	0%	100%
Fellows/Residents	12%	16%	35%	12%	0%	0%	25%	0%	100%
Nurses/Nurse Practitioners	12%	16%	35%	12%	0%	0%	25%	0%	100%
Postdocs/Students	10%	13%	29%	10%	19%	0%	19%	0%	100%
Other Staff	6%	8%	17%	6%	15%	9%	39%	0%	100%
Total staff	*7%*	*8%*	*19%*	*6%*	*14%*	*9%*	*37%*	*0%*	*100%*
PATIENTS & VISITORS									
Inpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Outpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Visitors to inpatients	17%	8%	7%	24%	13%	9%	11%	11%	100%
Visitors with outpatients	25%	6%	10%	18%	16%	6%	12%	7%	100%
Total patients and visitors	*22%*	*7%*	*9%*	*20%*	*15%*	*7%*	*12%*	*8%*	*100%*
OTHER VISITORS									
Community Center Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Faculty/Staff Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Vendors/Services	14%	14%	14%	14%	14%	7%	19%	2%	100%
Total other visitors	*16%*	*11%*	*10%*	*20%*	*14%*	*8%*	*15%*	*7%*	*100%*
Subtotal Staff+Patients+Visitors	*10%*	*8%*	*17%*	*9%*	*14%*	*9%*	*32%*	*2%*	*100%*
CHILDCARE									
Childcare staff	6%	8%	17%	6%	15%	9%	39%	0%	100%
Childcare children	7%	8%	19%	6%	14%	9%	37%	0%	100%
Total childcare	*7%*	*8%*	*19%*	*6%*	*14%*	*9%*	*37%*	*0%*	*100%*
RESIDENTIAL									
Contract holders	45%	5%	40%	5%	2%	1%	2%	0%	100%
Spouses	45%	5%	40%	5%	2%	1%	2%	0%	100%
Children									
Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Vendors/Services	14%	14%	14%	14%	14%	7%	19%	2%	100%
Total residential	*43%*	*5%*	*38%*	*6%*	*3%*	*1%*	*3%*	*0%*	*100%*
GRAND TOTAL	11%	8%	18%	9%	13%	9%	31%	2%	100%

[a] Origin/Destination for staff based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.
Origin/Destination for patients, visitors, vendors and services based on UCSF Mission Bay Medical Center EIR (2008)
Origin/Destination for residents based on UCSF survey of residents at Mission Bay, 2013

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	ENTIRE CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	21	1	26	1	59	2	20	1	27	1	45	1	72	2	0	0	269	7	276
Fellows/Residents	3	0	3	0	8	1	3	0	0	0	0	0	6	1	0	0	22	2	24
Nurses/Nurse Practitioners	25	0	32	0	73	0	24	0	0	0	0	0	52	0	0	0	207	0	207
Postdocs/Students	2	0	3	1	7	1	2	0	4	1	0	0	4	1	0	0	23	4	27
Other Staff	83	3	106	4	240	10	79	3	208	9	127	5	544	23	0	0	1,388	58	1,446
Total staff	*134*	*5*	*172*	*6*	*387*	*13*	*128*	*4*	*239*	*10*	*172*	*6*	*677*	*26*	*0*	*0*	*1,909*	*71*	*1,980*
PATIENTS & VISITORS																			
Inpatients	13	3	3	1	5	1	10	3	9	2	3	1	6	2	4	1	54	14	68
Outpatients	48	13	12	3	19	5	35	9	31	8	11	3	22	6	14	4	192	51	243
Visitors to inpatients	24	7	11	3	10	3	35	11	19	6	13	4	16	5	15	5	143	43	186
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*86*	*23*	*26*	*7*	*34*	*9*	*80*	*22*	*58*	*16*	*27*	*8*	*45*	*12*	*33*	*9*	*389*	*108*	*497*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	18	4	8	2	7	2	25	6	14	3	9	2	12	3	11	2	104	23	127
Vendors/Services	10	2	10	2	10	2	10	2	10	2	5	1	13	3	2	0	71	14	85
Total other visitors	*28*	*6*	*18*	*4*	*17*	*4*	*36*	*8*	*24*	*5*	*14*	*3*	*25*	*5*	*13*	*3*	*175*	*37*	*212*
Subtotal Staff+Patients+Visitors	*248*	*34*	*216*	*17*	*438*	*26*	*243*	*34*	*321*	*31*	*214*	*17*	*747*	*43*	*46*	*12*	*2,473*	*216*	*2,689*
CHILDCARE																			
Childcare staff	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	0	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*11*	*11*	*4*	*4*	*8*	*8*	*6*	*5*	*23*	*21*	*0*	*0*	*61*	*57*	*118*
RESIDENTIAL																			
Contract holders	3	10	0	1	2	9	0	1	0	0	0	0	0	0	0	0	6	23	29
Spouses	3	9	0	1	2	8	0	1	0	0	0	0	0	0	0	0	6	21	27
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0	8	1	9
Vendors/Services	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	1	8
Total residential	*8*	*20*	*2*	*2*	*6*	*18*	*4*	*3*	*2*	*1*	*1*	*1*	*2*	*1*	*1*	*0*	*27*	*46*	*73*
GRAND TOTAL	260	58	224	24	456	55	250	41	332	40	221	23	772	66	47	12	2,561	319	2,880

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	NORTH CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	10	0	13	0	29	1	10	0	13	0	22	1	36	1	0	0	133	3	137
Fellows/Residents	3	0	3	0	8	1	3	0	0	0	0	0	6	1	0	0	22	2	24
Nurses/Nurse Practitioners	0	0	-1	0	-1	0	0	0	0	0	0	0	-1	0	0	0	-4	0	-4
Postdocs/Students	1	0	2	0	4	1	1	0	3	0	0	0	3	0	0	0	14	2	17
Other Staff	52	2	66	3	149	6	49	2	129	5	79	3	337	14	0	0	860	36	896
Total staff	*65*	*3*	*84*	*4*	*189*	*8*	*62*	*3*	*145*	*6*	*101*	*4*	*380*	*16*	*0*	*0*	*1,026*	*44*	*1,070*
PATIENTS & VISITORS																			
Inpatients	5	1	1	0	2	1	4	1	3	1	1	0	2	1	1	0	21	5	27
Outpatients	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	5	1	6
Visitors to inpatients	9	3	4	1	4	1	14	4	7	2	5	2	6	2	6	2	56	17	73
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*16*	*5*	*6*	*2*	*6*	*2*	*18*	*5*	*12*	*3*	*7*	*2*	*9*	*3*	*8*	*2*	*82*	*24*	*106*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	9	2	4	1	4	1	14	3	7	2	5	1	6	1	6	1	56	12	68
Vendors/Services	6	1	6	1	6	1	6	1	6	1	3	1	7	1	1	0	39	8	46
Total other visitors	*15*	*3*	*10*	*2*	*9*	*2*	*19*	*4*	*13*	*3*	*8*	*2*	*14*	*3*	*7*	*1*	*94*	*20*	*114*
Subtotal Staff+Patients+Visitors	*97*	*11*	*99*	*8*	*204*	*12*	*100*	*12*	*170*	*12*	*115*	*7*	*403*	*21*	*15*	*4*	*1,202*	*87*	*1,290*
CHILDCARE																			
Childcare staff	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	0	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*11*	*11*	*4*	*4*	*8*	*8*	*6*	*5*	*23*	*21*	*0*	*0*	*61*	*57*	*118*
RESIDENTIAL																			
Contract holders	3	10	0	1	2	9	0	1	0	0	0	0	0	0	0	0	6	23	29
Spouses	3	9	0	1	2	8	0	1	0	0	0	0	0	0	0	0	6	21	27
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0	8	1	9
Vendors/Services	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	1	8
Total residential	*8*	*20*	*2*	*2*	*6*	*18*	*4*	*3*	*2*	*1*	*1*	*1*	*2*	*1*	*1*	*0*	*27*	*46*	*73*
GRAND TOTAL	108	35	107	15	222	41	107	18	180	21	122	13	428	44	16	4	1,290	190	1,481

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	SOUTH CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	7	0	9	0	20	1	7	0	9	0	15	0	25	1	0	0	92	2	95
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	26	0	33	0	75	0	25	0	0	0	0	0	53	0	0	0	211	0	211
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	12	0	15	1	34	1	11	0	30	1	18	1	78	3	0	0	199	8	207
Total staff	*45*	*1*	*57*	*1*	*129*	*2*	*43*	*1*	*39*	*1*	*34*	*1*	*155*	*4*	*0*	*0*	*502*	*11*	*512*
PATIENTS & VISITORS																			
Inpatients	8	2	2	1	3	1	6	2	5	1	2	1	4	1	2	1	33	9	41
Outpatients	47	12	12	3	19	5	34	9	30	8	11	3	22	6	13	4	187	50	237
Visitors to inpatients	15	4	7	2	6	2	21	6	12	3	8	2	10	3	9	3	87	26	113
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*70*	*19*	*21*	*6*	*28*	*8*	*61*	*17*	*47*	*13*	*21*	*6*	*35*	*10*	*25*	*7*	*307*	*84*	*391*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	5	1	2	0	2	0	7	2	4	1	3	1	3	1	3	1	28	6	34
Vendors/Services	3	1	3	1	3	1	3	1	3	1	1	0	4	1	0	0	19	4	23
Total other visitors	*8*	*2*	*5*	*1*	*5*	*1*	*10*	*2*	*6*	*1*	*4*	*1*	*7*	*1*	*3*	*1*	*47*	*10*	*57*
Subtotal Staff+Patients+Visitors	*122*	*21*	*83*	*8*	*162*	*11*	*113*	*20*	*92*	*16*	*58*	*8*	*197*	*15*	*28*	*8*	*856*	*105*	*961*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	122	21	83	8	162	11	113	20	92	16	58	8	197	15	28	8	856	105	961

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	BLOCKS 33-34 - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	3	0	4	0	10	0	3	0	4	0	7	0	12	0	0	0	44	1	45
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	1	0	1	0	3	0	1	0	2	0	0	0	2	0	0	0	9	2	10
Other Staff	20	1	25	1	57	2	19	1	49	2	30	1	129	5	0	0	329	14	343
Total staff	*24*	*1*	*31*	*1*	*69*	*3*	*23*	*1*	*55*	*2*	*37*	*1*	*142*	*6*	*0*	*0*	*381*	*16*	*398*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	3	1	2	0	1	0	5	1	3	1	2	0	2	1	2	0	20	5	25
Vendors/Services	2	0	2	0	2	0	2	0	2	0	1	0	2	0	0	0	13	3	15
Total other visitors	*5*	*1*	*3*	*1*	*3*	*1*	*7*	*1*	*5*	*1*	*3*	*1*	*5*	*1*	*2*	*1*	*33*	*7*	*40*
Subtotal Staff+Patients+Visitors	*29*	*2*	*34*	*2*	*72*	*4*	*30*	*2*	*60*	*3*	*40*	*2*	*147*	*7*	*2*	*1*	*415*	*23*	*438*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	29	2	34	2	72	4	30	2	60	3	40	2	147	7	2	1	415	23	438

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	ENTIRE CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	13	0	17	1	38	0	12	1	17	1	29	1	46	0	0	5	171	176
Fellows/Residents	0	2	0	2	0	5	0	2	0	0	0	0	0	4	0	0	1	15	16
Nurses/Nurse Practitioners	0	10	0	13	0	29	0	10	0	0	0	0	0	21	0	0	0	82	82
Postdocs/Students	0	2	0	2	1	5	0	2	1	3	0	0	1	3	0	0	3	16	19
Other Staff	6	81	8	103	17	233	6	77	15	202	9	123	38	528	0	0	98	1,347	1,445
Total staff	*7*	*107*	*9*	*137*	*19*	*309*	*6*	*102*	*16*	*222*	*10*	*152*	*41*	*600*	*0*	*0*	*107*	*1,631*	*1,738*
PATIENTS & VISITORS																			
Inpatients	3	10	1	3	1	4	2	7	2	6	1	2	1	5	1	3	11	40	51
Outpatients	10	36	3	9	4	14	7	26	7	23	2	8	5	17	3	10	41	143	184
Visitors to inpatients	6	16	3	7	2	6	9	23	5	12	3	8	4	11	4	10	36	94	130
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*19*	*62*	*6*	*19*	*8*	*25*	*18*	*56*	*13*	*42*	*6*	*19*	*10*	*32*	*8*	*23*	*88*	*277*	*365*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	7	1	3	1	3	2	10	1	6	1	4	1	5	1	5	8	42	50
Vendors/Services	1	5	1	5	1	5	1	5	1	5	1	2	2	7	0	1	8	36	44
Total other visitors	*3*	*12*	*2*	*8*	*2*	*8*	*3*	*15*	*2*	*11*	*1*	*6*	*2*	*11*	*1*	*5*	*16*	*78*	*94*
Subtotal Staff+Patients+Visitors	*28*	*181*	*16*	*164*	*29*	*342*	*28*	*174*	*31*	*274*	*17*	*177*	*53*	*644*	*9*	*28*	*211*	*1,986*	*2,197*
CHILDCARE																			
Childcare staff	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*11*	*11*	*4*	*4*	*8*	*8*	*5*	*6*	*21*	*23*	*0*	*0*	*57*	*61*	*118*
RESIDENTIAL																			
Contract holders	11	3	1	0	10	2	1	0	0	0	0	0	0	0	0	0	24	6	30
Spouses	18	9	2	1	16	8	2	1	1	0	0	0	1	0	0	0	40	21	61
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	3
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	4
Total residential	*29*	*13*	*3*	*2*	*26*	*11*	*3*	*3*	*1*	*1*	*1*	*1*	*1*	*1*	*0*	*0*	*65*	*33*	*98*
GRAND TOTAL	61	198	24	172	65	365	35	180	40	284	23	184	76	668	9	29	333	2,080	2,413

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	NORTH CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	6	0	8	1	19	0	6	0	8	0	14	1	23	0	0	2	85	87
Fellows/Residents	0	2	0	2	0	5	0	2	0	0	0	0	0	4	0	0	1	15	16
Nurses/Nurse Practitioners	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	-2	-2
Postdocs/Students	0	1	0	1	1	3	0	1	0	2	0	0	0	2	0	0	2	10	12
Other Staff	4	50	5	64	10	144	3	48	9	125	6	77	24	327	0	0	61	835	896
Total staff	*4*	*59*	*5*	*76*	*12*	*171*	*4*	*56*	*10*	*136*	*6*	*91*	*25*	*355*	*0*	*0*	*66*	*943*	*1,009*
PATIENTS & VISITORS																			
Inpatients	1	4	0	1	0	2	1	3	1	2	0	1	1	2	0	1	4	16	20
Outpatients	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	4	5
Visitors to inpatients	2	6	1	3	1	2	3	9	2	5	1	3	2	4	2	4	14	37	51
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*4*	*11*	*1*	*4*	*1*	*4*	*4*	*12*	*3*	*8*	*2*	*4*	*2*	*6*	*2*	*5*	*19*	*56*	*76*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	4	0	2	0	2	1	5	1	3	0	2	0	3	0	2	4	23	27
Vendors/Services	1	3	1	3	1	3	1	3	1	3	0	1	1	4	0	0	4	20	24
Total other visitors	*1*	*7*	*1*	*5*	*1*	*4*	*2*	*8*	*1*	*6*	*1*	*3*	*1*	*6*	*1*	*3*	*9*	*42*	*51*
Subtotal Staff+Patients+Visitors	*9*	*77*	*8*	*84*	*14*	*179*	*10*	*77*	*14*	*149*	*8*	*98*	*29*	*367*	*2*	*8*	*94*	*1,041*	*1,135*
CHILDCARE																			
Childcare staff	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*11*	*11*	*4*	*4*	*8*	*8*	*5*	*6*	*21*	*23*	*0*	*0*	*57*	*61*	*118*
RESIDENTIAL																			
Contract holders	11	3	1	0	10	2	1	0	0	0	0	0	0	0	0	0	24	6	30
Spouses	18	9	2	1	16	8	2	1	1	0	0	0	1	0	0	0	40	21	61
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	3
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	4
Total residential	*29*	*13*	*3*	*2*	*26*	*11*	*3*	*3*	*1*	*1*	*1*	*1*	*1*	*1*	*0*	*0*	*65*	*33*	*98*
GRAND TOTAL	42	94	16	91	51	202	17	84	23	159	14	105	51	391	2	9	216	1,135	1,351

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	SOUTH CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	4	0	6	0	13	0	4	0	6	0	10	0	16	0	0	2	59	60
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	10	0	13	0	30	0	10	0	0	0	0	0	21	0	0	0	84	84
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	1	12	1	15	2	33	1	11	2	29	1	18	5	75	0	0	14	193	207
Total staff	*1*	*26*	*1*	*34*	*3*	*76*	*1*	*25*	*2*	*35*	*2*	*27*	*6*	*112*	*0*	*0*	*16*	*335*	*351*
PATIENTS & VISITORS																			
Inpatients	2	6	0	2	1	2	1	4	1	4	0	1	1	3	0	2	7	24	31
Outpatients	10	35	3	9	4	14	7	25	6	22	2	8	5	16	3	10	40	139	179
Visitors to inpatients	4	10	2	4	1	4	5	14	3	8	2	5	2	6	2	6	22	57	79
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*15*	*50*	*5*	*15*	*6*	*20*	*14*	*44*	*10*	*34*	*5*	*15*	*8*	*26*	*6*	*18*	*69*	*221*	*289*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	2	0	1	0	1	1	3	0	1	0	1	0	1	0	1	2	11	13
Vendors/Services	0	1	0	1	0	1	0	1	0	1	0	1	0	2	0	0	2	10	12
Total other visitors	*1*	*3*	*0*	*2*	*0*	*2*	*1*	*4*	*1*	*3*	*0*	*2*	*1*	*3*	*0*	*1*	*4*	*21*	*25*
Subtotal Staff+Patients+Visitors	*17*	*80*	*6*	*51*	*9*	*98*	*16*	*73*	*13*	*71*	*7*	*44*	*15*	*141*	*6*	*19*	*89*	*577*	*666*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	17	80	6	51	9	98	16	73	13	71	7	44	15	141	6	19	89	577	666

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	BLOCKS 33-34 - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	2	0	3	0	6	0	2	0	3	0	5	0	7	0	0	1	28	28
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	1	0	1	0	2	0	1	0	1	0	0	0	1	0	0	1	6	7
Other Staff	1	19	2	24	4	55	1	18	3	48	2	29	9	125	0	0	23	319	343
Total staff	*2*	*22*	*2*	*28*	*5*	*63*	*1*	*21*	*4*	*52*	*2*	*34*	*10*	*134*	*0*	*0*	*25*	*353*	*378*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	2	8	10
Vendors/Services	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	1	7	8
Total other visitors	*0*	*2*	*0*	*2*	*0*	*2*	*1*	*3*	*0*	*2*	*0*	*1*	*0*	*2*	*0*	*1*	*3*	*15*	*18*
Subtotal Staff+Patients+Visitors	*2*	*24*	*2*	*30*	*5*	*65*	*2*	*24*	*4*	*54*	*3*	*35*	*10*	*136*	*0*	*1*	*28*	*368*	*396*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	2	24	2	30	5	65	2	24	4	54	3	35	10	136	0	1	28	368	396

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	ENTIRE CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	21	1	26	1	59	2	20	1	27	1	45	1	72	2	0	0	269	7	276
Fellows/Residents	3	0	3	0	8	1	3	0	0	0	0	0	6	1	0	0	22	2	24
Nurses/Nurse Practitioners	27	0	35	0	78	0	26	0	0	0	0	0	56	0	0	0	222	0	222
Postdocs/Students	2	0	3	1	6	1	2	0	4	1	0	0	4	1	0	0	21	4	25
Other Staff	82	3	105	4	237	10	78	3	206	9	126	5	537	22	0	0	1,372	57	1,429
Total staff	*135*	*5*	*172*	*6*	*389*	*13*	*128*	*4*	*237*	*10*	*171*	*6*	*674*	*25*	*0*	*0*	*1,906*	*70*	*1,976*
PATIENTS & VISITORS																			
Inpatients	13	3	3	1	5	1	10	3	9	2	3	1	6	2	4	1	54	14	68
Outpatients	63	17	16	4	25	7	46	12	40	11	15	4	29	8	18	5	251	67	318
Visitors to inpatients	24	7	11	3	10	3	35	11	19	6	13	4	16	5	15	5	143	43	186
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*100*	*27*	*30*	*8*	*40*	*11*	*90*	*25*	*67*	*19*	*31*	*9*	*52*	*14*	*37*	*10*	*448*	*124*	*572*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	18	4	8	2	7	2	25	6	14	3	9	2	12	3	11	2	104	23	127
Vendors/Services	10	2	10	2	10	2	10	2	10	2	5	1	13	3	2	0	71	14	85
Total other visitors	*28*	*6*	*18*	*4*	*17*	*4*	*36*	*8*	*24*	*5*	*14*	*3*	*25*	*5*	*13*	*3*	*175*	*37*	*212*
Subtotal Staff+Patients+Visitors	*263*	*38*	*221*	*18*	*446*	*28*	*254*	*37*	*328*	*34*	*216*	*18*	*751*	*45*	*50*	*13*	*2,529*	*231*	*2,760*
CHILDCARE																			
Childcare staff	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	0	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*12*	*11*	*4*	*4*	*8*	*8*	*6*	*5*	*23*	*21*	*0*	*0*	*61*	*57*	*118*
RESIDENTIAL																			
Contract holders	3	10	0	1	2	9	0	1	0	0	0	0	0	0	0	0	6	23	29
Spouses	3	9	0	1	2	8	0	1	0	0	0	0	0	0	0	0	6	21	27
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0	8	1	9
Vendors/Services	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	1	8
Total residential	*8*	*20*	*2*	*2*	*6*	*18*	*4*	*3*	*2*	*1*	*1*	*1*	*2*	*1*	*1*	*0*	*27*	*46*	*73*
GRAND TOTAL	275	62	228	25	464	56	262	43	339	43	223	24	776	67	51	13	2,617	334	2,951

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	NORTH CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	10	0	13	0	29	1	10	0	13	0	22	1	36	1	0	0	133	3	137
Fellows/Residents	3	0	3	0	8	1	3	0	0	0	0	0	6	1	0	0	22	2	24
Nurses/Nurse Practitioners	0	0	-1	0	-1	0	0	0	0	0	0	0	-1	0	0	0	-4	0	-4
Postdocs/Students	1	0	2	0	4	1	1	0	3	1	0	0	3	1	0	0	14	3	17
Other Staff	52	2	66	3	149	6	49	2	129	5	79	3	337	14	0	0	860	36	896
Total staff	*65*	*3*	*84*	*4*	*189*	*8*	*62*	*3*	*145*	*6*	*101*	*4*	*380*	*16*	*0*	*0*	*1,026*	*44*	*1,069*
PATIENTS & VISITORS																			
Inpatients	5	1	1	0	2	1	4	1	3	1	1	0	2	1	1	0	21	5	27
Outpatients	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	5	1	7
Visitors to inpatients	9	3	4	1	4	1	14	4	7	2	5	2	6	2	6	2	56	17	73
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*16*	*5*	*6*	*2*	*6*	*2*	*18*	*5*	*12*	*3*	*7*	*2*	*9*	*3*	*8*	*2*	*82*	*24*	*106*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	9	2	4	1	4	1	14	3	7	2	5	1	6	1	6	1	56	12	68
Vendors/Services	6	1	6	1	6	1	6	1	6	1	3	1	7	1	1	0	39	8	46
Total other visitors	*15*	*3*	*10*	*2*	*9*	*2*	*19*	*4*	*13*	*3*	*8*	*2*	*14*	*3*	*7*	*1*	*94*	*20*	*114*
Subtotal Staff+Patients+Visitors	*97*	*11*	*99*	*8*	*204*	*12*	*100*	*12*	*169*	*12*	*115*	*7*	*402*	*21*	*15*	*4*	*1,202*	*87*	*1,289*
CHILDCARE																			
Childcare staff	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	0	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*12*	*11*	*4*	*4*	*8*	*8*	*6*	*5*	*23*	*21*	*0*	*0*	*61*	*57*	*118*
RESIDENTIAL																			
Contract holders	3	10	0	1	2	9	0	1	0	0	0	0	0	0	0	0	6	23	29
Spouses	3	9	0	1	2	8	0	1	0	0	0	0	0	0	0	0	6	21	27
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0	8	1	9
Vendors/Services	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	7	1	8
Total residential	*8*	*20*	*2*	*2*	*6*	*18*	*4*	*3*	*2*	*1*	*1*	*1*	*2*	*1*	*1*	*0*	*27*	*46*	*73*
GRAND TOTAL	108	35	107	15	222	41	107	18	180	21	122	13	427	44	16	4	1,290	190	1,480

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	SOUTH CAMPUS - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	7	0	9	0	20	1	7	0	9	0	15	0	25	1	0	0	92	2	95
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	26	0	33	0	74	0	25	0	0	0	0	0	53	0	0	0	210	0	210
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	12	0	15	1	34	1	11	0	30	1	18	1	78	3	0	0	198	8	207
Total staff	*45*	*1*	*57*	*1*	*129*	*2*	*43*	*1*	*39*	*1*	*34*	*1*	*155*	*4*	*0*	*0*	*501*	*11*	*512*
PATIENTS & VISITORS																			
Inpatients	8	2	2	1	3	1	6	2	5	1	2	1	4	1	2	1	33	9	41
Outpatients	47	12	12	3	19	5	34	9	30	8	11	3	22	6	13	4	187	50	237
Visitors to inpatients	15	4	7	2	6	2	21	6	12	3	8	2	10	3	9	3	87	26	113
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*70*	*19*	*21*	*6*	*28*	*8*	*61*	*17*	*47*	*13*	*21*	*6*	*35*	*10*	*25*	*7*	*307*	*85*	*392*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	5	1	2	0	2	0	7	2	4	1	3	1	3	1	3	1	28	6	34
Vendors/Services	3	1	3	1	3	1	3	1	3	1	1	0	4	1	0	0	19	4	23
Total other visitors	*8*	*2*	*5*	*1*	*5*	*1*	*10*	*2*	*6*	*1*	*4*	*1*	*7*	*1*	*3*	*1*	*47*	*10*	*57*
Subtotal Staff+Patients+Visitors	*122*	*21*	*83*	*8*	*162*	*11*	*113*	*20*	*92*	*16*	*58*	*8*	*197*	*15*	*28*	*8*	*856*	*105*	*961*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	122	21	83	8	162	11	113	20	92	16	58	8	197	15	28	8	856	105	961

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	BLOCKS 33-34 - AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	3	0	4	0	10	0	3	0	4	0	7	0	12	0	0	0	44	1	45
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	2	0	2	0	5	0	2	0	0	0	0	0	4	0	0	0	15	0	15
Postdocs/Students	1	0	1	0	2	0	1	0	1	0	0	0	1	0	0	0	7	1	8
Other Staff	19	1	24	1	54	2	18	1	47	2	29	1	123	5	0	0	313	13	326
Total staff	*25*	*1*	*32*	*1*	*71*	*3*	*24*	*1*	*53*	*2*	*36*	*1*	*140*	*6*	*0*	*0*	*379*	*15*	*395*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	15	4	4	1	6	2	11	3	9	3	3	1	7	2	4	1	59	16	75
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*15*	*4*	*4*	*1*	*6*	*2*	*11*	*3*	*9*	*3*	*3*	*1*	*7*	*2*	*4*	*1*	*59*	*16*	*75*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	3	1	2	0	1	0	5	1	3	1	2	0	2	1	2	0	20	5	25
Vendors/Services	2	0	2	0	2	0	2	0	2	0	1	0	2	0	0	0	13	3	15
Total other visitors	*5*	*1*	*3*	*1*	*3*	*1*	*7*	*1*	*5*	*1*	*3*	*1*	*5*	*1*	*2*	*1*	*33*	*7*	*40*
Subtotal Staff+Patients+Visitors	*45*	*6*	*39*	*3*	*80*	*5*	*41*	*5*	*67*	*6*	*42*	*3*	*151*	*8*	*7*	*2*	*471*	*38*	*510*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	45	6	39	3	80	5	41	5	67	6	42	3	151	8	7	2	471	38	510

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	ENTIRE CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	13	0	17	1	38	0	12	1	17	1	29	1	46	0	0	5	171	176
Fellows/Residents	0	2	0	2	0	5	0	2	0	0	0	0	0	4	0	0	1	15	16
Nurses/Nurse Practitioners	0	11	0	14	0	31	0	10	0	0	0	0	0	22	0	0	0	88	88
Postdocs/Students	0	2	0	2	1	4	0	1	1	3	0	0	1	3	0	0	3	15	18
Other Staff	6	80	7	102	17	230	5	76	14	200	9	122	38	521	0	0	96	1,331	1,427
Total staff	*7*	*107*	*8*	*137*	*19*	*308*	*6*	*102*	*15*	*220*	*10*	*151*	*40*	*596*	*0*	*0*	*105*	*1,620*	*1,725*
PATIENTS & VISITORS																			
Inpatients	3	10	1	3	1	4	2	7	2	6	1	2	1	5	1	3	11	40	51
Outpatients	13	46	3	12	5	19	10	34	8	30	3	11	6	22	4	13	53	186	239
Visitors to inpatients	6	16	3	7	2	6	9	23	5	12	3	8	4	11	4	10	36	94	130
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*22*	*72*	*7*	*21*	*9*	*29*	*20*	*64*	*15*	*48*	*7*	*22*	*12*	*37*	*8*	*26*	*100*	*320*	*420*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	7	1	3	1	3	2	10	1	6	1	4	1	5	1	5	8	42	50
Vendors/Services	1	5	1	5	1	5	1	5	1	5	1	2	2	7	0	1	8	36	44
Total other visitors	*3*	*12*	*2*	*8*	*2*	*8*	*3*	*15*	*2*	*11*	*1*	*6*	*2*	*11*	*1*	*5*	*16*	*78*	*94*
Subtotal Staff+Patients+Visitors	*31*	*192*	*17*	*167*	*29*	*345*	*30*	*181*	*33*	*279*	*18*	*179*	*54*	*644*	*9*	*31*	*221*	*2,018*	*2,239*
CHILDCARE																			
Childcare staff	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*11*	*12*	*4*	*4*	*8*	*8*	*5*	*6*	*21*	*23*	*0*	*0*	*57*	*61*	*118*
RESIDENTIAL																			
Contract holders	11	3	1	0	10	2	1	0	0	0	0	0	0	0	0	0	24	6	30
Spouses	18	9	2	1	16	8	2	1	1	0	0	0	1	0	0	0	40	21	61
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	3
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	4
Total residential	*29*	*13*	*3*	*2*	*26*	*11*	*3*	*3*	*1*	*1*	*1*	*1*	*1*	*1*	*0*	*0*	*65*	*33*	*98*
GRAND TOTAL	64	209	25	174	66	368	37	188	42	288	24	185	76	668	9	32	343	2,112	2,455

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	NORTH CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	6	0	8	1	19	0	6	0	8	0	14	1	23	0	0	2	85	87
Fellows/Residents	0	2	0	2	0	5	0	2	0	0	0	0	0	4	0	0	1	15	16
Nurses/Nurse Practitioners	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	-2	-2
Postdocs/Students	0	1	0	1	1	3	0	1	0	2	0	0	0	2	0	0	2	10	12
Other Staff	4	50	5	64	10	144	3	48	9	125	6	76	24	327	0	0	60	834	895
Total staff	*4*	*59*	*5*	*76*	*12*	*171*	*4*	*56*	*10*	*136*	*6*	*91*	*25*	*355*	*0*	*0*	*66*	*943*	*1,008*
PATIENTS & VISITORS																			
Inpatients	1	4	0	1	0	2	1	3	1	2	0	1	1	2	0	1	4	16	20
Outpatients	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	4	5
Visitors to inpatients	2	6	1	3	1	2	3	9	2	5	1	3	2	4	2	4	14	37	51
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*4*	*11*	*1*	*4*	*1*	*4*	*4*	*12*	*3*	*8*	*2*	*4*	*2*	*6*	*2*	*5*	*19*	*56*	*75*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	4	0	2	0	2	1	5	1	3	0	2	0	3	0	2	4	23	27
Vendors/Services	1	3	1	3	1	3	1	3	1	3	0	1	1	4	0	0	4	20	24
Total other visitors	*1*	*7*	*1*	*5*	*1*	*4*	*2*	*8*	*1*	*6*	*1*	*3*	*1*	*6*	*1*	*3*	*9*	*42*	*51*
Subtotal Staff+Patients+Visitors	*9*	*77*	*8*	*84*	*14*	*179*	*10*	*77*	*14*	*149*	*8*	*98*	*28*	*367*	*2*	*8*	*94*	*1,041*	*1,135*
CHILDCARE																			
Childcare staff	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	4
Childcare children	4	4	5	5	11	11	4	4	8	8	5	5	21	21	0	0	57	57	114
Total childcare	*4*	*4*	*5*	*5*	*11*	*12*	*4*	*4*	*8*	*8*	*5*	*6*	*21*	*23*	*0*	*0*	*57*	*61*	*118*
RESIDENTIAL																			
Contract holders	11	3	1	0	10	2	1	0	0	0	0	0	0	0	0	0	24	6	30
Spouses	18	9	2	1	16	8	2	1	1	0	0	0	1	0	0	0	40	21	61
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	3
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	4
Total residential	*29*	*13*	*3*	*2*	*26*	*11*	*3*	*3*	*1*	*1*	*1*	*1*	*1*	*1*	*0*	*0*	*65*	*33*	*98*
GRAND TOTAL	42	94	16	91	51	202	17	84	23	159	14	105	51	391	2	9	216	1,135	1,351

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	SOUTH CAMPUS - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	4	0	6	0	13	0	4	0	6	0	10	0	16	0	0	2	59	60
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	10	0	13	0	29	0	10	0	0	0	0	0	21	0	0	0	83	83
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	1	12	1	15	2	33	1	11	2	29	1	18	5	75	0	0	14	193	206
Total staff	*1*	*26*	*1*	*34*	*3*	*76*	*1*	*25*	*2*	*35*	*2*	*27*	*6*	*112*	*0*	*0*	*16*	*335*	*350*
PATIENTS & VISITORS																			
Inpatients	2	6	0	2	1	2	1	4	1	4	0	1	1	3	0	2	7	24	31
Outpatients	10	35	2	9	4	14	7	25	6	22	2	8	5	16	3	10	39	139	178
Visitors to inpatients	4	10	2	4	1	4	5	14	3	8	2	5	2	6	2	6	22	57	79
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*15*	*50*	*5*	*15*	*6*	*20*	*14*	*44*	*10*	*34*	*5*	*15*	*8*	*25*	*6*	*18*	*68*	*220*	*288*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	2	0	1	0	1	1	3	0	1	0	1	0	1	0	1	2	11	13
Vendors/Services	0	1	0	1	0	1	0	1	0	1	0	1	0	2	0	0	2	10	12
Total other visitors	*1*	*3*	*0*	*2*	*0*	*2*	*1*	*4*	*1*	*3*	*0*	*2*	*1*	*3*	*0*	*1*	*4*	*21*	*25*
Subtotal Staff+Patients+Visitors	*17*	*80*	*6*	*51*	*9*	*98*	*15*	*73*	*13*	*71*	*7*	*44*	*14*	*141*	*6*	*19*	*88*	*576*	*664*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	17	80	6	51	9	98	15	73	13	71	7	44	14	141	6	19	88	576	664

Trip Generation

UCSF Mission Bay Campus

Year 2035 w/ S2b minus Existing

Population Group	BLOCKS 33-34 - PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	2	0	3	0	6	0	2	0	3	0	5	0	7	0	0	1	28	28
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	1	0	1	0	2	0	1	0	0	0	0	0	2	0	0	0	6	6
Postdocs/Students	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	1	5	6
Other Staff	1	18	2	23	4	53	1	17	3	46	2	28	9	119	0	0	22	304	326
Total staff	*1*	*22*	*2*	*28*	*4*	*62*	*1*	*21*	*4*	*49*	*2*	*32*	*9*	*129*	*0*	*0*	*24*	*343*	*366*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	3	11	1	3	1	4	2	8	2	7	1	3	1	5	1	3	12	44	56
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*3*	*11*	*1*	*3*	*1*	*4*	*2*	*8*	*2*	*7*	*1*	*3*	*1*	*5*	*1*	*3*	*12*	*44*	*56*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	2	8	10
Vendors/Services	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	1	7	8
Total other visitors	*0*	*2*	*0*	*2*	*0*	*2*	*1*	*3*	*0*	*2*	*0*	*1*	*0*	*2*	*0*	*1*	*3*	*15*	*18*
Subtotal Staff+Patients+Visitors	*5*	*35*	*3*	*32*	*6*	*68*	*4*	*31*	*6*	*58*	*3*	*36*	*11*	*136*	*1*	*4*	*39*	*401*	*440*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	5	35	3	32	6	68	4	31	6	58	3	36	11	136	1	4	39	401	440

3.4 MOUNT ZION
EXISTING TO 2035 GROWTH

Trip Generation
UCSF Mt Zion Campus
Year 2035 minus Existing

Population Group	Origins/Destinations [a]								
	San Francisco SD1	San Francisco SD2	San Francisco SD3	San Francisco SD4	East Bay	North Bay	South Bay	Outside Bay Area	All Origins
STAFF									
Faculty/Physicians	6%	25%	11%	11%	4%	20%	24%	0%	100%
Fellows/Residents	11%	47%	21%	20%	0%	0%	0%	0%	100%
Nurses/Nurse Practitioners	2%	10%	4%	4%	21%	30%	28%	0%	100%
Postdocs/Students	6%	24%	11%	10%	0%	0%	50%	0%	100%
Other Staff	4%	18%	8%	8%	25%	8%	28%	0%	100%
Total staff	*4%*	*18%*	*8%*	*8%*	*21%*	*13%*	*29%*	*0%*	*100%*
PATIENTS & VISITORS									
Inpatients	31%	24%	10%	15%	7%	5%	6%	2%	100%
Outpatients	31%	24%	10%	15%	7%	5%	6%	2%	100%
Visitors to inpatients	27%	22%	9%	14%	13%	8%	1%	6%	100%
Visitors with outpatients	31%	24%	10%	15%	7%	5%	6%	2%	100%
Total patients and visitors	*34%*	*25%*	*10%*	*16%*	*3%*	*3%*	*10%*	*-1%*	*100%*
OTHER VISITORS									
Community Center Visitors									
Faculty/Staff Visitors	27%	22%	9%	14%	13%	8%	1%	6%	100%
Vendors/Services	17%	17%	17%	17%	10%	13%	8%	0%	100%
Total other visitors	*24%*	*20%*	*12%*	*15%*	*12%*	*10%*	*3%*	*4%*	*100%*
Subtotal Staff+Patients+Visitors	*10%*	*19%*	*8%*	*9%*	*18%*	*11%*	*25%*	*0%*	*100%*
CHILDCARE									
Childcare staff									
Childcare children									
Total childcare									
RESIDENTIAL									
Contract holders									
Spouses									
Children									
Visitors									
Vendors/Services									
Total residential									
GRAND TOTAL	10%	19%	8%	9%	18%	11%	25%	0%	100%

[a] Origin/Destination for staff based on UCSF Transportation Services Annual Commute Survey 2013 for the Mt Zion Campus.
Origin/Destination for patients, visitors, vendors and services based on Mt Zion Transportation Surveys, 1992

Trip Generation
UCSF Mt Zion Campus
Year 2035 minus Existing

Population Group	AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	1	0	5	0	2	0	2	0	1	0	4	0	5	0	0	0	21	0	21
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	1	0	5	0	2	0	2	0	10	0	14	0	13	0	0	0	46	1	47
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	2
Other Staff	3	0	14	0	6	0	6	0	19	0	6	0	22	0	0	0	77	1	78
Total staff	*6*	*0*	*24*	*0*	*11*	*0*	*10*	*0*	*30*	*0*	*24*	*0*	*40*	*1*	*0*	*0*	*146*	*2*	*148*
PATIENTS & VISITORS																			
Inpatients	-2	-2	-2	-1	-1	0	-1	-1	-1	0	0	0	0	0	0	0	-8	-5	-13
Outpatients	31	21	24	16	10	7	15	10	7	5	5	3	6	4	2	1	100	67	167
Visitors to inpatients	-2	-2	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0	-1	0	-8	-6	-14
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*26*	*18*	*20*	*13*	*8*	*6*	*13*	*8*	*6*	*4*	*4*	*3*	*6*	*4*	*1*	*1*	*84*	*56*	*140*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total other visitors	*1*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*3*	*2*	*5*
Subtotal Staff+Patients+Visitors	*33*	*18*	*45*	*14*	*19*	*6*	*24*	*9*	*36*	*4*	*29*	*3*	*46*	*4*	*2*	*1*	*233*	*60*	*293*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	33	18	45	14	19	6	24	9	36	4	29	3	46	4	2	1	233	60	293

Trip Generation
UCSF Mt Zion Campus
Year 2035 minus Existing

Population Group	PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	1	1	2	0	1	0	1	0	0	1	2	1	2	0	0	4	9	13
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	1	0	2	0	1	0	1	0	5	0	7	0	6	0	0	0	23	23
Postdocs/Students	0	0	1	1	0	0	0	0	0	0	0	0	2	2	0	0	3	3	6
Other Staff	0	3	0	14	0	6	0	6	0	19	0	6	0	22	0	0	1	77	78
Total staff	*0*	*5*	*2*	*19*	*1*	*9*	*1*	*8*	*0*	*24*	*1*	*15*	*3*	*32*	*0*	*0*	*8*	*112*	*120*
PATIENTS & VISITORS																			
Inpatients	-1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-2	-4
Outpatients	7	7	5	5	2	2	3	3	2	2	1	1	1	1	0	0	23	23	46
Visitors to inpatients	-2	-2	-2	-2	-1	-1	-1	-1	-1	-1	-1	-1	0	0	-1	-1	-9	-9	-18
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*4*	*4*	*3*	*3*	*1*	*1*	*2*	*2*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*12*	*12*	*24*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total other visitors	*0*	*1*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*	*4*	*6*
Subtotal Staff+Patients+Visitors	*5*	*10*	*5*	*23*	*2*	*10*	*3*	*11*	*1*	*25*	*1*	*16*	*4*	*33*	*0*	*0*	*22*	*128*	*150*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	5	10	5	23	2	10	3	11	1	25	1	16	4	33	0	0	22	128	150

Trip Generation
UCSF Mission Center
Year 2035 minus Existing

Population Group	Origins/Destinations [a]								
	San Francisco SD1	San Francisco SD2	San Francisco SD3	San Francisco SD4	East Bay	North Bay	South Bay	Outside Bay Area	All Origins
STAFF									
Faculty/Physicians	9%	11%	25%	8%	4%	20%	24%	0%	100%
Fellows/Residents									
Nurses/Nurse Practitioners									
Postdocs/Students	8%	10%	24%	8%	0%	0%	50%	0%	100%
Other Staff	7%	9%	19%	6%	18%	6%	33%	2%	100%
Total staff	*7%*	*9%*	*20%*	*7%*	*17%*	*7%*	*32%*	*2%*	*100%*
PATIENTS & VISITORS									
Inpatients									
Outpatients									
Visitors to inpatients									
Visitors with outpatients									
Total patients and visitors									
OTHER VISITORS									
Community Center Visitors									
Faculty/Staff Visitors	17%	8%	7%	24%	13%	9%	11%	11%	100%
Vendors/Services	14%	14%	14%	14%	14%	7%	19%	2%	100%
Total other visitors	*16%*	*11%*	*11%*	*19%*	*14%*	*8%*	*15%*	*6%*	*100%*
Subtotal Staff+Patients+Visitors	*7%*	*9%*	*19%*	*7%*	*17%*	*7%*	*31%*	*2%*	*100%*
CHILDCARE									
Childcare staff									
Childcare children									
Total childcare									
RESIDENTIAL									
Contract holders									
Spouses									
Children									
Visitors									
Vendors/Services									
Total residential									
GRAND TOTAL	7%	9%	19%	7%	17%	7%	31%	2%	100%

[a] Origin/Destination for staff based on UCSF Transportation Services Annual Commute Survey 2013 for Mt Zion and Mission Ctr Campuses
Origin/Destination for visitors, vendors and services based on Parnassus Heights Transportation Surveys, 1992

Trip Generation
UCSF Mission Center
Year 2035 minus Existing

Population Group	AM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	1	0	2	0	4	0	1	0	1	0	3	0	4	0	0	0	15	0	15
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
Other Staff	6	0	8	0	18	0	6	0	17	0	6	0	30	1	2	0	93	2	95
Total staff	*8*	*0*	*10*	*0*	*22*	*0*	*7*	*0*	*17*	*0*	*9*	*0*	*34*	*1*	*2*	*0*	*109*	*2*	*111*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	5	1	6
Vendors/Services	1	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	4	1	5
Total other visitors	*1*	*0*	*1*	*0*	*1*	*0*	*2*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*9*	*2*	*11*
Subtotal Staff+Patients+Visitors	*9*	*0*	*11*	*0*	*23*	*1*	*9*	*1*	*19*	*1*	*9*	*0*	*36*	*1*	*3*	*0*	*118*	*4*	*122*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	9	0	11	0	23	1	9	1	19	1	9	0	36	1	3	0	118	4	122

Trip Generation
UCSF Mission Center
Year 2035 minus Existing

Population Group	PM Peak Hour Vehicle Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	1	0	1	0	2	0	1	0	0	0	2	0	2	0	0	0	9	9
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Other Staff	0	6	0	8	1	17	0	6	1	16	0	5	2	29	0	2	5	90	95
Total staff	*0*	*7*	*0*	*9*	*1*	*20*	*0*	*7*	*1*	*17*	*0*	*7*	*2*	*32*	*0*	*2*	*5*	*100*	*105*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Total other visitors	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*4*	*4*
Subtotal Staff+Patients+Visitors	*0*	*8*	*0*	*9*	*1*	*20*	*0*	*7*	*1*	*17*	*0*	*8*	*2*	*33*	*0*	*2*	*5*	*104*	*109*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	0	8	0	9	1	20	0	7	1	17	0	8	2	33	0	2	5	104	109

4. PUBLIC TRANSIT TRIP DISTRIBUTION
AM AND PM PEAK HOUR

4.1 PARNASSUS HEIGHTS
EXISTING TO 2035 GROWTH

Trip Generation
UCSF Parnassus Campus
Year 2035 minus Existing

Population Group	AM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Nurses/Nurse Practitioners	0	0	0	0	-1	0	0	0	-1	0	-1	0	-1	0	0	0	-5	0	-5
Postdocs/Students	3	0	4	0	8	0	3	0	2	0	2	0	8	0	0	0	29	1	30
Other Staff	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	4	0	4
Total staff	*3*	*0*	*4*	*0*	*8*	*0*	*3*	*0*	*2*	*0*	*1*	*0*	*8*	*0*	*0*	*0*	*29*	*1*	*30*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-1	-3
Outpatients	2	0	1	0	1	0	2	0	2	0	1	0	1	0	1	0	10	2	12
Visitors to inpatients	-1	0	0	0	0	0	-1	0	-1	0	0	0	0	0	0	0	-4	-1	-5
Visitors with outpatients	2	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	7	1	8
Total patients and visitors	*3*	*0*	*1*	*0*	*1*	*0*	*2*	*0*	*2*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*11*	*1*	*12*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*6*	*0*	*4*	*0*	*10*	*0*	*5*	*0*	*4*	*0*	*2*	*0*	*9*	*0*	*1*	*0*	*40*	*2*	*42*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*
RESIDENTIAL																			
Contract holders	0	2	0	1	1	4	0	1	0	0	0	0	0	0	0	0	1	7	8
Spouses	0	1	0	1	1	3	0	1	0	0	0	0	0	0	0	0	1	5	6
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total residential	*1*	*3*	*0*	*1*	*1*	*6*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*12*	*16*
GRAND TOTAL	7	3	5	1	11	6	5	1	4	0	2	0	10	1	1	0	45	14	59

Trip Generation
UCSF Parnassus Campus
Year 2035 minus Existing

Population Group	PM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	-2	-2
Postdocs/Students	0	2	0	3	0	6	0	2	0	1	0	1	0	6	0	0	1	21	22
Other Staff	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	4	4
Total staff	*0*	*2*	*0*	*3*	*0*	*6*	*0*	*2*	*0*	*2*	*0*	*1*	*0*	*7*	*0*	*0*	*1*	*24*	*25*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	-2
Outpatients	0	2	0	0	0	1	0	1	0	1	0	0	0	1	0	0	2	7	9
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-2	-3
Visitors with outpatients	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	2	5	7
Total patients and visitors	*1*	*2*	*0*	*1*	*0*	*1*	*0*	*2*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*1*	*2*	*9*	*11*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*1*	*5*	*0*	*3*	*1*	*7*	*0*	*4*	*0*	*4*	*0*	*2*	*1*	*8*	*0*	*1*	*3*	*33*	*36*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*
RESIDENTIAL																			
Contract holders	2	0	1	0	3	1	1	0	0	0	0	0	0	0	0	0	6	1	7
Spouses	2	1	1	0	4	2	1	0	0	0	0	0	0	0	0	0	8	4	12
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*4*	*1*	*1*	*1*	*7*	*3*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*14*	*6*	*20*
GRAND TOTAL	4	6	2	4	8	10	2	4	1	4	0	2	1	8	0	1	17	40	57

Trip Generation
UCSF Parnassus Campus
Year 2035 minus Existing

Population Group	Additional AM Peak Hour Public Transit Trips who use UCSF Shuttle												Additional PM Peak Hour Public Transit Trips who use UCSF Shuttle											
	San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
STAFF																								
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	1	0	0	0	0	0	7	0	0	0	7	0	0	1	0	0	0	0	0	5	0	0	0	5
Other Staff	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total staff	*1*	*0*	*0*	*0*	*0*	*0*	*7*	*0*	*0*	*0*	*8*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*5*	*0*	*0*	*0*	*6*
PATIENTS & VISITORS																								
Inpatients																								
Outpatients																								
Visitors to inpatients																								
Visitors with outpatients																								
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors																								
Faculty/Staff Visitors																								
Vendors/Services																								
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*1*	*0*	*0*	*0*	*0*	*0*	*7*	*0*	*0*	*0*	*8*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*5*	*0*	*0*	*0*	*6*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children																								
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders																								
Spouses																								
Children																								
Visitors																								
Vendors/Services																								
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	1	0	0	0	0	0	7	0	0	0	8	0	0	1	0	0	0	0	0	5	0	0	0	6

4.2 MISSION BAY
EXISTING TO 2015 GROWTH

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	AM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	2	0	2	0	5	0	2	0	2	0	4	0	6	0	0	0	21	0	21
Fellows/Residents	2	0	2	0	5	0	2	0	0	0	0	0	3	0	0	0	13	0	13
Nurses/Nurse Practitioners	3	0	4	0	8	0	3	0	0	0	0	0	6	0	0	0	23	0	23
Postdocs/Students	2	0	2	0	5	0	2	0	3	0	0	0	3	0	0	0	17	0	17
Other Staff	7	0	9	0	21	0	7	0	18	0	11	0	47	0	0	0	119	0	119
Total staff	*15*	*0*	*19*	*0*	*43*	*0*	*14*	*0*	*23*	*0*	*14*	*0*	*64*	*0*	*0*	*0*	*193*	*0*	*193*
PATIENTS & VISITORS																			
Inpatients	2	1	1	0	1	0	2	1	2	0	1	0	1	0	1	0	10	3	13
Outpatients	13	3	3	1	5	1	9	3	8	2	3	1	6	2	4	1	51	14	65
Visitors to inpatients	2	1	1	0	1	0	2	1	1	0	1	0	1	0	1	0	10	3	13
Visitors with outpatients	9	2	2	1	4	1	7	2	6	1	2	1	4	1	3	1	36	9	45
Total patients and visitors	*26*	*7*	*7*	*2*	*10*	*3*	*20*	*5*	*17*	*5*	*7*	*2*	*12*	*3*	*8*	*2*	*107*	*29*	*136*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	1	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	5	1	6
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*1*	*0*	*5*	*1*	*6*
Subtotal Staff+Patients+Visitors	*42*	*7*	*26*	*2*	*54*	*3*	*35*	*6*	*41*	*5*	*22*	*2*	*77*	*3*	*9*	*2*	*305*	*30*	*335*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	42	7	26	2	54	3	35	6	41	5	22	2	77	3	9	2	305	30	335

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	PM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	1	0	1	0	3	0	1	0	1	0	2	0	3	0	0	0	13	13
Fellows/Residents	0	1	0	1	0	3	0	1	0	0	0	0	0	2	0	0	0	9	9
Nurses/Nurse Practitioners	0	1	0	2	0	4	0	1	0	0	0	0	0	3	0	0	0	10	10
Postdocs/Students	0	1	0	2	0	4	0	1	0	2	0	0	0	2	0	0	0	12	12
Other Staff	0	7	0	9	1	20	0	7	1	17	0	11	2	45	0	0	4	115	119
Total staff	*0*	*11*	*0*	*15*	*1*	*33*	*0*	*11*	*1*	*21*	*0*	*13*	*2*	*56*	*0*	*0*	*4*	*159*	*163*
PATIENTS & VISITORS																			
Inpatients	0	2	0	0	0	1	0	1	0	1	0	0	0	1	0	0	2	7	9
Outpatients	2	9	1	2	1	4	2	7	2	6	1	2	1	4	1	3	10	38	48
Visitors to inpatients	1	1	0	1	0	0	1	2	0	1	0	1	0	1	0	1	3	7	10
Visitors with outpatients	2	6	1	2	1	3	1	5	1	4	0	2	1	3	1	2	8	26	34
Total patients and visitors	*5*	*19*	*1*	*5*	*2*	*8*	*4*	*15*	*4*	*12*	*1*	*5*	*3*	*9*	*2*	*6*	*23*	*78*	*101*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*
Subtotal Staff+Patients+Visitors	*6*	*30*	*2*	*20*	*3*	*41*	*5*	*26*	*4*	*33*	*2*	*18*	*4*	*65*	*2*	*6*	*27*	*238*	*265*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	6	30	2	20	3	41	5	26	4	33	2	18	4	65	2	6	27	238	265

Trip Generation
UCSF Mission Bay Campus
Year 2015 minus Existing

Population Group	Additional AM Peak Hour Public Transit Trips who use UCSF Shuttle												Additional PM Peak Hour Public Transit Trips who use UCSF Shuttle											
	San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
STAFF																								
Faculty/Physicians	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	1	0	5	0	0	0	5	0	0	0	12	0	0	1	0	4	0	0	0	4	0	0	0	8
Other Staff	9	0	7	0	0	0	6	0	0	0	22	0	0	9	0	7	0	0	0	6	0	0	1	22
Total staff	*12*	*0*	*12*	*0*	*0*	*0*	*11*	*0*	*0*	*0*	*35*	*0*	*0*	*11*	*0*	*11*	*0*	*0*	*0*	*9*	*0*	*0*	*1*	*30*
PATIENTS & VISITORS																								
Inpatients																								
Outpatients																								
Visitors to inpatients																								
Visitors with outpatients																								
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors																								
Faculty/Staff Visitors																								
Vendors/Services																								
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*12*	*0*	*12*	*0*	*0*	*0*	*11*	*0*	*0*	*0*	*35*	*0*	*0*	*11*	*0*	*11*	*0*	*0*	*0*	*9*	*0*	*0*	*1*	*30*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children																								
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders																								
Spouses																								
Children																								
Visitors																								
Vendors/Services																								
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	12	0	12	0	0	0	11	0	0	0	35	0	0	11	0	11	0	0	0	9	0	0	1	30

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2015 minus Existing

AM Peak Hour	INBOUND										OUTBOUND									
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
Muni	131	-	1	-	-	2	1	-	2	138	13	-	0	-	-	0	0	-	0	14
Muni + BART		47	12	-	1	-	-	3	7	71		5	1	-	0	-	-	0	1	7
AC Transit			-	4	-	-	-	-	-	4			-	0	-	-	-	-	-	0
BART				51	2	-	-	1	4	59				5	0	-	-	0	0	6
Caltrain					26	-	-	1	-	27					3	-	-	0	-	3
Ferry						2	-	-	-	2						0	-	-	-	0
GGT							5	-	-	5							1	-	-	1
SamTrans								-	-	0								-	-	0
Other									-	0									-	0
Total	131	47	13	55	29	4	6	5	13	305	13	5	1	5	3	0	1	1	1	30

AM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total
S. Francisco SD1	95%			5%						100%	47	75%	20%		5%						100%	8
S. Francisco SD2	95%			5%						100%	30	80%			20%						100%	2
S. Francisco SD3	59%	31%		10%						100%	61	45%	25%		30%						100%	3
S. Francisco SD4	69%	25%		6%						100%	40	45%	30%		25%						100%	6
East Bay		24%	36%	38%		2%				100%	46		20%	40%	35%		5%				100%	5
North Bay						15%	27%		58%	100%	24						10%	69%		21%	100%	2
South Bay		35%		25%	34%			6%		100%	88		30%		5%	45%			20%		100%	4
Outside Bay Area				100%						100%	10				20%	40%				40%	100%	3
Total	138	71	17	63	30	4	6	5	13	347	347	14	7	2	6	3	0	1	1	1	34	34

AM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle
S. Francisco SD1	45	-	-	2	-	-	-	-	-	47	3	6	2	-	0	-	-	-	-	-	8	0
S. Francisco SD2	28	-	-	1	-	-	-	-	-	30	2	2	-	-	0	-	-	-	-	-	2	0
S. Francisco SD3	36	19	-	6	-	-	-	-	-	61	4	1	1	-	1	-	-	-	-	-	3	0
S. Francisco SD4	28	10	-	2	-	-	-	-	-	40	3	3	2	-	2	-	-	-	-	-	6	0
East Bay	-	11	17	18	-	1	-	-	-	46	12	-	1	2	2	-	0	-	-	-	5	0
North Bay	-	-	-	-	-	4	7	-	14	24	0	-	-	-	-	-	0	1	-	0	2	0
South Bay	-	31	-	22	30	-	-	5	-	88	11	-	1	-	0	2	-	-	1	-	4	0
Outside Bay Area	-	-	-	10	-	-	-	-	-	10	0	-	-	-	1	1	-	-	-	1	3	0
Total	137	71	17	62	30	5	7	5	14	347	35	12	7	2	6	3	0	1	1	1	34	0

AM Peak Hour	INBOUND									OUTBOUND									
	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
S. Francisco SD1	45	-	5	-	-	-	-	-	50	8	-	2	-	-	-	-	-	10
S. Francisco SD2	28	-	3	-	-	-	-	-	32	2	-	0	-	-	-	-	-	2
S. Francisco SD3	55	-	29	-	-	-	-	-	84	2	-	2	-	-	-	-	-	4
S. Francisco SD4	38	-	15	-	-	-	-	-	53	5	-	4	-	-	-	-	-	8
East Bay	11	22	35	-	1	-	-	-	70	1	2	3	-	0	-	-	-	7
North Bay	-	-	-	-	4	7	-	14	24	-	-	-	-	0	1	-	0	2
South Bay	31	-	57	36	-	-	6	-	130	1	-	1	2	-	-	1	-	5
Outside Bay Area	-	-	10	-	-	-	-	-	10	-	-	1	1	-	-	-	1	3
Total	208	22	155	36	5	7	6	14	453	19	2	13	3	0	1	1	1	41

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2015 minus Existing

	K-T Ingleside-3rd Street							10 Townsend							22 Fillmore						
				Balboa Park to Sunnydale		Sunnydale to Balboa Park					24th/Potrero to Jackson/Steiner		Jackson/Steiner to 24th/Potrero					Third/20th to Fillmore/Bay		Fillmore/Bay to Third/20th	
				dwntwn	MB to	South	MB to				South	MB to	North	MB to				South	MB to	West	MB to
AM Peak Hour	%	In	Out	to MB	South	to MB	dwntwn	%	In	Out	to MB	North	to MB	South	%	In	Out	to MB	West	to MB	South
S. Francisco SD1	100%	45	8	45			8		-	-		-	-			-	-		-	-	
S. Francisco SD2	50%	14	1	14			1	10%	3	0		0	3		40%	11	1		1	11	
S. Francisco SD3	95%	52	2	13	2	39	1		-	-	-	-	-	-	5%	3	0	3	-	-	0
S. Francisco SD4	30%	11	1	9	0	3	1	20%	8	1		1	8		50%	19	2	17	1	2	2
East Bay	100%	11	1	11			1		-	-		-	-			-	-		-	-	
North Bay	100%	-	-	-			-		-	-		-	-			-	-		-	-	
South Bay	20%	6	0		0	6			-	-		-	-		80%	25	1		1	25	
Outside Bay Area	100%	-	-	-			-		-	-		-	-			-	-		-	-	
Total		140	14	92	2	48	11		10	1	-	1	10	-		58	4	20	2	38	2

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2015 minus Existing

PM Peak Hour	INBOUND										OUTBOUND									
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
Muni	12	-	0	-	-	0	0	-	0	12	103	-	1	-	-	2	1	-	2	107
Muni + BART		4	1	-	0	-	-	0	1	6		37	10	-	1	-	-	2	6	55
AC Transit			-	0	-	-	-	-	-	0			-	3	-	-	-	-	-	3
BART				5	0	-	-	0	0	5				40	2	-	-	1	3	46
Caltrain					2	-	-	0	-	2					20	-	-	1	-	21
Ferry						0	-	-	-	0						2	-	-	-	2
GGT							0	-	-	0							4	-	-	4
SamTrans								-	-	0								-	-	0
Other									-	0									-	0
Total	12	4	1	5	3	0	1	0	1	27	103	37	10	43	22	3	5	4	10	238

PM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total
S. Francisco SD1	75%	20%		5%						100%	7	95%			5%						100%	35
S. Francisco SD2	80%			20%						100%	2	95%			5%						100%	22
S. Francisco SD3	50%	25%		25%						100%	3	60%	20%		20%						100%	46
S. Francisco SD4	47%	30%		23%						100%	5	83%	5%		12%						100%	29
East Bay		28%	35%	35%		2%				100%	5		15%	38%	47%		2%				102%	38
North Bay						15%	45%		40%	100%	2						15%	25%		55%	95%	20
South Bay		30%		15%	45%			10%		100%	5		44%		20%	31%			5%		100%	74
Outside Bay Area				20%	50%				30%	100%	2		80%		20%						100%	7
Total	12	6	2	6	3	0	1	0	1	31	31	107	55	14	49	23	3	5	4	10	271	271

PM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle
S. Francisco SD1	5	1	-	0	-	-	-	-	-	7	0	33	-	-	2	-	-	-	-	-	35	3
S. Francisco SD2	2	-	-	0	-	-	-	-	-	2	0	21	-	-	1	-	-	-	-	-	22	2
S. Francisco SD3	2	1	-	1	-	-	-	-	-	3	0	28	9	-	9	-	-	-	-	-	46	4
S. Francisco SD4	2	2	-	1	-	-	-	-	-	5	0	24	1	-	4	-	-	-	-	-	29	2
East Bay	-	1	2	2	-	0	-	-	-	5	0	-	6	14	18	-	1	-	-	-	39	11
North Bay	-	-	-	-	-	0	1	-	1	2	0	-	-	-	-	-	3	5	-	11	19	0
South Bay	-	1	-	1	2	-	-	0	-	5	0	-	32	-	15	23	-	-	4	-	74	9
Outside Bay Area	-	-	-	0	1	-	-	-	1	2	0	-	5	-	1	-	-	-	-	-	7	0
Total	11	6	2	6	3	0	1	0	1	31	1	106	54	14	49	23	4	5	4	11	271	30

PM Peak Hour	INBOUND									OUTBOUND									
	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
S. Francisco SD1	6	-	2	-	-	-	-	-	8	33	-	5	-	-	-	-	-	37
S. Francisco SD2	2	-	0	-	-	-	-	-	2	21	-	3	-	-	-	-	-	24
S. Francisco SD3	2	-	2	-	-	-	-	-	4	37	-	22	-	-	-	-	-	59
S. Francisco SD4	4	-	3	-	-	-	-	-	7	26	-	7	-	-	-	-	-	33
East Bay	1	2	3	-	0	-	-	-	7	6	19	29	-	1	-	-	-	55
North Bay	-	-	-	-	0	1	-	1	2	-	-	-	-	3	5	-	11	19
South Bay	1	-	2	2	-	-	1	-	7	32	-	50	28	-	-	5	-	115
Outside Bay Area	-	-	0	1	-	-	-	1	2	5	-	7	-	-	-	-	-	12
Total	17	2	13	3	0	1	1	1	38	160	19	123	28	4	5	5	11	355

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2015 minus Existing

	K-T Ingleside-3rd Street							10 Townsend							22 Fillmore						
				Balboa Park to Sunnydale		Sunnydale to Balboa Park					24th/Potrero to Jackson/Steiner		Jackson/Steiner to 24th/Potrero					Third/20th to Fillmore/Bay		Fillmore/Bay to Third/20th	
				dwntwn	MB to	South	MB to				South	MB to	North	MB to				South	MB to	West	MB to
PM Peak Hour	%	In	Out	to MB	South	to MB	dwntwn	%	In	Out	to MB	North	to MB	South	%	In	Out	to MB	West	to MB	South
S. Francisco SD1	100%	6	33	6			33	0%	-	-		-	-		0%	-	-		-	-	
S. Francisco SD2	50%	1	11	1			11	10%	0	2		2	0		40%	1	9		9	1	
S. Francisco SD3	95%	2	35	1	26	2	9	0%	-	-	-	-	-	-	5%	0	2	0	-	-	2
S. Francisco SD4	30%	1	8	1	2	0	6	20%	1	5		5	1		50%	2	13	2	3	0	10
East Bay	100%	1	6	1			6	0%	-	-		-	-		0%	-	-		-	-	
North Bay	100%	-	-	-			-	0%	-	-		-	-		0%	-	-		-	-	
South Bay	20%	0	6		6	0		0%	-	-		-	-		80%	1	26		26	1	
Outside Bay Area	100%	-	5	-			5	0%	-	-		-	-		0%	-	-		-	-	
Total		12	104	10	35	2	69		1	7	-	7	1	-		4	49	2	38	2	12

4.3 MISSION BAY
EXISTING TO 2040 GROWTH

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	AM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	6	0	8	0	17	0	6	0	8	0	13	0	21	0	0	0	78	0	78
Fellows/Residents	2	0	2	0	5	0	2	0	0	0	0	0	3	0	0	0	13	0	13
Nurses/Nurse Practitioners	6	0	7	0	16	0	5	0	0	0	0	0	12	0	0	0	46	0	46
Postdocs/Students	3	0	3	0	8	0	3	0	5	0	0	0	5	0	0	0	26	0	26
Other Staff	52	0	66	0	150	0	50	0	130	0	79	0	340	0	0	0	867	0	867
Total staff	*68*	*0*	*87*	*0*	*195*	*0*	*65*	*0*	*143*	*0*	*92*	*0*	*380*	*0*	*0*	*0*	*1,030*	*0*	*1,030*
PATIENTS & VISITORS																			
Inpatients	7	2	2	0	3	1	5	1	4	1	2	0	3	1	2	0	28	7	35
Outpatients	25	7	6	2	10	3	18	5	16	4	6	2	12	3	7	2	100	27	127
Visitors to inpatients	5	2	2	1	2	1	7	2	4	1	3	1	3	1	3	1	29	9	38
Visitors with outpatients	17	4	4	1	7	2	13	3	11	3	4	1	8	2	5	1	70	18	88
Total patients and visitors	*54*	*14*	*15*	*4*	*22*	*6*	*43*	*12*	*35*	*9*	*14*	*4*	*26*	*7*	*17*	*5*	*227*	*61*	*288*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	4	1	2	0	1	0	5	1	3	1	2	0	2	1	2	1	21	5	26
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*4*	*1*	*2*	*0*	*1*	*0*	*5*	*1*	*3*	*1*	*2*	*0*	*2*	*1*	*2*	*1*	*21*	*5*	*26*
Subtotal Staff+Patients+Visitors	*126*	*15*	*103*	*4*	*219*	*6*	*113*	*13*	*181*	*10*	*109*	*4*	*409*	*8*	*19*	*5*	*1,278*	*66*	*1,344*
CHILDCARE																			
Childcare staff	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	3	0	3
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*3*	*0*	*3*
RESIDENTIAL																			
Contract holders	0	5	0	1	0	4	0	1	0	0	0	0	0	0	0	0	0	10	10
Spouses	1	4	0	0	1	3	0	0	0	0	0	0	0	0	0	0	2	8	10
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*1*	*8*	*0*	*1*	*1*	*7*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*19*	*23*
GRAND TOTAL	127	24	103	5	220	13	113	14	182	11	109	5	410	8	20	5	1,285	85	1,370

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	PM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	4	0	5	0	11	0	4	0	5	0	8	0	13	0	0	0	49	49
Fellows/Residents	0	1	0	1	0	3	0	1	0	0	0	0	0	2	0	0	0	9	9
Nurses/Nurse Practitioners	0	2	0	3	0	7	0	2	0	0	0	0	0	5	0	0	0	19	19
Postdocs/Students	0	2	0	2	0	5	0	2	0	3	0	0	0	3	0	0	1	18	19
Other Staff	2	50	2	64	4	145	1	48	4	126	2	77	10	329	0	0	26	840	866
Total staff	*2*	*59*	*2*	*76*	*5*	*171*	*2*	*57*	*4*	*134*	*2*	*85*	*10*	*352*	*0*	*0*	*27*	*935*	*962*
PATIENTS & VISITORS																			
Inpatients	1	5	0	1	1	2	1	4	1	3	0	1	1	2	0	1	6	21	27
Outpatients	5	19	1	5	2	8	4	14	3	12	1	4	2	9	1	5	21	75	96
Visitors to inpatients	1	3	1	1	0	1	2	5	1	3	1	2	1	2	1	2	7	19	26
Visitors with outpatients	4	13	1	3	2	5	3	9	2	8	1	3	2	6	1	4	15	51	66
Total patients and visitors	*12*	*40*	*3*	*11*	*5*	*16*	*9*	*31*	*8*	*26*	*3*	*10*	*6*	*19*	*4*	*13*	*49*	*166*	*215*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	1	8	9
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*2*	*0*	*1*	*0*	*1*	*0*	*1*	*0*	*1*	*1*	*8*	*9*
Subtotal Staff+Patients+Visitors	*13*	*101*	*5*	*87*	*10*	*188*	*11*	*90*	*12*	*161*	*6*	*96*	*16*	*373*	*4*	*13*	*77*	*1,109*	*1,186*
CHILDCARE																			
Childcare staff	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	3	3
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*3*	*3*
RESIDENTIAL																			
Contract holders	5	0	1	0	4	0	1	0	0	0	0	0	0	0	0	0	10	1	11
Spouses	7	3	1	0	6	3	1	0	0	0	0	0	0	0	0	0	16	7	23
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*12*	*4*	*1*	*0*	*10*	*3*	*1*	*0*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*26*	*8*	*34*
GRAND TOTAL	25	104	7	88	20	191	12	90	12	162	6	97	17	374	4	13	103	1,120	1,223

Trip Generation

UCSF Mission Bay Campus

Year 2040 S1 minus Existing

Population Group	Additional AM Peak Hour Public Transit Trips who use UCSF Shuttle												Additional PM Peak Hour Public Transit Trips who use UCSF Shuttle											
	San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
STAFF																								
Faculty/Physicians	3	0	0	0	0	0	0	0	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	2
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	2	0	8	0	0	0	8	0	0	0	18	1	0	1	0	6	0	0	0	6	0	0	0	13
Other Staff	69	0	52	0	0	0	42	0	0	0	164	0	2	67	2	50	0	0	1	41	0	0	5	158
Total staff	*75*	*0*	*60*	*0*	*0*	*0*	*50*	*0*	*0*	*0*	*185*	*1*	*2*	*71*	*2*	*56*	*0*	*0*	*1*	*47*	*0*	*0*	*5*	*173*
PATIENTS & VISITORS																								
Inpatients																								
Outpatients																								
Visitors to inpatients																								
Visitors with outpatients																								
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors																								
Faculty/Staff Visitors																								
Vendors/Services																								
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*75*	*0*	*60*	*0*	*0*	*0*	*50*	*0*	*0*	*0*	*185*	*1*	*2*	*71*	*2*	*56*	*0*	*0*	*1*	*47*	*0*	*0*	*5*	*173*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Childcare children																								
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*
RESIDENTIAL																								
Contract holders																								
Spouses																								
Children																								
Visitors																								
Vendors/Services																								
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	75	0	60	0	0	0	50	0	0	0	185	1	2	71	2	56	0	0	1	47	0	0	5	174

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2040 S1 minus Existing

AM Peak Hour	INBOUND										OUTBOUND									
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
Muni	554	-	4	-	-	9	4	-	9	580	37	-	0	-	-	1	0	-	1	38
Muni + BART		199	52	-	4	-	-	13	30	299		13	3	-	0	-	-	1	2	20
AC Transit			-	17	-	-	-	-	-	17			-	1	-	-	-	-	-	1
BART				216	9	-	-	4	17	247				14	1	-	-	0	1	16
Caltrain					108	-	-	4	-	112					7	-	-	0	-	7
Ferry						9	-	-	-	9						1	-	-	-	1
GGT							22	-	-	22							1	-	-	1
SamTrans								-	-	0								-	-	0
Other									-	0									-	0
Total	554	199	56	234	121	17	26	22	56	1285	37	13	4	15	8	1	2	1	4	85

AM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total
S. Francisco SD1	95%			5%						100%	145	75%	20%		5%						100%	27
S. Francisco SD2	95%			5%						100%	118	70%			30%						100%	6
S. Francisco SD3	77%	15%		8%						100%	250	45%	25%		30%						100%	15
S. Francisco SD4	84%	11%		5%						100%	129	40%	30%		30%						100%	16
East Bay		25%	36%	37%		2%				100%	207		20%	38%	40%		2%				100%	12
North Bay	24%					10%	21%		45%	100%	124						25%	45%		30%	100%	5
South Bay		42%		27%	26.5%			4.5%		100%	467		30%		5%	55%			10%		100%	9
Outside Bay Area				100%						100%	22				5%	55%				40%	100%	6
Total	580	299	74	264	125	17	26	22	56	1,462	1,462	38	20	5	17	8	1	2	1	4	97	97

AM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle
S. Francisco SD1	137	-	-	7	-	-	-	-	-	145	17	20	5	-	1	-	-	-	-	-	27	0
S. Francisco SD2	112	-	-	6	-	-	-	-	-	118	14	4	-	-	2	-	-	-	-	-	6	0
S. Francisco SD3	193	38	-	20	-	-	-	-	-	250	29	7	4	-	5	-	-	-	-	-	15	0
S. Francisco SD4	108	14	-	6	-	-	-	-	-	129	15	6	5	-	5	-	-	-	-	-	16	0
East Bay	-	52	74	77	-	4	-	-	-	207	60	-	2	5	5	-	0	-	-	-	12	0
North Bay	30	-	-	-	-	12	26	-	56	124	0	-	-	-	-	-	1	2	-	2	5	0
South Bay	-	196	-	126	124	-	-	21	-	467	50	-	3	-	0	5	-	-	1	-	9	0
Outside Bay Area	-	-	-	22	-	-	-	-	-	22	0	-	-	-	0	3	-	-	-	2	6	0
Total	580	300	74	265	124	17	26	21	56	1462	185	38	19	5	18	8	2	2	1	4	97	1

AM Peak Hour	INBOUND									OUTBOUND									
	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
S. Francisco SD1	137	-	24	-	-	-	-	-	162	26	-	7	-	-	-	-	-	32
S. Francisco SD2	112	-	20	-	-	-	-	-	131	4	-	2	-	-	-	-	-	6
S. Francisco SD3	230	-	87	-	-	-	-	-	317	11	-	8	-	-	-	-	-	19
S. Francisco SD4	123	-	36	-	-	-	-	-	158	11	-	10	-	-	-	-	-	21
East Bay	52	103	158	-	6	-	-	-	319	2	5	7	-	0	-	-	-	15
North Bay	30	-	-	-	12	26	-	56	124	-	-	-	-	1	2	-	2	5
South Bay	196	-	346	147	-	-	25	-	713	3	-	3	5	-	-	1	-	12
Outside Bay Area	-	-	22	-	-	-	-	-	22	-	-	0	3	-	-	-	2	6
Total	880	103	692	147	18	26	25	56	1,947	57	5	38	9	2	2	1	4	117

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2040 S1 minus Existing

	K-T Ingleside-3rd Street							10 Townsend							22 Fillmore						
				Balboa Park to Sunnydale		Sunnydale to Balboa Park					24th/Potrero to Jackson/Steiner		Jackson/Steiner to 24th/Potrero					Third/20th to Fillmore/Bay		Fillmore/Bay to Third/20th	
AM Peak Hour	%	In	Out	dwntwn to MB	MB to South	South to MB	MB to dwntwn	%	In	Out	South to MB	MB to North	North to MB	MB to South	%	In	Out	South to MB	MB to West	West to MB	MB to South
S. Francisco SD1	100%	137	26	137			26	0%	-	-		-	-		0%	-	-		-	-	
S. Francisco SD2	50%	56	2	56			2	10%	11	0		0	11		40%	45	2		2	45	
S. Francisco SD3	95%	219	10	55	8	164	3	0%	-	-	-	-	-	-	5%	12	1	12	-	-	1
S. Francisco SD4	30%	37	3	28	1	9	3	20%	25	2		2	25		50%	61	6	55	1	6	4
East Bay	100%	52	2	52			2	0%	-	-		-	-		0%	-	-		-	-	
North Bay	100%	30	-	30			-	0%	-	-		-	-		0%	-	-		-	-	
South Bay	20%	39	1		1	39		0%	-	-		-	-		80%	157	2		2	157	
Outside Bay Area	100%	-	-	-			-	0%	-	-		-	-		0%	-	-		-	-	
Total		570	44	357	9	213	35		36	3	-	3	36	-		275	10	67	5	208	5

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2040 S1 minus Existing

PM Peak Hour	INBOUND										OUTBOUND									
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
Muni	44	-	0	-	-	1	0	-	1	46	483	-	4	-	-	8	4	-	8	505
Muni + BART		16	4	-	0	-	-	1	2	24		173	45	-	4	-	-	11	26	260
AC Transit			-	1	-	-	-	-	-	1			-	15	-	-	-	-	-	15
BART				17	1	-	-	0	1	20				189	8	-	-	4	15	215
Caltrain					9	-	-	0	-	9					94	-	-	4	-	98
Ferry						1	-	-	-	1						8	-	-	-	8
GGT							2	-	-	2							19	-	-	19
SamTrans								-	-	0								-	-	0
Other									-	0									-	0
Total	44	16	5	19	10	1	2	2	5	103	483	173	49	204	106	15	23	19	49	1120

PM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total
S. Francisco SD1	75%	20%		5%						100%	29	95%			5%						100%	119
S. Francisco SD2	75%			25%						100%	8	95%			5%						100%	100
S. Francisco SD3	60%	25%		15%						100%	23	87%	2%		11%						100%	218
S. Francisco SD4	35%	35%		30%						100%	14	80%	2%		18%						100%	103
East Bay		20%	45%	33%		2%				100%	14		18%	35%	45%		2%				100%	184
North Bay						18%	34%		48%	100%	7	24.5%					10%	21%		44.5%	100%	110
South Bay		25%		22%	43%			10%		100%	19		49%		21%	25.5%			4.5%		100%	426
Outside Bay Area				20%	50%				30%	100%	4		75%		25%						100%	15
Total	46	24	6	21	10	1	2	2	5	117	117	505	260	64	230	109	15	23	19	49	1,275	1,275

PM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle
S. Francisco SD1	21	6	-	1	-	-	-	-	-	29	1	113	-	-	6	-	-	-	-	-	119	16
S. Francisco SD2	6	-	-	2	-	-	-	-	-	8	0	95	-	-	5	-	-	-	-	-	100	13
S. Francisco SD3	14	6	-	3	-	-	-	-	-	23	1	189	4	-	24	-	-	-	-	-	218	29
S. Francisco SD4	5	5	-	4	-	-	-	-	-	14	0	82	2	-	19	-	-	-	-	-	103	14
East Bay	-	3	6	5	-	0	-	-	-	14	2	-	33	64	83	-	4	-	-	-	184	56
North Bay	-	-	-	-	-	1	2	-	3	7	0	27	-	-	-	-	11	23	-	49	110	0
South Bay	-	5	-	4	8	-	-	2	-	19	1	-	209	-	89	109	-	-	19	-	426	47
Outside Bay Area	-	-	-	1	2	-	-	-	1	4	0	-	11	-	4	-	-	-	-	-	15	0
Total	46	24	6	21	10	1	2	2	5	117	5	507	260	64	230	109	15	23	19	49	1275	174

PM Peak Hour	INBOUND									OUTBOUND									
	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
S. Francisco SD1	27	-	8	-	-	-	-	-	35	113	-	22	-	-	-	-	-	134
S. Francisco SD2	6	-	2	-	-	-	-	-	8	95	-	18	-	-	-	-	-	113
S. Francisco SD3	19	-	10	-	-	-	-	-	29	194	-	57	-	-	-	-	-	251
S. Francisco SD4	10	-	10	-	-	-	-	-	20	84	-	34	-	-	-	-	-	118
East Bay	3	7	8	-	0	-	-	-	19	33	88	147	-	5	-	-	-	274
North Bay	-	-	-	-	1	2	-	3	7	27	-	-	-	11	23	-	49	110
South Bay	5	-	9	9	-	-	2	-	25	209	-	317	132	-	-	23	-	681
Outside Bay Area	-	-	1	2	-	-	-	1	4	11	-	15	-	-	-	-	-	27
Total	70	7	48	11	2	2	2	5	146	766	88	610	132	16	23	23	49	1,708

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2040 S1 minus Existing

	K-T Ingleside-3rd Street							10 Townsend							22 Fillmore						
				Balboa Park to Sunnydale		Sunnydale to Balboa Park					24th/Potrero to Jackson/Steiner		Jackson/Steiner to 24th/Potrero					Third/20th to Fillmore/Bay		Fillmore/Bay to Third/20th	
PM Peak Hour	%	In	Out	dwntwn to MB	MB to South	South to MB	MB to dwntwn	%	In	Out	South to MB	MB to North	North to MB	MB to South	%	In	Out	South to MB	MB to West	West to MB	MB to South
S. Francisco SD1	100%	27	113	27			113	0%	-	-		-	-		0%	-	-		-	-	
S. Francisco SD2	50%	3	47	3			47	10%	1	9		9	1		40%	2	38		38	2	
S. Francisco SD3	95%	18	184	5	138	14	46	0%	-	-	-	-	-	-	5%	1	10	1	-	-	10
S. Francisco SD4	30%	3	25	2	6	1	19	20%	2	17		17	2		50%	5	42	4	11	0	32
East Bay	100%	3	33	3			33	0%	-	-		-	-		0%	-	-		-	-	
North Bay	100%	-	27	-			27	0%	-	-		-	-		0%	-	-		-	-	
South Bay	20%	1	42		42	1		0%	-	-		-	-		80%	4	167		167	4	
Outside Bay Area	100%	-	11	-			11	0%	-	-		-	-		0%	-	-		-	-	
Total		55	483	40	186	15	297		3	26	-	26	3	-		12	257	5	215	7	41

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2035 with S2b minus Existing

AM Peak Hour	INBOUND										OUTBOUND									
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
Muni	572	-	4	-	-	9	4	-	9	599	43	-	0	-	-	1	0	-	1	45
Muni + BART		206	54	-	4	-	-	13	31	309		15	4	-	0	-	-	1	2	23
AC Transit			-	18	-	-	-	-	-	18			-	1	-	-	-	-	-	1
BART				224	9	-	-	4	18	255				17	1	-	-	0	1	19
Caltrain					112	-	-	4	-	116					8	-	-	0	-	9
Ferry						9	-	-	-	9						1	-	-	-	1
GGT							22	-	-	22							2	-	-	2
SamTrans								-	-	0								-	-	0
Other									-	0									-	0
Total	572	206	58	241	125	18	27	22	58	1328	43	15	4	18	9	1	2	2	4	99

AM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total
S. Francisco SD1	95%			5%						100%	159	75%	20%		5%						100%	31
S. Francisco SD2	95%			5%						100%	121	70%			30%						100%	7
S. Francisco SD3	79%	15%		6%						100%	255	45%	25%		30%						100%	17
S. Francisco SD4	73%	22%		5%						100%	139	45%	30%		25%						100%	19
East Bay		26.5%	35.5%	36%		2%				100%	214		20%	38%	40%		2%				100%	15
North Bay	22%					11%	21%		46%	100%	127						18%	42%		40%	100%	6
South Bay		39.0%		28.5%	27.5%			5.0%		100%	470		30%		5%	55%			10%		100%	11
Outside Bay Area				100%						100%	27				20%	55%				25%	100%	7
Total	599	309	76	273	130	18	27	22	58	1,511	1,511	45	23	6	20	10	1	2	2	4	113	113

AM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle
S. Francisco SD1	151	-	-	8	-	-	-	-	-	159	17	23	6	-	2	-	-	-	-	-	31	0
S. Francisco SD2	115	-	-	6	-	-	-	-	-	121	13	5	-	-	2	-	-	-	-	-	7	0
S. Francisco SD3	201	38	-	15	-	-	-	-	-	255	28	8	4	-	5	-	-	-	-	-	17	0
S. Francisco SD4	102	31	-	7	-	-	-	-	-	139	15	8	6	-	5	-	-	-	-	-	19	0
East Bay	-	57	76	77	-	4	-	-	-	214	57	-	3	6	6	-	0	-	-	-	15	0
North Bay	28	-	-	-	-	14	27	-	58	127	0	-	-	-	-	-	1	3	-	2	6	0
South Bay	-	183	-	134	129	-	-	23	-	470	48	-	3	-	1	6	-	-	1	-	11	0
Outside Bay Area	-	-	-	27	-	-	-	-	-	27	0	-	-	-	1	4	-	-	-	2	7	0
Total	597	309	76	274	129	18	27	23	58	1511	178	44	22	6	21	10	1	3	1	4	113	0

AM Peak Hour	INBOUND									OUTBOUND									
	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
S. Francisco SD1	151	-	25	-	-	-	-	-	176	29	-	8	-	-	-	-	-	37
S. Francisco SD2	115	-	19	-	-	-	-	-	134	5	-	2	-	-	-	-	-	7
S. Francisco SD3	240	-	81	-	-	-	-	-	321	12	-	9	-	-	-	-	-	21
S. Francisco SD4	132	-	53	-	-	-	-	-	185	14	-	10	-	-	-	-	-	24
East Bay	57	104	162	-	6	-	-	-	328	3	6	9	-	0	-	-	-	18
North Bay	28	-	-	-	14	27	-	58	127	-	-	-	-	1	3	-	2	6
South Bay	183	-	340	151	-	-	27	-	701	3	-	4	6	-	-	1	-	15
Outside Bay Area	-	-	27	-	-	-	-	-	27	-	-	1	4	-	-	-	2	7
Total	906	104	706	151	20	27	27	58	1,998	66	6	44	10	1	3	1	4	135

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2035 with S2b minus Existing

		K-T Ingleside-3rd Street								10 Townsend					22 Fillmore							
AM Peak Hour		Balboa Park to Sunnydale		Sunnydale to Balboa Park		dwntwn to MB	MB to dwntwn	South to MB	MB to South		24th/Potrero to Jackson/Steiner		Jackson/Steiner to 24th/Potrero			Third/20th to Fillmore/Bay		Fillmore/Bay to Third/20th		Total %	check	check
S. Francisco SD1	100%	151	151	29	29	151	29			0%	29	-	151	-	0%	29	-	151	-	100%	180	180
S. Francisco SD2	50%	115	57	5	2	57	2			10%	5	0	115	11	40%	5	2	115	46	100%	120	120
S. Francisco SD3	95%	240	228	12	11	57	3	171	8	0%	240	-	12	-	5%	240	12	12	1	100%	251	251
S. Francisco SD4	30%	132	40	14	4	30	3	10	1	20%	14	3	132	26	50%	132	66	14	7	100%	147	147
East Bay	100%	57	57	3	3	57	3			0%	3	-	57	-	0%	3	-	57	-	100%	60	60
North Bay	100%	28	28	-	-	28	-			0%	-	-	28	-	0%	-	-	28	-	100%	28	28
South Bay	20%	183	37	3	1			1	37	0%	3	-	183	-	80%	3	3	183	147	100%	187	187
Outside Bay Area	100%	-	-	-	-	-	-			0%	-	-	-	-	0%	-	-	-	-	100%	-	-
Total		906	597	66	51	380	41	181	46		294	3	678	38		413	83	559	200		972	972

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2035 with S2b minus Existing

PM Peak Hour	INBOUND										OUTBOUND									
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
Muni	49	-	0	-	-	1	0	-	1	51	495	-	4	-	-	8	4	-	8	518
Muni + BART		18	5	-	0	-	-	1	3	26		178	46	-	4	-	-	12	27	267
AC Transit			-	2	-	-	-	-	-	2			-	15	-	-	-	-	-	15
BART				19	1	-	-	0	2	22				193	8	-	-	4	15	221
Caltrain					10	-	-	0	-	10					97	-	-	4	-	101
Ferry						1	-	-	-	1						8	-	-	-	8
GGT							2	-	-	2							19	-	-	19
SamTrans								-	-	0								-	-	0
Other									-	0									-	0
Total	49	18	5	21	11	2	2	2	5	113	495	178	50	209	108	15	23	19	50	1149

PM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	All Modes	Total
S. Francisco SD1	75%	20%		5%						100%	31	95%			5%						100%	129
S. Francisco SD2	80%			20%						100%	8	95%			5%						100%	102
S. Francisco SD3	55%	25%		20%						100%	24	84%	5%		11%						100%	220
S. Francisco SD4	45%	30%		25%						100%	16	78%	3%		19%						100%	110
East Bay		20%	45%	33%		2%				100%	16		18%	35%	45%		2%				100%	189
North Bay						17%	35%		48%	100%	7	24%					10%	21%		45%	100%	112
South Bay		30%		20%	40%			10%		100%	20		48%		21%	26.5%			4.5%		100%	427
Outside Bay Area				25%	45%				30%	100%	5		75%		25%						100%	18
Total	51	26	6	23	11	2	2	2	5	129	129	518	267	66	236	112	15	23	19	50	1,308	1,308

PM Peak Hour	INBOUND											OUTBOUND										
	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle	Muni	Muni + BART	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Subtotal	Transit + Shuttle
S. Francisco SD1	24	6	-	2	-	-	-	-	-	31	1	123	-	-	6	-	-	-	-	-	129	16
S. Francisco SD2	7	-	-	2	-	-	-	-	-	8	0	97	-	-	5	-	-	-	-	-	102	13
S. Francisco SD3	13	6	-	5	-	-	-	-	-	24	1	185	11	-	24	-	-	-	-	-	220	27
S. Francisco SD4	7	5	-	4	-	-	-	-	-	16	0	86	3	-	21	-	-	-	-	-	110	14
East Bay	-	3	7	5	-	0	-	-	-	16	2	-	34	66	85	-	4	-	-	-	189	54
North Bay	-	-	-	-	-	1	3	-	4	7	0	27	-	-	-	-	11	23	-	50	112	0
South Bay	-	6	-	4	8	-	-	2	-	20	1	-	205	-	90	113	-	-	19	-	427	45
Outside Bay Area	-	-	-	1	2	-	-	-	2	5	0	-	14	-	5	-	-	-	-	-	18	0
Total	51	26	7	23	10	2	3	2	5	129	5	517	267	66	236	113	15	23	19	50	1308	168

PM Peak Hour	INBOUND									OUTBOUND									
	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total	Muni	AC Transit	BART	Caltrain	Ferry	GGT	Sam Trans	Other	Total
S. Francisco SD1	30	-	9	-	-	-	-	-	39	123	-	22	-	-	-	-	-	145
S. Francisco SD2	7	-	2	-	-	-	-	-	9	97	-	18	-	-	-	-	-	114
S. Francisco SD3	19	-	11	-	-	-	-	-	30	196	-	62	-	-	-	-	-	258
S. Francisco SD4	12	-	9	-	-	-	-	-	22	89	-	38	-	-	-	-	-	127
East Bay	3	8	9	-	0	-	-	-	21	34	89	149	-	5	-	-	-	277
North Bay	-	-	-	-	1	3	-	4	7	27	-	-	-	11	23	-	50	112
South Bay	6	-	11	9	-	-	2	-	28	205	-	313	136	-	-	23	-	676
Outside Bay Area	-	-	1	2	-	-	-	2	5	14	-	18	-	-	-	-	-	32
Total	77	8	52	11	2	3	2	5	160	784	89	620	136	16	23	23	50	1,742

Public Transit Assignment by Service Provider
Mission Bay Campus - Year 2035 with S2b minus Existing

		K-T Ingleside-3rd Street								10 Townsend					22 Fillmore							
PM Peak Hour		Balboa Park to Sunnydale		Sunnydale to Balboa Park		dwntwn to MB	MB to dwntwn	South to MB	MB to South		24th/Potrero to Jackson/Steiner		Jackson/Steiner to 24th/Potrero			Third/20th to Fillmore/Bay		Fillmore/Bay to Third/20th		Total %	check	check
S. Francisco SD1	100%	30	30	123	123	30	123			0%	123	-	30	-	0%	123	-	30	-	100%	152	152
S. Francisco SD2	50%	7	3	97	48	3	48			10%	97	10	7	1	40%	97	39	7	3	100%	103	103
S. Francisco SD3	95%	19	18	196	186	5	47	14	140	0%	19	-	196	-	5%	19	1	196	10	100%	215	215
S. Francisco SD4	30%	12	4	89	27	3	20	1	7	20%	89	18	12	2	50%	12	6	89	45	100%	101	101
East Bay	100%	3	3	34	34	3	34			0%	34	-	3	-	0%	34	-	3	-	100%	37	37
North Bay	100%	-	-	27	27	-	27			0%	27	-	-	-	0%	27	-	-	-	100%	27	27
South Bay	20%	6	1	205	41			41	1	0%	205	-	6	-	80%	205	164	6	5	100%	211	211
Outside Bay Area	100%	-	-	14	14	-	14			0%	14	-	-	-	0%	14	-	-	-	100%	14	14
Total		77	59	784	500	44	312	55	148		607	28	254	3		530	210	331	62		861	861

4.4 MOUNT ZION
EXISTING TO 2035 GROWTH

Trip Generation
UCSF Mt Zion Campus
Year 2035 minus Existing

Population Group	AM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	2	0	1	0	1	0	4	0	6	0	5	0	0	0	19	0	19
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	2
Other Staff	2	0	10	0	4	0	4	0	13	0	4	0	15	0	0	0	52	0	52
Total staff	*3*	*0*	*12*	*0*	*5*	*0*	*5*	*0*	*17*	*0*	*10*	*0*	*21*	*0*	*0*	*0*	*74*	*0*	*74*
PATIENTS & VISITORS																			
Inpatients	-1	-1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	-2	-5
Outpatients	12	8	9	6	4	3	6	4	3	2	2	1	2	2	1	1	39	26	65
Visitors to inpatients	-1	-1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	-2	-5
Visitors with outpatients	9	6	7	4	3	2	4	3	2	1	1	1	2	1	1	0	28	18	46
Total patients and visitors	*19*	*12*	*15*	*10*	*6*	*4*	*9*	*6*	*4*	*3*	*3*	*2*	*4*	*3*	*1*	*1*	*61*	*40*	*101*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*2*
Subtotal Staff+Patients+Visitors	*22*	*13*	*27*	*10*	*12*	*4*	*15*	*6*	*21*	*3*	*13*	*2*	*25*	*3*	*1*	*1*	*136*	*41*	*177*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	22	13	27	10	12	4	15	6	21	3	13	2	25	3	1	1	136	41	177

Trip Generation
UCSF Mt Zion Campus
Year 2035 minus Existing

Population Group	PM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	1	0	0	0	0	0	2	0	3	0	3	0	0	0	10	10
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	4
Other Staff	0	2	0	10	0	4	0	4	0	13	0	4	0	15	0	0	0	52	52
Total staff	*0*	*3*	*0*	*11*	*0*	*5*	*0*	*5*	*0*	*15*	*0*	*7*	*1*	*18*	*0*	*0*	*2*	*64*	*66*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	-2
Outpatients	3	3	2	2	1	1	1	1	1	1	0	0	1	1	0	0	9	9	18
Visitors to inpatients	-1	-1	-1	-1	0	0	-1	-1	-1	-1	0	0	0	0	0	0	-4	-4	-8
Visitors with outpatients	2	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0	7	7	14
Total patients and visitors	*4*	*4*	*3*	*3*	*1*	*1*	*2*	*2*	*1*	*1*	*0*	*0*	*1*	*1*	*0*	*0*	*11*	*11*	*22*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*
Subtotal Staff+Patients+Visitors	*4*	*6*	*3*	*14*	*1*	*6*	*2*	*7*	*1*	*16*	*0*	*8*	*2*	*19*	*0*	*0*	*13*	*76*	*89*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	4	6	3	14	1	6	2	7	1	16	0	8	2	19	0	0	13	76	89

Trip Generation
UCSF Mt Zion Campus
Year 2035 minus Existing

Population Group	Additional AM Peak Hour Public Transit Trips who use UCSF Shuttle												Additional PM Peak Hour Public Transit Trips who use UCSF Shuttle											
	San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
STAFF																								
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	1	0	2	0	0	0	2	0	0	0	5	0	0	0	0	1	0	0	0	1	0	0	0	2
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	2	0	0	0	0	0	2	0	0	0	4	0	0	2	0	0	0	0	0	2	0	0	0	4
Total staff	*2*	*0*	*2*	*0*	*0*	*0*	*5*	*0*	*0*	*0*	*9*	*0*	*0*	*2*	*0*	*1*	*0*	*0*	*0*	*3*	*0*	*0*	*0*	*6*
PATIENTS & VISITORS																								
Inpatients																								
Outpatients																								
Visitors to inpatients																								
Visitors with outpatients																								
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors																								
Faculty/Staff Visitors																								
Vendors/Services																								
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*2*	*0*	*2*	*0*	*0*	*0*	*5*	*0*	*0*	*0*	*9*	*0*	*0*	*2*	*0*	*1*	*0*	*0*	*0*	*3*	*0*	*0*	*0*	*6*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children																								
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders																								
Spouses																								
Children																								
Visitors																								
Vendors/Services																								
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	2	0	2	0	0	0	5	0	0	0	9	0	0	2	0	1	0	0	0	3	0	0	0	6

Trip Generation
UCSF Mission Center
Year 2035 minus Existing

Population Group	AM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
Other Staff	4	0	5	0	12	0	4	0	11	0	4	0	20	0	1	0	60	0	60
Total staff	*4*	*0*	*5*	*0*	*12*	*0*	*4*	*0*	*11*	*0*	*4*	*0*	*20*	*0*	*1*	*0*	*62*	*0*	*62*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*4*	*0*	*5*	*0*	*12*	*0*	*4*	*0*	*11*	*0*	*4*	*0*	*20*	*0*	*1*	*0*	*62*	*0*	*62*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	4	0	5	0	12	0	4	0	11	0	4	0	20	0	1	0	62	0	62

Trip Generation
UCSF Mission Center
Year 2035 minus Existing

Population Group	PM Peak Hour Public Transit Distribution																		
	San Francisco SD1		San Francisco SD2		San Francisco SD3		San Francisco SD4		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
STAFF																			
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Other Staff	0	4	0	5	0	11	0	4	0	11	0	4	1	19	0	1	2	59	61
Total staff	*0*	*4*	*0*	*5*	*0*	*12*	*0*	*4*	*0*	*11*	*0*	*4*	*1*	*20*	*0*	*1*	*2*	*60*	*62*
PATIENTS & VISITORS																			
Inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors to inpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors with outpatients	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																			
Community Center Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Faculty/Staff Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*0*	*4*	*0*	*5*	*0*	*12*	*0*	*4*	*0*	*11*	*0*	*4*	*1*	*20*	*0*	*1*	*2*	*60*	*62*
CHILDCARE																			
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																			
Contract holders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spouses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendors/Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	0	4	0	5	0	12	0	4	0	11	0	4	1	20	0	1	2	60	62

Trip Generation
UCSF Mission Center
Year 2035 minus Existing

Population Group	Additional AM Peak Hour Public Transit Trips who use UCSF Shuttle												Additional PM Peak Hour Public Transit Trips who use UCSF Shuttle											
	San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins		San Francisco		East Bay		North Bay		South Bay		Outside Bay Area		All Origins	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
STAFF																								
Faculty/Physicians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fellows/Residents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nurses/Nurse Practitioners	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Postdocs/Students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Staff	2	0	3	0	0	0	7	0	0	0	12	0	0	2	0	2	0	0	0	7	0	0	0	11
Total staff	*2*	*0*	*3*	*0*	*0*	*0*	*7*	*0*	*0*	*0*	*12*	*0*	*0*	*2*	*0*	*2*	*0*	*0*	*0*	*7*	*0*	*0*	*0*	*11*
PATIENTS & VISITORS																								
Inpatients																								
Outpatients																								
Visitors to inpatients																								
Visitors with outpatients																								
Total patients and visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
OTHER VISITORS																								
Community Center Visitors																								
Faculty/Staff Visitors																								
Vendors/Services																								
Total other visitors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Subtotal Staff+Patients+Visitors	*2*	*0*	*3*	*0*	*0*	*0*	*7*	*0*	*0*	*0*	*12*	*0*	*0*	*2*	*0*	*2*	*0*	*0*	*0*	*7*	*0*	*0*	*0*	*11*
CHILDCARE																								
Childcare staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Childcare children																								
Total childcare	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
RESIDENTIAL																								
Contract holders																								
Spouses																								
Children																								
Visitors																								
Vendors/Services																								
Total residential	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GRAND TOTAL	2	0	3	0	0	0	7	0	0	0	12	0	0	2	0	2	0	0	0	7	0	0	0	11

5. PARKING DEMAND CALCULATIONS

5.1 PARNASSUS HEIGHTS

Trip Generation
UCSF Parnassus Campus
Existing 2011-2012

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	2,070	66%	1.05	1,296	648	0.85	551
Fellows/Residents	1,739	33%	1.02	565	283	0.85	241
Nurses/Nurse Practitioners	2,821	60%	1.04	1,622	811	0.85	689
Postdocs/Students	5,249	11%	1.05	551	276	0.85	235
Other Staff	9,597	40%	1.21	3,167	1,584	0.85	1,346
Total staff	*21,477*	*37%*	*1.12*	*7,201*	*3,602*	*0.85*	*3,062*
PATIENTS & VISITORS							
Inpatients	996	43%	1.19	359	180	0.30	54
Outpatients	4,148	43%	2.03	1,493	747	0.30	224
Visitors to inpatients	2,490	49%	1.06	1,150	575	0.40	230
Visitors with outpatients	2,904	43%					
Total patients and visitors	*10,538*	*44%*	*1.56*	*3,002*	*1,502*	*0.34*	*508*
OTHER VISITORS							
Community Center Visitors	580	55%	1.06	300	150	0.40	60
Faculty/Staff Visitors	900	55%	1.06	465	233	0.40	93
Vendors/Services	360	71%	1.01	254	127	0.60	76
Total other visitors	*1,840*	*58%*	*1.05*	*1,019*	*510*	*0.45*	*229*
Subtotal Staff+Patients+Visitors	*33,855*	*41%*	*1.23*	*11,222*	*5,614*	*0.68*	*3,799*
CHILDCARE							
Childcare staff	36	40%	1.20	12	6	0.85	5
Childcare children	100	0%					
Total childcare	*136*	*11%*	*1.20*	*12*	*6*	*0.83*	*5*
RESIDENTIAL (222 Units)							
Contract holders	436	15%			200	1.00	200
Spouses	608	30%					
Children	0	0%					
Visitors	40	55%	1.05	21	11	0.40	4
Vendors/Services	20	71%	1.01	14	7	0.60	4
Total residential	*1,104*	*26%*		*35*	*218*		*208*
GRAND TOTAL	35,095	40%	1.25	11,269	5,838	0.69	4,012

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Parnassus Campus.

Trip Generation
UCSF Parnassus Campus
Year 2035

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	2,070	66%	1.05	1,296	648	0.85	551
Fellows/Residents	1,783	33%	1.02	579	290	0.85	247
Nurses/Nurse Practitioners	2,652	60%	1.04	1,525	763	0.85	649
Postdocs/Students	6,228	11%	1.05	654	327	0.85	278
Other Staff	9,667	40%	1.21	3,190	1,595	0.85	1,356
Total staff	*22,400*	*36%*	*1.12*	*7,244*	*3,623*	*0.85*	*3,081*
PATIENTS & VISITORS							
Inpatients	924	43%	1.19	333	167	0.30	50
Outpatients	4,446	43%	2.03	1,601	801	0.30	240
Visitors to inpatients	2,310	49%	1.06	1,067	534	0.40	214
Visitors with outpatients	3,112	43%					
Total patients and visitors	*10,792*	*44%*	*1.59*	*3,001*	*1,502*	*0.34*	*504*
OTHER VISITORS							
Community Center Visitors	580	55%	1.06	300	150	0.40	60
Faculty/Staff Visitors	900	55%	1.06	465	233	0.40	93
Vendors/Services	360	71%	1.01	254	127	0.60	76
Total other visitors	*1,840*	*58%*	*1.05*	*1,019*	*510*	*0.45*	*229*
Subtotal Staff+Patients+Visitors	*35,032*	*40%*	*1.24*	*11,264*	*5,635*	*0.68*	*3,814*
CHILDCARE							
Childcare staff	45	40%	1.20	15	8	0.85	7
Childcare children	120	0%					
Total childcare	*165*	*11%*	*1.20*	*15*	*8*	*0.88*	*7*
RESIDENTIAL (551 Units)							
Contract holders	855	15%			400	1.00	400
Spouses	851	30%					
Children	0	0%					
Visitors	80	55%	1.07	41	21	0.40	8
Vendors/Services	40	71%	1.01	28	14	0.60	8
Total residential	*1,825*	*25%*		*69*	*435*		*416*
GRAND TOTAL	37,022	39%	1.27	11,348	6,078	0.70	4,237

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Parnassus Campus.

Trip Generation
UCSF Mission Bay Campus
Existing 2011-2012

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	813	50%	1.05	386	193	0.85	164
Fellows/Residents	0	0%	0.00	0	0	0.85	0
Nurses/Nurse Practitioners	43	45%	0.98	20	10	0.85	9
Postdocs/Students	1,416	12%	1.09	156	78	0.85	66
Other Staff	5,240	37%	1.13	1,714	857	0.85	728
Total staff	*7,512*	*34%*	*1.11*	*2,276*	*1,138*	*0.85*	*967*
PATIENTS & VISITORS							
Inpatients	0	0%	0.00	0	0	0.30	0
Outpatients	306	55%	1.97	145	73	0.30	22
Visitors to inpatients	0	0%	0.00	0	0	0.40	0
Visitors with outpatients	214	55%					0
Total patients and visitors	*520*	*55%*	*1.97*	*145*	*73*	*0.30*	*22*
OTHER VISITORS							
Community Center Visitors	740	72%	1.11	482	241	0.40	96
Faculty/Staff Visitors	340	72%	1.10	222	111	0.40	44
Vendors/Services	140	100%	1.00	140	70	0.60	42
Total other visitors	*1,220*	*75%*	*1.09*	*844*	*422*	*0.43*	*182*
Subtotal Staff+Patients+Visitors	*9,252*	*40%*	*1.14*	*3,265*	*1,633*	*0.72*	*1,171*
CHILDCARE							
Childcare staff	43	37%	1.15	14	7	0.85	6
Childcare children	85	0%					
Total childcare	*128*	*12%*	*1.15*	*14*	*7*	*0.86*	*6*
RESIDENTIAL (Block 20-431 units)							
Contract holders	2,369	15%			350	1.00	350
Spouses	672	50%					
Children	0	0%					
Visitors	80	72%	1.11	52	26	0.40	10
Vendors/Services	40	100%	1.00	40	20	0.60	12
Total residential	*3,161*	*25%*		*92*	*396*		*372*
GRAND TOTAL	12,542	36%	1.35	3,371	2,036	0.76	1,549

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips
[g] Based on 1996 LRDP peak parking demand rates, with adjustments.
[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.

Trip Generation
UCSF Mission Bay Campus
Year 2015 w/ Phase 1 MC

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	1,561	50%	1.05	741	371	0.85	315
Fellows/Residents	361	31%	1.02	110	55	0.85	47
Nurses/Nurse Practitioners	1,214	45%	1.00	546	273	0.85	232
Postdocs/Students	1,898	12%	1.09	209	105	0.85	89
Other Staff	7,305	37%	1.13	2,389	1,195	0.85	1,016
Total staff	*12,339*	*35%*	*1.09*	*3,995*	*1,999*	*0.85*	*1,699*
PATIENTS & VISITORS							
Inpatients	344	55%	1.16	163	82	0.30	25
Outpatients	2,100	55%	1.97	998	499	0.30	150
Visitors to inpatients	860	70%	1.08	559	280	0.40	112
Visitors with outpatients	1,470	55%					
Total patients and visitors	*4,774*	*58%*	*1.60*	*1,720*	*861*	*0.33*	*287*
OTHER VISITORS							
Community Center Visitors	740	72%	1.11	482	241	0.40	96
Faculty/Staff Visitors	580	72%	1.10	378	189	0.40	76
Vendors/Services	240	100%	1.00	240	120	0.60	72
Total other visitors	*1,560*	*76%*	*1.08*	*1,100*	*550*	*0.44*	*244*
Subtotal Staff+Patients+Visitors	*18,673*	*45%*	*1.22*	*6,815*	*3,410*	*0.65*	*2,230*
CHILDCARE							
Childcare staff	43	37%	1.15	14	7	0.85	6
Childcare children	85	0%					
Total childcare	*128*	*12%*	*1.15*	*14*	*7*	*0.86*	*6*
RESIDENTIAL (Block 20-431 units)							
Contract holders	2,369	15%			350	1.00	350
Spouses	672	50%					
Children	0	0%					
Visitors	80	72%	1.11	52	26	0.40	10
Vendors/Services	40	100%	1.00	40	20	0.60	12
Total residential	*3,161*	*25%*		*92*	*396*		*372*
GRAND TOTAL	21,962	42%	1.32	6,921	3,813	0.68	2,608

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.

UCSF Mission Bay Trip Gen
Year 2040 w/ Phase 2 MC
+ Blocks 33-34 Scenario 1 -

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	3,535	50%	1.05	1,679	840	0.85	714
Fellows/Residents	361	31%	1.02	110	55	0.85	47
Nurses/Nurse Practitioners	2,339	45%	1.00	1,053	527	0.85	448
Postdocs/Students	2,155	12%	1.09	237	119	0.85	101
Other Staff	20,305	37%	1.13	6,640	3,320	0.85	2,822
Total staff	*28,695*	*37%*	*1.10*	*9,719*	*4,861*	*0.85*	*4,132*
PATIENTS & VISITORS							
Inpatients	990	55%	1.16	470	235	0.30	71
Outpatients	3,824	55%	1.97	1,816	908	0.30	272
Visitors to inpatients	2,476	70%	1.08	1,609	805	0.40	322
Visitors with outpatients	2,676	55%					
Total patients and visitors	*9,966*	*59%*	*1.50*	*3,895*	*1,948*	*0.34*	*665*
OTHER VISITORS							
Community Center Visitors	740	72%	1.11	482	241	0.40	96
Faculty/Staff Visitors	1,460	72%	1.10	952	476	0.40	190
Vendors/Services	580	100%	1.00	580	290	0.60	174
Total other visitors	*2,780*	*78%*	*1.07*	*2,014*	*1,007*	*0.46*	*460*
Subtotal Staff+Patients+Visitors	*41,441*	*45%*	*1.20*	*15,628*	*7,816*	*0.67*	*5,257*
CHILDCARE							
Childcare staff	90	37%	1.11	30	15	0.85	13
Childcare children	200	0%					
Total childcare	*290*	*12%*	*1.11*	*30*	*15*	*0.87*	*13*
RESIDENTIAL (Blocks 15+20-954 units)							
Contract holders	2,984	15%			705	1.00	705
Spouses	1,337	50%					
Children	0	0%					
Visitors	160	72%	1.11	104	52	0.40	21
Vendors/Services	80	100%	1.00	80	40	0.60	24
Total residential	*4,560*	*29%*		*184*	*797*		*750*
GRAND TOTAL	46,291	43%	1.27	15,842	8,628	0.70	6,020

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Bay Campus.

5.3 MOUNT ZION

Trip Generation
UCSF Mt. Zion Campus
Existing 2011-2012

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	476	74%	1.04	339	170	0.85	145
Fellows/Residents	100	45%	1.00	45	23	0.85	20
Nurses/Nurse Practitioners	550	55%	1.05	289	145	0.85	123
Postdocs/Students	432	25%	1.00	108	54	0.85	46
Other Staff	2,557	40%	1.21	844	422	0.85	359
Total staff	*4,114*	*44%*	*1.13*	*1,625*	*814*	*0.85*	*693*
PATIENTS & VISITORS							
Inpatients	96	62%	1.27	47	24	0.30	7
Outpatients	2,716	62%	2.15	1,331	666	0.30	200
Visitors to inpatients	240	64%	1.15	133	67	0.40	27
Visitors with outpatients	1,902	62%					0
Total patients and visitors	*4,954*	*62%*	*2.04*	*1,511*	*757*	*0.31*	*234*
OTHER VISITORS							
Community Center Visitors	0	0%	0.00	0	0	0.40	0
Faculty/Staff Visitors	180	68%	1.19	103	52	0.40	21
Vendors/Services	80	100%	1.00	80	40	0.60	24
Total other visitors	*260*	*78%*	*1.11*	*183*	*92*	*0.49*	*45*
Subtotal Staff+Patients+Visitors	*9,328*	*55%*	*1.54*	*3,319*	*1,663*	*0.58*	*972*
CHILDCARE							
Childcare staff							
Childcare children							
Total childcare							
RESIDENTIAL							
Contract holders							
Spouses							
Children							
Visitors							
Vendors/Services							
Total residential							
GRAND TOTAL	9,328	55%	1.54	3,319	1,663	0.58	972

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Mt Zion Campus.

Trip Generation
UCSF Mt. Zion Campus
Year 2035

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	642	74%	1.04	457	229	0.85	195
Fellows/Residents	100	45%	1.00	45	23	0.85	20
Nurses/Nurse Practitioners	777	55%	1.05	408	204	0.85	173
Postdocs/Students	556	25%	1.00	139	70	0.85	60
Other Staff	3,466	40%	1.21	1,144	572	0.85	486
Total staff	*5,541*	*45%*	*1.13*	*2,193*	*1,098*	*0.85*	*934*
PATIENTS & VISITORS							
Inpatients	0	0%	0.00	0	0	0.30	0
Outpatients	3,924	62%	2.15	1,923	962	0.30	289
Visitors to inpatients	0	0%	0.00	0	0	0.40	0
Visitors with outpatients	2,746	62%					0
Total patients and visitors	*6,670*	*62%*	*2.15*	*1,923*	*962*	*0.30*	*289*
OTHER VISITORS							
Community Center Visitors							
Faculty/Staff Visitors	240	68%	1.18	138	69	0.40	28
Vendors/Services	100	100%	1.00	100	50	0.60	30
Total other visitors	*340*	*77%*	*1.11*	*238*	*119*	*0.49*	*58*
Subtotal Staff+Patients+Visitors	*12,551*	*55%*	*1.58*	*4,354*	*2,179*	*0.59*	*1,281*
CHILDCARE							
Childcare staff							
Childcare children							
Total childcare							
RESIDENTIAL							
Contract holders							
Spouses							
Children							
Visitors							
Vendors/Services							
Total residential							
GRAND TOTAL	12,551	55%	1.58	4,354	2,179	0.59	1,281

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Mt Zion Campus.

5.4 MISSION CENTER

Trip Generation
UCSF Mission Center
Existing 2011-2012

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	145	85%	1.00	123	62	0.85	53
Fellows/Residents	0	0%	0.00	0	0	0.85	0
Nurses/Nurse Practitioners	0	0%	0.00	0	0	0.85	0
Postdocs/Students	32	25%	1.00	8	4	0.85	3
Other Staff	1,429	45%	1.08	590	295	0.85	251
Total staff	*1,606*	*48%*	*1.06*	*721*	*361*	*0.85*	*307*
PATIENTS & VISITORS							
Inpatients							
Outpatients							
Visitors to inpatients							
Visitors with outpatients							
Total patients and visitors							
OTHER VISITORS							
Community Center Visitors	0	0%	0.00	0	0		0
Faculty/Staff Visitors	80	100%	1.00	80	40	0.40	16
Vendors/Services	40	100%	1.00	40	20	0.60	12
Total other visitors	*120*	*100%*	*1.00*	*120*	*60*	*0.47*	*28*
Subtotal Staff+Patients+Visitors	*1,726*	*51%*	*1.05*	*841*	*421*	*0.80*	*335*
CHILDCARE							
Childcare staff							
Childcare children							
Total childcare							
RESIDENTIAL							
Contract holders							
Spouses							
Children							
Visitors							
Vendors/Services							
Total residential							
GRAND TOTAL	1,726	51%	1.05	841	421	0.80	335

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Center Campus.

Trip Generation
UCSF Mission Center
Year 2035

Population Group	Typical Weekday Person Trips	Motor Vehicle Mode Split [f]	Average Vehicle Occupancy	Typical Daily Vehicle Trips to Garage	Typical Daily Vehicles Parking	Peak Demand Rate [g]	Peak Parking Demand
STAFF							
Faculty/Physicians	235	85%	1.00	200	100	0.85	85
Fellows/Residents	0	0%	0.00	0	0	0.85	0
Nurses/Nurse Practitioners	0	0%	0.00	0	0	0.85	0
Postdocs/Students	52	25%	1.00	13	7	0.85	6
Other Staff	2,322	45%	1.08	959	480	0.85	408
Total staff	*2,609*	*48%*	*1.06*	*1,172*	*587*	*0.85*	*499*
PATIENTS & VISITORS							
Inpatients							
Outpatients							
Visitors to inpatients							
Visitors with outpatients							
Total patients and visitors							
OTHER VISITORS							
Community Center Visitors							
Faculty/Staff Visitors	120	100%	1.00	120	60	0.40	24
Vendors/Services	60	100%	1.00	60	30	0.60	18
Total other visitors	*180*	*100%*	*1.00*	*180*	*90*	*0.47*	*42*
Subtotal Staff+Patients+Visitors	*2,789*	*51%*	*1.05*	*1,352*	*677*	*0.80*	*541*
CHILDCARE							
Childcare staff							
Childcare children							
Total childcare							
RESIDENTIAL							
Contract holders							
Spouses							
Children							
Visitors							
Vendors/Services							
Total residential							
GRAND TOTAL	2,789	51%	1.05	1,352	677	0.80	541

[f] For parking demand, Vehicle Mode Split accounts for drive-alone, carpool and vanpool trips

[g] Based on 1996 LRDP peak parking demand rates, with adjustments.

[h] Parking location based on UCSF Transportation Services Annual Commute Survey 2013 for the Mission Center Campus.

APPENDIX H

Water Supply Assessment for the UCSF Long Range Development Plan

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AGENDA ITEM
Public Utilities Commission
City and County of San Francisco

DEPARTMENT Water Enterprise AGENDA NO. **9h**

MEETING DATE April 22, 2014

Approve Water Supply Assessment: Consent Calendar
Project Manager: Paula Kehoe

Approve, Water Supply Assessment for the UCSF Long Range Development Plan

Summary of Proposed Commission Action:	**Approve** the Water Supply Assessment (WSA) for the proposed University of California, San Francisco (UCSF) Long Range Development Plan, pursuant to the State of California Water Code Section 10910 *et seq.* and California Environmental Quality Act (CEQA) Section 21151.9 and CEQA Guidelines Section 15155.
Background:	Water Code Sections 10910-10915 provide a nexus between the regional land use planning process and the environmental review process. The law also reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. The core of this law is the requirement for a public water system to prepare a WSA of whether available water supplies are sufficient to serve the demand generated by projects of a specified size ("water demand projects"), as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under a range of hydrologic conditions. The WSA is required within 90 days of the time the public water system receives a request for such assessment from the lead agency preparing an environmental impact report (EIR) or negative declaration under CEQA. The University of California, which is the lead agency under CEQA, is preparing an EIR for the proposed project and has identified the proposed project as a water demand project. The content of a WSA is specified by the Water Code and includes identification of any existing water supply entitlements or contracts, and detailed information about groundwater supplies. It assesses the adequacy of water supplies to serve the proposed project and cumulative demand. The WSA must be completed by the public water supplier that would serve the project and be approved by its governing body at a public meeting. Approval of a WSA is not approval of the development

APPROVAL: _____

COMMISSION SECRETARY Donna Hood

	project for which the WSA is prepared. A WSA is an informational document required to be prepared for use in the City's environmental review of a project under CEQA. The attached WSA prepared by San Francisco Public Utilities Commission (SFPUC) staff analyzes the sufficiency of long-term water supplies to serve the proposed project and cumulative development and concludes that there are adequate short-term and long-term water supplies to provide water service to the Project in compliance with the State Water Code requirements.
Result of Inaction:	A delay in approving this agenda item will result in the inability of the University of California to complete the environmental review for the proposed UCSF Long Range Development Plan. Under CEQA Guidelines Section 15155, the SFPUC may, within 90 days of the request for the WSA from the University of California, request a reasonable extension of time to complete the WSA.
Description of Action:	Approve the WSA for the proposed UCSF Long Range Development Plan**,** pursuant to the State of California Water Code 10910.
Environmental Review:	Under the Delegation Agreement with the San Francisco Planning Department, the Bureau of Environmental Management has determined that this action does not constitute a "project" under CEQA Guidelines Section 15378 because there would be no physical change to the environment.
Recommendation:	SFPUC staff recommends that the Commission adopt the attached resolution.
Attachments:	1. SFPUC Resolution 2. Water Supply Assessment for the UCSF Long Range Development Plan

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. **14-0061**

WHEREAS, under the California Environmental Quality Act (CEQA) and State Water Code (Section 10910(g)(1)), the San Francisco Public Utilities Commission (SFPUC) is required to prepare and approve a Water Supply Assessment (WSA) for the University of California, San Francisco (UCSF) Long Range Development Plan's cumulative water demands; and

WHEREAS, a WSA is an informational document that assesses the adequacy of water supplies to serve a project and is required to be prepared as part of the CEQA environmental review process; and

WHEREAS, approval of the WSA does not constitute a project under CEQA Guidelines Section 15378 because it is not an approval of the UCSF Long Range Development Plan and is only an informational document which would not result in a physical change in the environment; and

WHEREAS, a WSA must be approved at a public meeting by the governing body of the public water supplier that would serve the project; and

WHEREAS; the SFPUC staff prepared a WSA for the UCSF Long Range Development Plan, which concluded that the SFPUC has adequate water supplies to meet the Project's water demands through 2035; now, therefore, be it

RESOLVED, this Commission approves the Water Supply Assessment for the UCSF Long Range Development Plan, pursuant to the State of California Water Code 10910(g).

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at its meeting of April 22, 2014.

Donna Hood

Secretary, Public Utilities Commission

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

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April 2, 2014

TO: Commissioner Vince Courtney, President
Commissioner Ann Moller Caen, Vice President
Commissioner Francesca Vietor
Commissioner Anson Moran
Commissioner Art Torres

THROUGH: Harlan L. Kelly, Jr., General Manager

FROM: Steven R. Ritchie, Assistant General Manager, Water

RE: Water Supply Assessment for the University of California, San Francisco 2014 Long Range Development Plan

---

1.0 Summary

1.1 Introduction

Under the Water Supply Assessment law (Sections 10910 through 10915 of the California Water Code), urban water suppliers like the San Francisco Public Utilities Commission (SFPUC) must furnish a Water Supply Assessment (WSA) to the city or county that has jurisdiction to approve the environmental documentation for certain qualifying projects (as defined in Water Code Section 10912 (a)) subject to the California Environmental Quality Act (CEQA). The WSA process typically relies on information contained in a water supplier's Urban Water Management Plan (UWMP), and involves answering specific questions related to the estimated water demand of the proposed project. While the University of California, San Francisco (UCSF) is neither a city nor a county and is not subject to the WSA law, as the lead agency for the 2014 Long Range Development Plan (LRDP), UCSF voluntarily requested preparation of a WSA as part of its cooperative planning with the City and County of San Francisco and to inform the environmental impact analysis. This memo serves as the WSA for the proposed UCSF 2014 LRDP, herein referred to as the "proposed project", for use in the preparation of an environmental impact report by UCSF.

1.1.1 The SFPUC's 2010 UWMP and 2013 Water Availability Study

The SFPUC's current UWMP was adopted in 2010. The UWMP incorporated 2009 Land Use Allocation (LUA 2009) projections from the San Francisco Planning Department. In 2012, the San Francisco Planning Department updated its LUA projections (LUA 2012), increasing the estimated number of new dwelling units and jobs over the previous LUA 2009 projections. As a result of the LUA 2012 projections, the SFPUC concluded that its 2010 UWMP no longer accounts for every project requiring a WSA (qualifying project) within San Francisco. Therefore, any qualifying project will require preparation of a WSA that documents the SFPUC's current and projected water supplies when compared to projected demands associated with the LUA 2012 projections. The LUA 2012 projections are provided in Section 3.1 of the 2013 Water Availability Study, discussed below.

Edwin M. Lee
Mayor

Vince Courtney
President

Ann Moller Caen
Vice President

Francesca Vietor
Commissioner

Anson Moran
Commissioner

Art Torres
Commissioner

Harlan L. Kelly, Jr.
General Manager

The SFPUC will not be preparing an updated UWMP until 2015. During this interim period, the SFPUC developed a 2013 Water Availability Study to document the SFPUC's current and projected retail water supplies when compared to projected retail water demands associated with the LUA 2012 projections. The information in the Study is not project-specific and must be provided in the WSA of any qualifying project within San Francisco. ***The 2013 Water Availability Study is incorporated herein as Attachment A and referenced throughout this WSA with bold, italicized text***.

1.1.2 Basis for Requiring a WSA for the Proposed Project

The proposed project has not been the subject of a previous WSA, nor has it been part of a larger project for which a WSA was completed. The proposed project qualifies for preparation of a WSA under Water Code Section 10912(a)(2) because it is a mixed used development that includes more than 500 dwelling units. The proposed project also qualifies for preparation of a WSA because it would use more water than required by a 500 dwelling unit project (Water Code section 10912(a)(7)). The SFPUC previously determined that a 500 dwelling unit project would create retail water demand of 50,000 gallons per day (gpd) or 18.25 million gallons per year (gpy). The proposed project is characterized further in Section 1.2.

1.1.3 Conclusion of this WSA

In this WSA, the SFPUC concludes that there are adequate water supplies to serve the net new growth associated with the proposed project and cumulative retail water demands during normal years, single dry years, and multiple dry years over a 20-year planning horizon from 2015 through 2035. Additional information on supply sufficiency is provided in Section 4.2, Findings.

1.2 Proposed Project Description

The University of California, San Francisco (UCSF) is one of ten campuses in the University of California (UC) system, and is the only UC campus devoted solely to the health sciences. UCSF's mission is to advance health worldwide through innovative health sciences education, research and patient care. UCSF is a multi-site campus with locations throughout the City and County of San Francisco, encompassing approximately 8.04 million gross square feet (gsf). Its major academic and clinical sites are at Parnassus Heights, Mission Bay and Mount Zion, with a major presence at the City's San Francisco General Hospital site.

In support of its mission, UCSF is preparing a new Long Range Development Plan (LRDP) to guide future campus growth and development through the year 2035. UCSF currently occupies 6.99 million gsf in owned space and 1.05 million gsf in leased space in San Francisco. By 2035, UCSF's total owned and leased space will be about 12.37 million gsf, an increase of about 53 percent from existing conditions. The total space across all campus sites would increase by about 4.33 million gsf. Of the 4.33 million gsf, there is approximately 1.14 million gsf that is currently under construction at the Mission Bay campus site and is scheduled for completion in 2015. Housing across all campus sites would increase by about 667,600 gsf, or about 825 housing units. The remaining growth would be in instruction, research, clinical, and other academic and campus support use categories. For additional information on the existing and total projected square footages and population through the LRDP horizon of 2035, see the UCSF LRDP Demand Memo in Attachment B.

The total amount of space across all campus sites would increase by about 4.33 million gsf over the next 20 years. Of that 4.33 million gsf, about two-thirds or 2,845,700 gsf is already accounted for in the San Francisco Planning Department's LUA 2012 projections[1], while one-third or 1,482,800 gsf is growth not previously identified in the projections. The 1,482,800 gsf of new growth includes 991,800 gsf at the Mission Bay

[1] As noted in UCSF LRDP Demand Memo in Attachment B, the portion of UCSF growth that has already been accounted for were analyzed in the Mission Bay South Redevelopment Plan and the 1996 UCSF LRDP Environmental Impact Report.

campus site and 491,000 gsf distributed at the four other UCSF campus sites: Parnassus Heights, Mount Zion, San Francisco General Hospital, and the Mission Center Building at 1855 Folsom Street. The water demand associated with the 1,482,800 gsf of net new growth is the basis for this WSA.

2.0 Water Supply

This section reviews San Francisco's existing and planned water supplies.

2.1 Regional Water System

See ***Section 1.2 of the Water Availability Study*** (Attachment A) for descriptions of the Regional Water System (RWS), water rights held by City and County of San Francisco, the SFPUC Water Supply Improvement Program (WSIP), and the relationship between SFPUC's retail and wholesale customers.

2.2 Existing Retail Supplies

Retail water supplies from the RWS are described in ***Section 2.1.1 of the Water Availability Study***.

Local groundwater supplies, including the Westside Groundwater Basin, Central Groundwater Sub Basin, and Sunol Infiltration Gallery, are described in ***Section 2.1.2 of the Water Availability Study***.

Local recycled water supplies, including the Harding Park Recycled Water Project and Pacifica Recycled Water Project, are described in ***Section 2.1.3 of the Water Availability Study***.

2.3 Planned Retail Water Supply Sources

The San Francisco Groundwater Supply Project is described in ***Section 2.2.1 of the Water Availability Study***.

The proposed Westside and Eastside Recycled Water Projects are described in ***Section 2.2.2 of the Water Availability Study***.

2.4 Summary of Current and Future Retail Water Supplies

A breakdown of water supply sources for meeting SFPUC retail water demand through 2035 in normal years is provided in ***Section 2.3 of the Water Availability Study***.

2.5 Dry-Year Water Supplies

A description of dry-year supplies developed under WSIP, future options that SFPUC is exploring, and a breakdown of water supply sources for meeting SFPUC retail water demand through 2035 in multiple dry years are provided in ***Section 2.4 of the Water Availability Study***. For a single dry year, the retail RWS allocation and, thus, the breakdown of water supply sources would be the same as those in a normal year.

3.0 Water Demand

This section reviews the climatic and demographic factors that may affect San Francisco's water use, projected retail water demands, and the demand associated with the proposed project.

3.1 Climate

San Francisco has a Mediterranean climate. Summers are cool and winters are mild with infrequent rainfall. Temperatures in the San Francisco area average 57 degrees Fahrenheit annually, ranging from the mid-40s in winter to the upper 60s in late

summer. Strong onshore flow of wind in summer keeps the air cool, generating fog through September. The warmest temperatures generally occur in September and October. Rainfall in the San Francisco area averages about 22 inches per year and is generally confined to the "wet" season from late October to early May. Except for occasional light drizzles from thick marine stratus clouds, summers are nearly completely dry. A summary of the temperature and rainfall data for the City of San Francisco is included in Table 1.

Table 1: San Francisco Climate Summary

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Monthly Rainfall (inches)
January	58.0	45.7	4.36
February	60.3	47.3	4.41
March	61.4	48.1	2.98
April	62.3	49.1	1.38
May	63.2	50.9	0.68
June	64.8	52.7	0.18
July	65.6	54.3	0.02
August	66.6	55.3	0.06
September	68.1	55.0	0.19
October	67.8	53.3	1.04
November	61.2	48.1	2.85
December	58.3	45.9	4.33
Annual Average	**63.3**	**50.6**	**22.45**

Source: Western Regional Climate Center (www.wrcc.dri.edu), 1981-2010 data from two San Francisco monitoring stations (Mission Dolores/SF#047772 and Richmond/SF#047767).

3.2 Projected Growth

For a comparison of the 2009 and 2012 LUA projections for housing and employment through 2035, ***see Section 3.1 of the Water Availability Study***.

3.3 Projected Retail Water Demands

In-City retail water demands are estimated using the City's Retail Water Use Models, which were updated with the latest housing and employment projections from LUA 2012. ***See Section 3.2 of the Water Availability Study*** for tabulated retail water demand projections through 2035 and a description of the model methodology.

3.4 Proposed Project Water Demand

UCSF provided a memo describing the methods and assumptions used to estimate the water demands of the proposed project, along with the resulting demands (Attachment B). The SFPUC reviewed the memo to ensure that the methodology is appropriate for the types of proposed water uses, the assumptions are valid and thoroughly documented along with verifiable data sources, and a professional standard of care was used. The SFPUC concluded that the demand estimates provided by UCSF are reasonable.

As described in Section 1.2, approximately two-thirds of the growth associated with the proposed project has been accounted for in the San Francisco Planning Department's LUA 2012 projections, but about one-third of the proposed project growth (1,482,800 gsf) has not. Therefore, the demand that would be generated by this smaller portion of the proposed project is not encompassed within the San Francisco retail water demands that are presented in ***Section 3.2 of the Water Availability Study***, which considers retail water demand based on the LUA 2012 projections. Water demand associated with the proposed net new growth over the 20-year planning horizon is shown in the following table.

Table 2: Water Demand Based on Project Phasing

	2015	2020	2025	2030	2035
Total Demand of Proposed Net New Growth (mgd)	--	0.03	0.05	0.08	0.14

Note:
Construction of the proposed project, including the portion of net new growth, would occur throughout the period between 2015 and 2035. Occupancy of the proposed net new growth would begin in 2017 or 2018.

4.0 Conclusion

4.1 Comparison of Projected Supply and Demand

Section 4.0 of the Water Availability Study compares the SFPUC's retail water supplies and demands through 2035 during normal year, single dry-, and multiple dry-year periods. See Table 3, below, which is adapted from the Water Availability Study (Table 7, Attachment A) with the addition of water demand attributed to the net new growth that was not previously accounted for by the Water Availability Study. The water demands associated with the remainder of the proposed project are already captured in the retail demand projections presented in the Water Availability Study (e.g., the rows labeled "Total Retail Demand Excluding Proposed Net New Growth" in Table 3).

Considering the net new growth associated with the proposed project that was not accounted for by the Water Availability Study, total retail demand in 2035 is projected to be 84.3 mgd, which represents a 3.4 mgd, or 4 percent, increase over the 2035 projections in the 2010 UWMP. The ability to meet the demand of the retail customers is in large part due to development of 10 mgd of local WSIP supplies, including conservation, groundwater, and recycled water. These supplies are anticipated to be fully implemented over the next 10 years.

The proposed net new growth would slightly increase the shortfalls projected in deficit years by 0.2 percent or less (e.g., 2015 with existing and future supplies, 2035 with only existing supplies), but would not create additional years of water supply deficit. As described in the Table 3 notes and in ***Section 4.0 of the Water Availability Study***, deficits of this magnitude could be easily managed through voluntary conservation or rationing.

Table 3: Projected Supply and Demand Comparison with Proposed Net New Growth (mgd)

		Normal Year[1,2]	Single Dry Year[1,2]	Multiple Dry Years		
				Year 1[1,2]	Year 2[2,3]	Year 3[2,3]
2015	Total Retail Demand Excluding Proposed Net New Growth	83.7	83.7	83.7	83.7	83.7
	Demand of Proposed Net New Growth	--	--	--	--	--
	Total Retail Demand Including Proposed Net New Growth	83.7	83.7	83.7	83.7	83.7
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	(0.2)	(0.2)	(0.2)	(1.7)	(1.7)
	Total Retail Supply – Existing & Future Supplies[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)[5]	(0.2)	(0.2)	(0.2)	(1.7)	(1.7)
2020	Total Retail Demand Excluding Proposed Net New Growth	83.4	83.4	83.4	83.4	83.4
	Demand of Proposed Net New Growth	0.03	0.03	0.03	0.03	0.03
	Total Retail Demand Including Proposed Net New Growth	83.4	83.4	83.4	83.4	83.4
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	0.1	0.1	0.1	(1.4)	(1.4)
	Total Retail Supply – Existing & Future Supplies[4]	88.3	88.3	88.3	86.8	86.8
	Surplus/(Deficit)	4.9	4.9	4.9	3.4	3.4
2025	Total Retail Demand Excluding Proposed Net New Growth	82.4	82.4	82.4	82.4	82.4
	Demand of Proposed Net New Growth	0.05	0.05	0.05	0.05	0.05
	Total Retail Demand Including Proposed Net New Growth	82.5	82.5	82.5	82.5	82.5
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	1.0	1.0	1.0	(0.5)	(0.5)
	Total Retail Supply – Existing & Future Supplies[4]	90.3	90.3	90.3	88.8	88.8
	Surplus/(Deficit)	7.8	7.8	7.8	6.3	6.3
2030	Total Retail Demand Excluding Proposed Net New Growth	82.5	82.5	82.5	82.5	82.5
	Demand of Proposed Net New Growth	0.08	0.08	0.08	0.08	0.08
	Total Retail Demand Including Proposed Net New Growth	82.6	82.6	82.6	82.6	82.6
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	0.9	0.9	0.9	(0.6)	(0.6)
	Total Retail Supply – Existing & Future Supplies[4]	90.3	90.3	90.3	88.8	88.8
	Surplus/(Deficit)	7.7	7.7	7.7	6.2	6.2
2035	Total Retail Demand Excluding Proposed Net New Growth	84.2	84.2	84.2	84.2	84.2
	Demand of Proposed Net New Growth	0.14	0.14	0.14	0.14	0.14
	Total Retail Demand Including Proposed Net New Growth	84.3	84.3	84.3	84.3	84.3
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)[6]	(0.8)	(0.8)	(0.8)	(2.3)	(2.3)
	Total Retail Supply – Existing & Future Supplies[4]	90.3	90.3	90.3	88.8	88.8
	Surplus/(Deficit)	6.0	6.0	6.0	4.5	4.5

Notes:

1. Normal-year retail water supplies per ***Table 3 of the Water Availability Study***.
2. Retail water demands (excluding proposed net new growth) per ***Table 6 of the Water Availability Study***.
3. Year 2 and 3 of multiple dry years per ***Table 4 of the Water Availability Study***.
4. Existing and future supply sources per ***Table 3 (repeated in Table 4) of the Water Availability Study***.
5. The deficit shown for 2015 in a normal year with existing and future supplies represents less than a 0.25% shortfall and during a multiple dry-year drought event represents a 2.0% shortfall, which can be easily managed through voluntary conservation measures or rationing. Current retail demand in FY11/12 was 77.8 mgd. If retail demand exceeds the available water supply of 83.5 mgd, the Water Supply Agreement allows the SFPUC to import additional water from the RWS, with mitigation implemented by the SFPUC and potential environmental surcharges if RWS deliveries exceed the 265 mgd interim supply limitation. (Total RWS deliveries in FY11/12 were 219.4 mgd.)
6. The deficit shown for 2035 is projected if none of the local groundwater and recycled water projects are implemented as described in ***Section 2.2 of the Water Availability Study***.

If planned future water supply projects (i.e., San Francisco Groundwater Supply Project, Westside Recycled Water Project, and Eastside Recycled Water Project) are not implemented, normal-year supplies may not be enough to meet projected retail demands. To balance any water supply deficits during normal years, the SFPUC may import additional water from the RWS, with mitigation implemented by the SFPUC and potential environmental surcharges if RWS deliveries exceed the 265 mgd interim supply limitation.

If dry-year supply projects (i.e., Calaveras Dam Replacement Project, Lower Crystal Springs Dam Improvements Project, Upper Alameda Creek Filter Gallery Project, GSR Project, and water transfers) are not implemented, existing dry year supplies may not be enough to meet projected retail demands. To balance any water supply deficits during dry years, the SFPUC may reduce system deliveries and impose customer rationing.

The SFPUC remains committed to meeting the level of service goals and objectives outlined under WSIP. In addition, the SFPUC is currently exploring other future supplies, including:

- Development of additional conservation and recycling.
- Development of additional groundwater supplies.
- Securing of additional water transfer volumes.
- Increasing Tuolumne River supply.
- Revising the Upper Alameda Creek Filter Gallery Project capacity.
- Development of a desalination project.

4.2 Findings

Regarding the availability of water supplies to serve the proposed project beginning as soon as in 2017, the SFPUC finds, based on the entire record before it, as follows:

- During normal years, single dry years, and multiple dry years, the SFPUC has sufficient water supplies to serve the proposed project.
- With the addition of planned retail supplies, the SFPUC has sufficient water supplies available to serve its retail customers, including the demands of the proposed project, existing customers, and foreseeable future development.

Approval of this WSA by the Commission is not equivalent to approval of the development project for which the WSA is prepared. A WSA is an informational document required to be prepared for use in the lead agency's environmental review of a project under CEQA. The WSA assesses the adequacy of water supplies to serve the proposed project and cumulative demand.

If there are any questions or concerns, please contact Steve Ritchie at (415) 934-5736 or SRitchie@sfwater.org.

Attachment A –

2013 Water Availability Study

2013 Water Availability Study

for the City and County of San Francisco

Prepared by:

The San Francisco Public Utilities Commission

May 2013

San Francisco Water Power Sewer

Services of the San Francisco Public Utilities Commission

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1.0 Introduction and Background

1.1 Purpose of this Study

Water Code Sections 10910-10915 require urban water suppliers to evaluate water supply availability to inform environmental review for qualifying projects ("water demand projects") defined in Water Code Section 10912(a). Water Code Section 10910 requires the preparation of a "water supply assessment" (WSA) for water demand projects that include a determination of whether available water supplies are sufficient to serve the demand generated by the project, as well as reasonably foreseeable cumulative demand over a 20 year period, including years of normal precipitation, single dry, and multiple dry years. If the water supplies needed by a water demand project were accounted for in the water supplier's most recent 5 year Urban Water Management Plan (UWMP), under Water Code Section 10910(c)(2), the water supplier may incorporate the requested information from the UWMP in preparing a WSA for a water demand project.

The SFPUC's most recent UWMP adopted in 2010 relied on the San Francisco Planning Department's (SF Planning) 2009 Land Use Allocation (LUA) projections of housing and employment growth in San Francisco to estimate future retail water demands. In summer 2012, SF Planning updated the 2009 LUA to incorporate the Association of Bay Area Government's (ABAG) Sustainable Community Strategy Jobs-Housing Connections Scenario as detailed in a memorandum from SF Planning to the SFPUC dated January 28, 2013 (Appendix A). SF Planning's 2012 LUA projects an additional 11,235 new dwelling units and 35,068 new jobs in San Francisco by 2035 over the previous 2009 LUA projections considered in the SFPUC's 2010 Urban Water Management Plan (UWMP).[1]

As a result of 2012 LUA projections, the SFPUC concluded that its 2010 UWMP no longer accounted for all projected retail water demands. The SFPUC will not be preparing an updated UWMP until 2015. Therefore, during this interim period, the SFPUC has developed this Water Availability Study (Study) to document the SFPUC's current and projected retail water supplies when compared to projected retail water demands associated with these projects and anticipated new growth in San Francisco under the 2012 LUA projections. This Study incorporates and utilizes the information in the 2010 UWMP, but includes the following:

- Updated retail demand projections based on the 2012 LUA housing and employment projections, and updates to the SF Retail Demand Model as detailed in a memorandum from the SFPUC dated February 22, 2013 (Appendix B).
- Updated project description and schedule for the San Francisco Groundwater Supply Project based on the SFPUC San Francisco Groundwater Supply Project Draft Environmental Impact Report (EIR) (March 2013).
- Updated schedule for the Eastside Recycled Water Project based on SFPUC planning efforts to date.
- Updated schedules for dry-year water supply projects.

[1] The projected increase in demand results largely from the incorporation of Senate Bill (SB) 375 in retail demand projections. SB 375 requires ABAG and the Metropolitan Transportation Commission to develop a Bay Area Sustainable Communities Strategy that 1) achieves a greenhouse gas emissions reduction target set by the California Air Resources Board by reducing vehicle travel through colocation of housing and mass transit, and 2) identifies a strategy to meet the Bay Area's entire housing need by income level within the Bay Area.

The information and conclusions of this Study, in concert with the background information provided in the 2010 UWMP that is incorporated into this Study, can be used in the development of water supply assessments for pending water demand projects.

1.2 Background

This section provides a broad overview of the Regional Water System (RWS); the SFPUC water rights; the Water System Improvement Program (WSIP); the relationship of the SFPUC's retail water customers to wholesale customers; and historic trends in retail and wholesale water demands.

1.2.1 The SFPUC Regional Water System[2]

The SFPUC, a department of the City and County of San Francisco, owns and operates the RWS. The RWS supplies water to both SFPUC wholesale customers and retail customers, the latter primarily in San Francisco. Historically, the RWS has supplied approximately 96% of the SFPUC's retail water demands. The remaining portion of the SFPUC's retail water supply comes from local groundwater and secondary treated recycled water. Groundwater in San Francisco is used primarily for irrigation at local parks and on highway medians. Recycled water is used mostly at municipal facilities for wastewater treatment process water, sewer box flushing, and similar wash down operations. These local supplies are discussed in greater detail in Section 2.1.

In 1934, San Francisco combined the Hetch Hetchy system and Spring Valley system to create the SFPUC RWS. The rights to store and divert water at Pilarcitos, San Andreas, Crystal Springs, and Calaveras Reservoirs were originally held by the Spring Valley Water Company, which was formed in 1862. San Francisco purchased Spring Valley in 1930.

The RWS currently delivers an annual average of approximately 219 million gallons per day (mgd) to 2.6 million users in Tuolumne, Alameda, Santa Clara, San Mateo, and San Francisco counties. The RWS is a complex system, shown in Figure 1, and supplies water from two primary sources:

- Tuolumne River through the Hetch Hetchy Reservoir, and
- Local runoff into Bay Area reservoirs in the Alameda and Peninsula watersheds.

Water from Hetch Hetchy Reservoir provides the majority of the water supply available to the SFPUC. On average, the Hetch Hetchy Project provides over 85% of the water delivered to the SFPUC's service area. The amount of water available to the SFPUC from the RWS is constrained by hydrology, physical facilities, and institutional parameters such as the 1913 Raker Act (38 Stat. 242) that allocate the water supply of the Tuolumne River between San Francisco and the Modesto and Turlock Irrigation Districts downstream. Due to these constraints, the SFPUC is very dependent on reservoir storage to maximize the reliability of its water supplies. During dry years, the SFPUC has a very small share of Tuolumne River runoff available and the local Bay Area watersheds produce very little water. Reservoir storage is critical during drought cycles because it enables the SFPUC to carry over water supply from wet years to dry years. During droughts the water received from the Hetch Hetchy system can amount to over 93% of the total water delivered. As explained in Section 1.2.3, the SFPUC is implementing a Water System Improvement Program ("WSIP") to assure the long-term adequacy of its water system. The SFPUC developed WSIP water supply objectives based on RWS supplies forecasted for a conservative "design drought" of 8.5 years.[3]

[2] For more detailed information on the RWS, see Section 2.1 of the SFPUC's 2010 UWMP.

[3] For more detailed information on use of the design drought, see Section 5.1.2 of the 2010 UWMP.

Bay Area reservoirs provide on average approximately 15% of the water delivered by the SFPUC RWS. The local watershed facilities are operated to conserve local runoff for delivery. On the San Francisco Peninsula, the SFPUC utilizes Crystal Springs Reservoir, San Andreas Reservoir, and Pilarcitos Reservoir to capture local watershed runoff. In the Alameda Creek watershed, the SFPUC constructed the Calaveras Reservoir and San Antonio Reservoir. In addition to capturing runoff, San Antonio, Crystal Springs, and San Andreas reservoirs also provide storage for Hetch Hetchy diversions. The local watershed facilities also serve as an emergency water supply in the event of an interruption to Hetch Hetchy diversions.

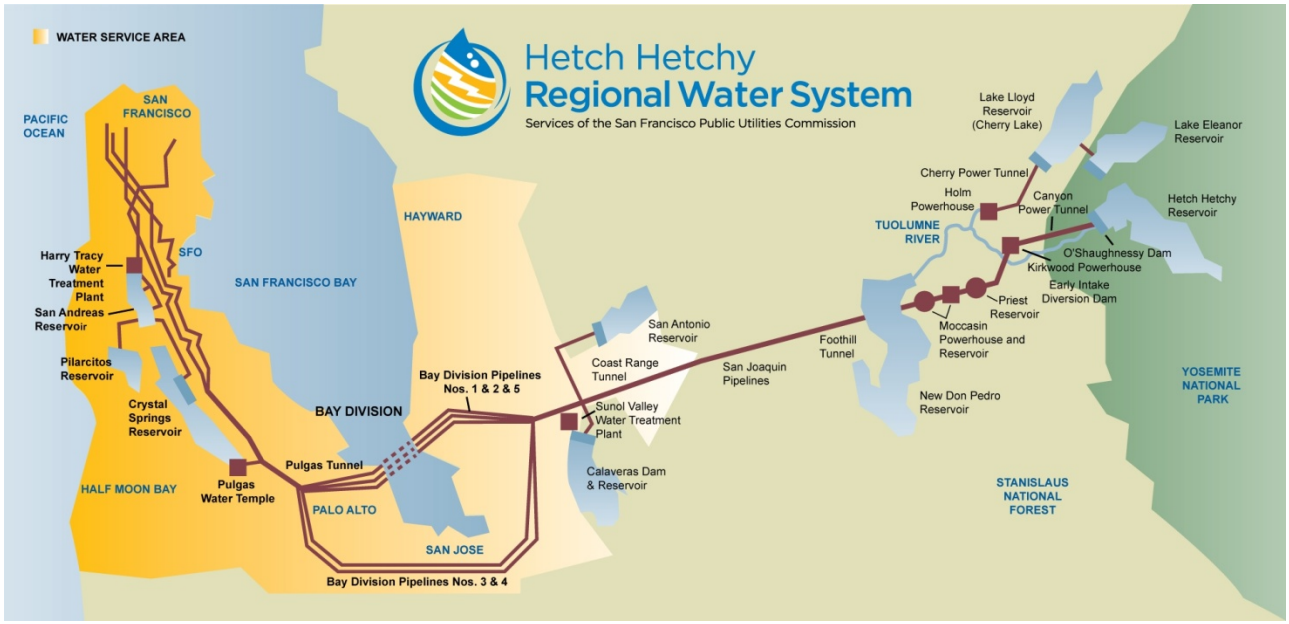

Figure 1: SFPUC Regional Water System

1.2.2 Water Rights

San Francisco owns "pre-1914" appropriative water rights to store and deliver water from Hetch Hetchy, Cherry and Eleanor Reservoirs in the Tuolumne River watershed and locally from the Alameda and Peninsula watersheds. The SFPUC also diverts and stores water in San Antonio Reservoir under an appropriative water right license granted by the State Water Resources Control Board (SWRCB) in 1976.

Appropriative water rights allow the holder to divert water from a source to a place of use not connected to the water source. These rights are based on seniority and use of water must be reasonable, beneficial, and not wasteful. In 1914, California established a formal water rights permit system, which is administered by the SWRCB. The SWRCB has sole authority to issue and administer post-1914 appropriative water rights, but has limited jurisdiction over pre-1914 appropriative water rights.

The 1912 Freeman Report identified the ultimate diversion rate from the Tuolumne River to the Bay Area as 400 mgd, and the City used this as the basis for designing the export capacity of the Hetch Hetchy project. The City has sufficient water rights for current diversions and the ultimate planned export of 400 mgd to the Bay Area.

In the 1913 Raker Act, the United States granted rights-of-way to the San Francisco over public land for purposes of constructing the Hetch Hetchy project. The Act recognizes the senior water rights of the Turlock and Modesto Irrigation Districts (TID and MID) to divert water from the Tuolumne River, and the City must bypass certain flows through its Tuolumne River reservoirs to TID and MID. By agreement, the City, TID, and MID have supplemented these Raker Act obligations to increase the TID and MID

entitlements to account for other senior Tuolumne River water rights and allow the City to "pre-pay" TID and MID their entitlement by storing water in the Don Pedro water bank. The City is required to bypass inflow to TID and MID totaling 2,416 cubic feet per second (cfs) or natural daily flow, whichever is less, at all times (as measured at La Grange), except for April 15 to June 13, when the requirement is 4,066 cfs or natural daily flow as measured at La Grange, whichever is less.

1.2.3 The Water System Improvement Program

To enhance the ability of the SFPUC water system to meet the service goals for water quality, seismic reliability, delivery reliability, and water supply, the SFPUC is undertaking the WSIP. The WSIP is a $4.6 billion, multi-year, capital program to upgrade the RWS. The program will deliver improvements that enhance the SFPUC's ability to provide reliable, affordable, high-quality drinking water to its wholesale customers and retail customers in an environmentally sustainable manner.[4]

As required under the California Environmental Quality Act (CEQA), SF Planning prepared a Program Environmental Impact Report (PEIR) for the WSIP. The PEIR analyzed the water supply effects of the WSIP at a project-level of detail and analyzed the WSIP facility improvement projects at a program-level of detail. The PEIR was certified by the San Francisco Planning Commission on October 30, 2008. On the same day, the SFPUC adopted the Phased WSIP Variant option in Resolution No. 08-200. The phased WSIP includes the following program elements:

- Full implementation of all WSIP facility improvement projects;
- Water supply delivery to RWS customers through 2018;
- Water supply sources (265 mgd average annual from SFPUC watersheds;10 mgd of conservation, recycled water, and groundwater in San Francisco; and 10 mgd of conservation, recycled water, and groundwater from the wholesale service area);
- Dry-year water transfers coupled with the Westside Groundwater Basin Conjunctive Use project to ensure drought reliability;
- Reevaluation of 2030 demand projections, RWS wholesale water purchase requests, and water supply options by 2018 and a separate SFPUC decision by 2018 regarding water deliveries after 2018; and
- Provision of financial incentives to limit water sales to an average annual 265 mgd "interim supply limitation" from the SFPUC watersheds through 2018.

The WSIP facility improvement projects approved by the SFPUC in 2008 included the implementation of groundwater, recycled water, and conservation projects in San Francisco. Since then, the SFPUC has been completing project-level review of projects requiring further environmental review, and proceeding to implement these projects. The WSIP identified that recycled water and groundwater projects would provide a total of approximately 6 mgd of additional water supply for retail customers, and another 4 mgd would be derived from active and passive conservation measures. The water supply goal in Resolution No. 08-200 was established to meet customer water needs in non-drought and drought periods. The water supply goal would be achieved under the following WSIP system performance objectives:

- Meet average annual water demand of 265 mgd (the interim supply limitation) from the SFPUC watersheds for retail and wholesale customers during non-drought years for system demands through 2018.

[4] For more information on the WSIP, see Sections 3.1.1 and 3.1.2 of the 2010 UWMP.

- Meet dry-year delivery needs through 2018 while limiting rationing to a maximum 20% system-wide reduction in water service during extended droughts.[5]
- Diversify water supply options during non-drought and drought periods.
- Improve use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers.

Although the Phased WSIP Variant is designed to keep deliveries from exceeding an annual average target level of about 265 mgd, the SFPUC may deliver more than this interim supply limitation if necessary. In the event the SFPUC must deliver more than 265 mgd to its customers from its watersheds, the SFPUC must implement the WSIP PEIR mitigation measures associated with these impacts in proportion to the extent of the exceedance. In implementing the Phased WSIP Variant, the need could arise to temporarily increase deliveries from the watersheds over the 265 mgd interim supply limitation to meet customer water delivery needs in the near term, because of public health and safety considerations and because it might not be possible to implement all proposed local conservation, recycling, and groundwater projects and actions in time to meet unanticipated increases in customer demands. The mitigation measures identified in the PEIR to address potential impacts that could arise from RWS deliveries in excess of the interim supply limitation are:[6]

- Avoidance of flow changes in the lower Tuolumne River below La Grange dam by reducing demand for water from Don Pedro Reservoir (i.e., via a water transfer agreement with MID/TID and/or other water agencies such that the acquired water is developed through actions that result in reduction of demand on Don Pedro Reservoir and subsequently no change in the release pattern from La Grange dam)
- Fishery habitat enhancement
- Lower Tuolumne River Riparian Habitat Enhancement

As an incentive to keep RWS deliveries below the 265 mgd interim supply limitation, the SFPUC and its wholesale customers agreed to pay "environmental enhancement surcharges" for deliveries in excess of 265 mgd, as described in the next section.

1.2.4 Allocation of Water Between SFPUC Retail and Wholesale Customers[7]

The SFPUC provides water to both retail and wholesale customers. While this Study concerns water availability for retail customers, it is important to understand the contractual relationship between retail and wholesale customers to properly characterize the amount of water available to retail customers in normal and drought years. Approximately 2.6 million people within San Francisco, San Mateo, Santa Clara, Alameda, and Tuolumne Counties rely entirely or in part on the water supplied from the RWS by the SFPUC. Approximately one-third of RWS supplies are served directly to retail customers, primarily in San Francisco, and about two-thirds to wholesale customers outside San Francisco by contractual agreement. There are limited numbers of retail customers outside San Francisco.

The wholesale customers, except the cities of San Jose and Santa Clara, are collectively entitled to 184 mgd – the so called "Supply Assurance" – from the RWS under the terms of a 1984 contract and

[5] This 20% rationing level applies to retail and wholesale customers combined. No rationing level is specified for retail customers only.

[6] For a full description of these mitigation measures, see Section 6.4.2 of the WSIP PEIR, Measures 5.3.6-4a, 5.3.6-4b, and 5.3.7.-6.

[7] For more detailed information on the allocation of water, see Section 4.3.1 of the 2010 UWMP.

settlement agreement. The Supply Assurance represents a dedication of water supply by the City of San Francisco to the wholesale customer group. San Jose and Santa Clara are temporary, interruptible customers that are not included within the 184 mgd Supply Assurance. But for purposes of defining the interim supply limitation of 265 mgd, the total 184 mgd wholesale share of the interim supply limitation, while equal to the Supply Assurance, also includes a total of 9 mgd (4.5 mgd each) for San Jose and Santa Clara, who retain their temporary, interruptible status. One of the decisions deferred by the SFPUC in the adoption of the Phased WSIP Variant was whether or not to increase the Supply Assurance above 184 mgd. The 2009 wholesale Water Supply Agreement requires the SFPUC to make this decision by December 31, 2018, along with deciding whether or not to make San Jose and Santa Clara permanent customers.[8]

The SFPUC memorialized many of the WSIP commitments in the 2009 Water Supply Agreement with its 26 wholesale customers approved by the SFPUC in Resolution No. 08-0201 following adoption of the WSIP. The Supply Assurance continues to be in effect during the 25-year term of the 2009 Water Supply Agreement. In the wholesale Water Supply Agreement, the SFPUC agreed to:

- Meet average annual demand of 265 mgd (the interim supply limitation) from the SFPUC RWS for retail and wholesale customers during non-drought years for system demands through 2018;
- Achieve levels of service during extended droughts, including by implementing an agreed upon Water Shortage Allocation Plan (WSAP) for the allocation of water between wholesale and retail customers during shortages of up to 20%; and
- Allocate the 265 mgd interim supply limitation as follows: 81 mgd for San Francisco retail customers and 184 mgd for wholesale customers. If deliveries from the RWS exceed 265 mgd, San Francisco retail and wholesale customers would be charged volumetric environmental enhancement surcharges based on their respective amount(s) of excess use, i.e., retail customers would pay the surcharge if retail use exceeds 81 mgd, and individual wholesale customers would pay the surcharge if water deliveries exceed their allotted share (their individual "interim supply allocations") of the total 184 mgd wholesale interim supply limitation.

The wholesale Water Supply Agreement allows the SFPUC to temporarily reduce water deliveries to wholesale customers to a volume that is less than the Supply Assurance in response to emergencies, scheduled maintenance activities, and drought. During droughts, the WSAP outlines procedures for allocating water from the RWS to retail and wholesale customers during system-wide shortages of 20% or less (Tier 1 Plan).[9] Section 3.11.C of the Water Supply Agreement authorizes the wholesale customers to adopt a methodology for allocating the collective wholesale allocation among the individual wholesale customers (Tier 2 Plan). For shortages in excess of 20%, the SFPUC will meet with the wholesale customers to determine if modifications to the Tier 1 Plan can be agreed upon by the SFPUC and the wholesale customers. If they cannot agree, the SFPUC may allocate water in its discretion, subject to challenge by the wholesale customers, unless all of the wholesale customers direct that a particular Tier 2 allocation methodology be used.[10] The WSAP Tier 1 Plan allocates the available water supply between retail and wholesale customers as follows.

[8] See Section 4.06 of the wholesale Water Supply Agreement.

[9] Refer to the 2010 Urban Water Management Plan Appendix G for full text of the WSAP.

[10] Generally speaking, the differential allocation of water between retail and wholesale customers during droughts by the SFPUC must be reasonable and may include factors such as relative percentage of indoor/outdoor water use, per capita use, and other discretionary criteria.

Table 1: Retail/Wholesale Water Allocation during System-wide Water Shortage

Level of System-wide Reduction in Water Use Required	SFPUC Retail Share of Available Water	Wholesale Customer Share (Collectively)
5% or less	35.5%	64.5%
6% to 10%	36.0%	64.0%
11% to 15%	37.0%	63.0%
16% to 20%	37.5%	62.5%

Based on the WSAP allocations presented above in Table 1, Table 2 shows SFPUC RWS retail supply schedules during normal-, single dry-, and multiple dry-year periods. For the purposes of developing these allocations, the SFPUC assumed a delivery goal of 265 mgd. System-wide shortages were applied to a demand of 265 mgd and the subsequent allocations between retail and wholesale collectively.

Table 2: SFPUC Retail RWS Allocations in Normal, Dry, and Multiple Dry Years

Normal Year[1]		Single Dry Year[1]		Multiple Dry Years[1,2]					
				Year 1		Year 2		Year 3	
(mgd)	(%)	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)	(mgd)	(%)
81.0	100	81.0	100	81.0	100	79.5	98.1	79.5	98.1

Notes:
1. The allocations presented are valid throughout the 20-year projection.
2. Under the WSAP, the SFPUC retail allocations at a 10% shortage are 85.86 mgd. However, due to the Phased WSIP Variant, only 81 mgd of RWS supply is shown.

The greater reductions in water supply that are required of wholesale customers, as shown in Table 1, reflect the fact that wholesale customers, to varying degrees, can conserve more water than retail customers in San Francisco due to much greater use of water for landscape irrigation in suburban areas. According to the WSAP allocations, the SFPUC's retail water supplies would decrease by 1.5 mgd, or 1.9%, to 79.5 mgd beginning in Year 2 of multiple dry-year periods. It is well within the ability of retail customers to collectively reduce their demand by this amount through voluntary conservation or rationing. In comparison, during the 1987-1992 drought in San Francisco, the SFPUC experienced system-wide shortages of 25 to nearly 45%. As the drought progressed, SFPUC retail customers were required to reduce total consumption by 14%, up to approximately 32%. A Retail Water Shortage Allocation Plan was adopted by the SFPUC in 2001 to formalize a three-stage program of action to be taken in San Francisco to reduce water use during a drought.[11] The first stage of action targets a reduction of 5-10% via voluntary measures. Table 2 shows water available to retail customers from the RWS over the next 20 years during Years 2 and 3 of multiple dry years, excluding existing and potentially available local water supplies such as groundwater.

The SFPUC remains committed to implementing conservation as an important component of its water supply portfolio. The retail water demands presented in this Study reflect passive and active conservation measures, including a total savings potential of up to 4 mgd by 2018 from active conservation, and 5 mgd by 2035. For more detailed information on the SFPUC's demand management programs, see Section 6 of the 2010 UWMP.

[11] For more detailed information on the Retail Water Shortage Allocation Plan, see Section 5.4.2 of the 2010 UWMP.

2.0 Retail Water Supply Analysis

This section reviews San Francisco's existing and projected retail water supplies.

2.1 Existing Retail Supplies

2.1.1 Retail Supplies from the Regional Water System

The SFPUC retail customer share of the 265 mgd interim supply limitation from the RWS is 81 mgd. While the RWS is physically capable of delivering more water than the 265 mgd interim supply limitation to wholesale and retail customers, the Phased WSIP Variant adopted by the SFPUC seeks to limit water sales to 265 mgd in order to allow the SFPUC and its wholesale customers to further evaluate locally available supplies prior to reaching a decision to increase diversions from the Tuolumne River within the SFPUC's established water rights. This Study assumes that the normal-year retail share of 81 mgd will continue to be available through the Study horizon of 2035. As described in Section 1.2, the SFPUC can increase deliveries from the RWS over 265 mgd to meet combined retail and wholesale needs during normal years. To do so, the SFPUC would need to implement mitigation measures required in the WSIP PEIR and impose the environmental enhancement surcharges described in Section 1.2.4.

2.1.2 Local Groundwater Supplies

San Francisco overlies all or part of seven un-adjudicated groundwater basins. These groundwater basins include the Westside, Lobos, Marina, Downtown, Islais Valley, South, and Visitation Valley basins. The Lobos, Marina, Downtown and South basins are located wholly within the City limits, while the remaining three extend south into San Mateo County. The portion of the Westside Basin aquifer located within San Francisco is referred to as the North Westside Basin. With the exception of the Westside and Lobos basins, all of the basins are generally inadequate to supply groundwater for municipal supply due to low yield, contamination, or potential subsidence concerns. There is currently no adopted groundwater management plan for the SFPUC's groundwater basins.

Early in its history, San Francisco made use of the local groundwater, springs, and spring-fed surface water, using between 6.0 mgd and 8.5 mgd prior to 1934. After imports of water from the Hetch Hetchy Reservoir began in October 1934, the municipal water supply system began to rely almost exclusively on surface water from the Alameda and Peninsula watersheds and from the Hetch Hetchy Water and Power Project. Local groundwater use, however, has continued in the City.

Westside Groundwater Basin – San Francisco[12]

With an area of about 45 square miles, the Westside Groundwater Basin is the largest in San Francisco and is currently used to meet retail water demands for some irrigation customers. The Westside Groundwater Basin is separated from the Lobos Basin to the north by a northwest-trending bedrock ridge through the northeastern part of Golden Gate Park. San Bruno Mountain and San Francisco Bay form the eastern boundary, and the San Andreas Fault and Pacific Ocean form the western boundary. The southern limit of the Westside Groundwater Basin is defined by an area of high bedrock that separates it from the San Mateo Plain Groundwater Basin. The basin opens to the Pacific Ocean on the northwest and San Francisco Bay on the southeast. Portions of the Westside Groundwater Basin, primarily from Lake Merced south, contain three aquifers known as the Shallow Aquifer, Primary Production Aquifer, and Deep Aquifer. The Shallow and Primary Production Aquifers also occur north of Lake Merced

[12] The primary source of information provided in this section is the SFPUC San Francisco Groundwater Supply Project Draft EIR (March 2013).

depending on the presence or absence of subsurface clay layers. The basin has not been adjudicated nor has it been identified by DWR as overdrafted, or as projected to be overdrafted in the future.

The Westside Groundwater Basin can be subdivided into northern and southern portions by the county line separating San Francisco and San Mateo counties. No geologic features restrict groundwater flow between the northern and southern parts of the groundwater basin. The 14-square-mile portion of the Westside Groundwater Basin north of the San Francisco/San Mateo County line is referred to as the North Westside Groundwater Basin, and the 31-square-mile portion of the Westside Groundwater Basin south of the San Francisco/San Mateo County line is referred to as the South Westside Groundwater Basin. Existing retail groundwater sources are pumped from the North Westside Groundwater Basin.

Since 1926, groundwater has been pumped from wells located in Golden Gate Park and the San Francisco Zoo in the North Westside Groundwater Basin. Based on flow meter data, about 1.5 mgd is produced by these wells.

The SFPUC has implemented a groundwater monitoring program to evaluate groundwater elevations and quality, along with water elevations at Lake Merced. The monitoring system includes a single well or clusters of two or more wells at 19 locations. Groundwater levels in each well are monitored continuously using pressure transducers or are measured quarterly by hand. Based on regular groundwater monitoring conducted in the North Westside Groundwater Basin since 2004, groundwater levels along the Pacific Coast and north of Lake Merced have generally remained above sea level in the Shallow and Primary Production Aquifers.

The SFPUC samples groundwater at five monitoring well locations semiannually to monitor general water quality in the groundwater basin, including four locations near Lake Merced and one at the West Sunset Playground. Three of the locations near Lake Merced include both a Shallow Aquifer and Primary Production Aquifer monitoring well. The monitored parameters include total alkalinity, calcium, magnesium, sodium, potassium, bicarbonate, hardness, chloride, nitrate, sulfate, TDS, pH, and specific conductance. In addition, some wells have been monitored for iron and manganese.

Central Groundwater Sub Basin – Livermore/Amador Valley

The SFPUC delivers about 0.4 mgd of groundwater to the Castlewood community in Pleasanton from a well field operated by the SFPUC. These deliveries are historic artifacts of Spring Valley Water Company groundwater exports to San Francisco in the early decades of the 20th century. This groundwater is drawn from the Central Groundwater Sub Basin in the Livermore/Amador Valley. DWR has not identified this basin as over-drafted, nor as projected to be over-drafted in the future. These wells are metered and have been in operation for several decades. The system serving Castlewood is not connected to the RWS.

Sunol Infiltration Gallery Subsurface Diversion – Sunol

The Sunol Infiltration Gallery (SIG) is located adjacent to Alameda Creek in Sunol, south of the SFPUC's Sunol Pump Station. The SIG is approximately 2,000 feet long and consists of a concrete box structure with 10-foot 8-inch height and a 6-foot width. The bottom of the box structure is open to allow infiltration. The SIG discharges into the Sunol Aqueduct at the Water Temple. About 0.3 mgd of groundwater is delivered to the Sunol Valley Golf Club from the SIG prior to any connection to the RWS.

2.1.3 Local Recycled Water Supplies

From 1932 to 1981, the City's McQueen Treatment Plant, using an activated sludge process, provided recycled water to Golden Gate Park for irrigation and flow augmentation of its streams and lakes. Due to changes in State regulations, the plant could no longer meet standards, and the City closed the McQueen plant and discontinued use of recycled water in Golden Gate Park.

Currently, recycled water use in San Francisco is limited, but the SFPUC is moving forward with expanding the use within the City. Disinfected secondary-treated recycled water from the SFPUC's Southeast Water Pollution Control Plant is used on a limited basis for wash-down operations, and is provided to construction contractors for soil compaction and dust control and other nonessential construction purposes. Current use of recycled water for these purposes does not materially contribute to reducing the retail demands.

The Harding Park Recycled Water Project uses available recycled water from the North San Mateo County Sanitation District (NSMCSD) located in Daly City, to irrigate Harding Park and Fleming Park golf courses in San Francisco. The SFPUC partnered with the NSMCSD for this project which completed construction and began using recycled water in October 2012. Average annual use of recycled water at Harding Park is estimated at 0.23 mgd.

The Pacifica Recycled Water Project will provide recycled water to irrigate the Sharp Park Golf Course in Pacifica (which is owned by the City) and other nearby areas. When completed, the project will save approximately 40 million gallons of drinking water each year. SFPUC has partnered with the North Coast County Water District on this project. Major project construction was completed in spring 2012 and customer retrofits are underway, with recycled water deliveries anticipated to begin in 2013.

2.2 Planned Retail Water Supply Sources

To reliably and sustainably meet the future water needs of its retail customers, the SFPUC has several WSIP facility projects in the planning stages for maintaining normal- and dry-year water supplies for both wholesale and retail customers, and is diversifying its water supply portfolio through the development of local water supplies such as increasing recycled water and groundwater production. These sources of supply were described and analyzed programmatically in the WSIP PEIR and in the 2010 UWMP. Projects related to these efforts are described below.

2.2.1 San Francisco Groundwater Supply Project[13]

The San Francisco Groundwater Supply Project proposes two phases for the construction of up to six wells and associated facilities in the western part of San Francisco to extract up to 4 mgd of groundwater from the North Westside Groundwater Basin for potable use and distribution in the City. Phase 1 would include the construction and operation of four new well facilities to supply an annual average of approximately 2.5 to 3.0 mgd of groundwater. Phase 1 is anticipated to come online and begin water delivery in mid-2016. At initial startup, project well operation would be limited to a maximum combined capacity of 1 mgd as part of an adaptive management program. After one year of monitoring for possible seawater intrusion and adverse effects on Lake Merced, the SFPUC may increase annual pumping by 1 mgd each year, up to a total of 3 mgd during Phase 1 of the project and 4 mgd when Phase 2 is implemented.

Phase 2 would include the conversion of the two existing Golden Gate Park irrigation well facilities currently in use and the operation of the converted irrigation wells to provide an additional annual average of approximately 1.0 to 1.5 mgd of groundwater. Phase 2 of the project would only be implemented after the Westside Recycled Water Project is approved and constructed (anticipated 2018) to provide a new recycled water supply for irrigation uses at Golden Gate Park and nearby golf courses. The extracted groundwater, which would be used both for regular and emergency potable water supply purposes, would

[13] The primary source of information provided in this section is the SFPUC San Francisco Groundwater Supply Project Draft EIR (March 2013), which analyzes this project at a project-level of environmental review.

be disinfected and blended with imported surface water before entering the municipal drinking water system.

A distribution system (including pipelines and connection points) would connect five of the groundwater well facilities to Sunset Reservoir. The sixth well would connect to the Lake Merced Pump Station (which pumps water to both Sutro and Sunset Reservoirs). The groundwater would be blended with San Francisco's municipal water supply and distributed to local customers through the Sunset and Sutro Reservoirs. Figure 2 provides an overview schematic of the project and identifies the locations of all wells and the boundaries of the North Westside Groundwater Basin.

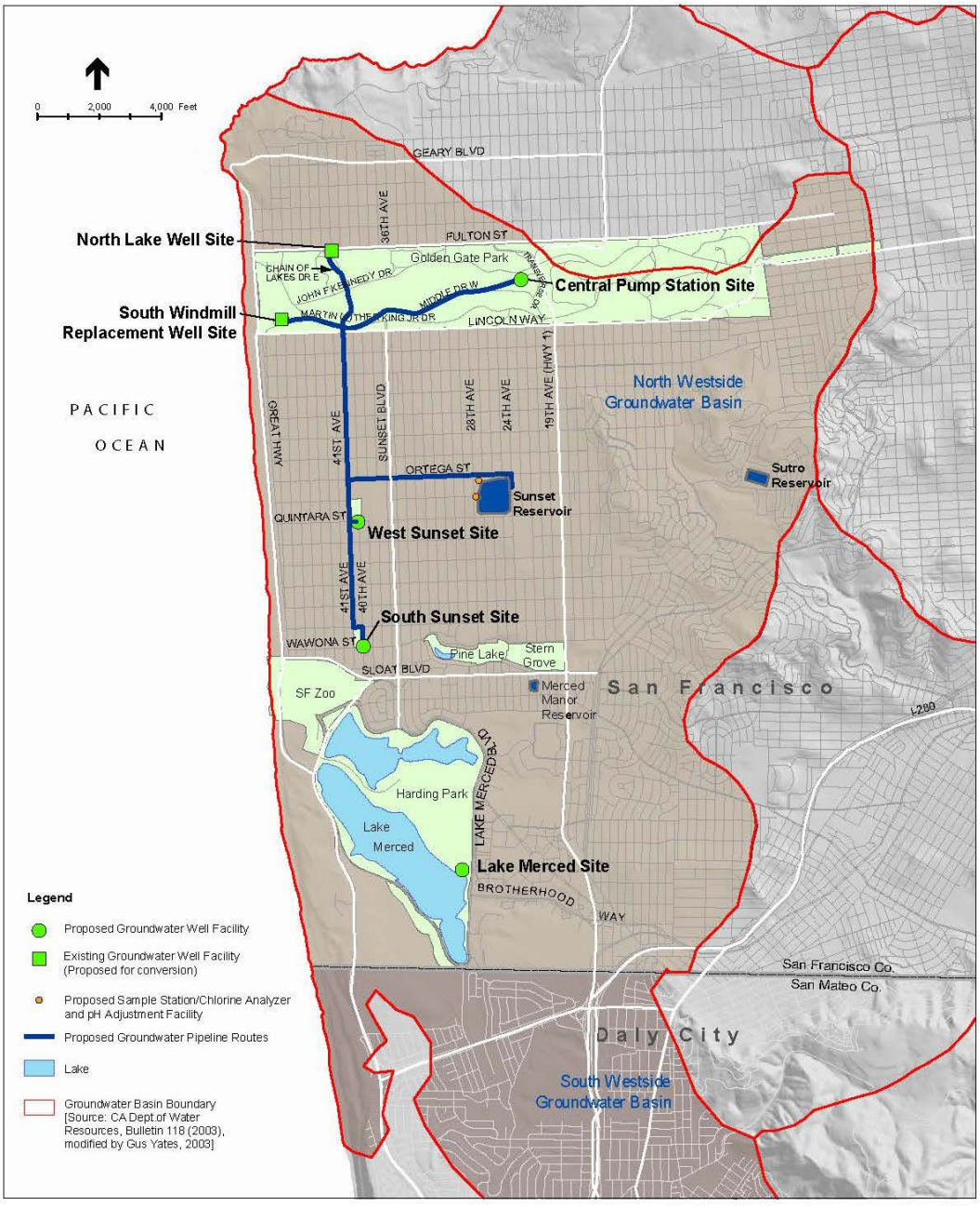

Figure 2: San Francisco Groundwater Supply Project

2.2.2 Future Recycled Water Supply Projects

The SFPUC also has plans to develop the proposed Westside and Eastside Recycled Water Projects in San Francisco (retail service area). These projects would provide up to 4 mgd of recycled water to a variety of users in San Francisco – primarily for landscape irrigation, toilet flushing, and industrial purposes – and are detailed below. Figure 3 shows areas on the western and eastern sides of the City that are designated for municipal recycled water use.

- The proposed Westside Project would construct a tertiary recycled water plant and associated pipelines to replace surface and groundwater currently used to irrigate Golden Gate Park, Lincoln Park and Golf Course, and the Presidio Golf Course. Additionally recycled water would be used for various non-potable uses in Golden Gate Park, including those at the California Academy of Sciences. The proposed treatment facility site was relocated to the SFPUC's Oceanside Plant in early 2012, and preliminary design for the new site is underway. The project-level environmental review for the new project is anticipated to begin in mid-2013.
- The SFPUC completed a recycled water demand assessment of potential customers on the eastern side of San Francisco, and identified a demand potential of up to 2 mgd to be served by the proposed Eastside Recycled Water Project. The planning of Eastside Recycled Water Project treatment and distribution facilities was initiated in late 2011, with the goal of identifying a preferred project in 2013. The WSIP contains funding for planning, design, and project-level environmental review for the proposed Eastside Recycled Water Project.

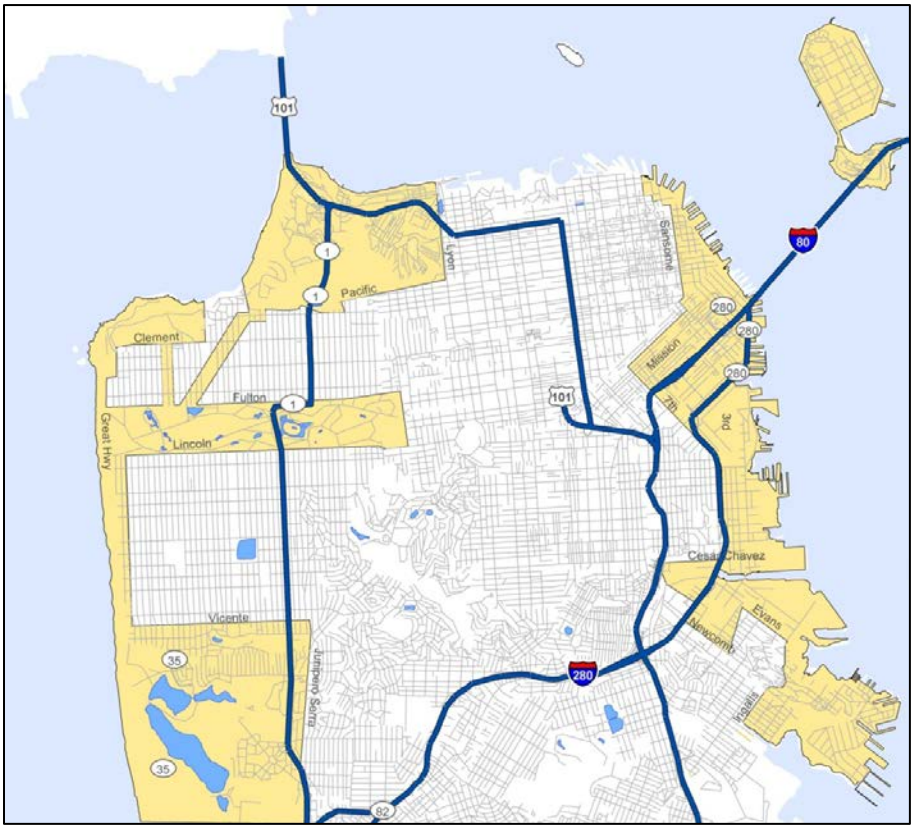

Figure 3: San Francisco's Designated Recycled Water Use Areas

2.3 Summary of Current and Future Retail Water Supplies

Table 3 provides a breakdown of current and projected water supply sources for meeting SFPUC retail water demand over the next 20 years.

Table 3: SFPUC Retail Water Supplies 2015-2035 in a Normal Year (mgd)

Water Supply Sources	2015	2020	2025	2030	2035
Existing Supply Sources					
RWS Watersheds - Retail Allocation	81.0	81.0	81.0	81.0	81.0
Suburban Groundwater & Subsurface Diversions[1]	0.7	0.7	0.7	0.7	0.7
North Westside Groundwater Basin[2]	1.5	1.5	1.5	1.5	1.5
Recycled Water - Harding Park & Sharp Park	0.3	0.3	0.3	0.3	0.3
Existing Supplies Subtotal	**83.5**	**83.5**	**83.5**	**83.5**	**83.5**
Future Supply Sources[3]					
Future North Westside Groundwater Basin Expansion[2]	0.0	2.8	2.8	2.8	2.8
Future Recycled Water Projects	0.0	2.0	4.0	4.0	4.0
Future Supplies Subtotal	**0.0**	**4.8**	**6.8**	**6.8**	**6.8**
TOTAL PROJECTED SUPPLIES	**83.5**	**88.3**	**90.3**	**90.3**	**90.3**

Notes:

1. These sources consist of groundwater use at Castlewood (not connected to RWS) of approximately 0.4 mgd, and subsurface diversions to Sunol Golf of approximately 0.3 mgd taken from the Sunol Infiltration Gallery.
2. The North Westside Groundwater Basin is currently used for irrigation. In-City groundwater use will be expanded for potable use with the San Francisco Groundwater Supply Project. Approximately 1.2 mgd of existing groundwater use will be converted to potable use (for a total of 4.0 mgd) once the Westside Recycled Water project is completed as a substitute irrigation water supply.
3. The implementation of proposed future supply sources is contingent on completion of necessary project-level environmental review and project approval. If these supplies are not available as planned, and if retail demand exceeds the available water supply, the Water Supply Agreement allows the SFPUC to import additional water from the RWS, with mitigation implemented by the SFPUC and potential environmental surcharges if RWS deliveries exceed the 265 mgd interim supply limitation. (Total RWS deliveries in FY11/12 were 219.4 mgd.)

2.4 Dry-Year Water Supplies

As an established major water supplier for the Bay Area region, the SFPUC is responsible for securing and managing its existing RWS supplies and planning for future needs, as well as securing its own retail supplies. During a drought, the SFPUC projects that retail and wholesale customers would experience a reduction in the amount of water received from the RWS. The WSIP water supply program includes development of the following dry-year supplies for the RWS:

- Restoration of Calaveras Reservoir capacity via the Calaveras Dam Replacement Project, which is currently under construction and anticipated to be completed in 2018;
- Restoration of Crystal Springs Reservoir capacity via the Lower Crystal Springs Dam Improvements Project, which was completed in 2013;

- Recapture of Calaveras Reservoir releases via the Upper Alameda Creek Filter Gallery Project[14], which is currently in the design phase and anticipated to be completed in 2019;
- Increase in groundwater storage volume and recapture via the Regional Groundwater Storage and Recovery (GSR) Project (a.k.a. Westside Basin Groundwater Conjunctive Use Project), for which the project-level Draft EIR was published on April 10, 2013, and construction is anticipated to be completed in 2016; and
- Water transfers, which are currently under negotiation.

The total available water supply during droughts would be allocated between wholesale and retail customers as described in Section 1.2.4.

Table 4 provides a breakdown of water supplies for meeting SFPUC retail demand over the next 20 years during Years 2 and 3 of multiple dry years. Local groundwater and recycled water supplies are assumed to remain constant regardless of a normal or dry year.

Table 4: SFPUC Retail Water Supplies 2015-2035 in Years 2 and 3 of Multiple Dry Years (mgd)

Water Supply Sources	2015	2020	2025	2030	2035
Existing Supply Sources					
RWS Watersheds - Retail Allocation	79.5	79.5	79.5	79.5	79.5
Groundwater & Subsurface Diversions[1]	0.7	0.7	0.7	0.7	0.7
North Westside Groundwater Basin[2]	1.5	1.5	1.5	1.5	1.5
Recycled Water - Harding Park & Sharp Park	0.3	0.3	0.3	0.3	0.3
Existing Supplies Subtotal	**82.0**	**82.0**	**82.0**	**82.0**	**82.0**
Future Supply Sources[3]					
Future North Westside Groundwater Basin Expansion[2]	0.0	2.8	2.8	2.8	2.8
Future Recycled Water Projects	0.0	2.0	4.0	4.0	4.0
Future Supplies Subtotal	**0.0**	**4.8**	**6.8**	**6.8**	**6.8**
TOTAL PROJECTED MULTIPLE DRY-YEAR SUPPLIES	**82.0**	**86.8**	**88.8**	**88.8**	**88.8**

Notes:
1. These sources consist of groundwater use at Castlewood (not connected to RWS) of approximately 0.4 mgd, and subsurface diversions to Sunol Golf of approximately 0.3 mgd taken from the Sunol Infiltration Gallery.
2. The North Westside Groundwater Basin is currently used for irrigation. In-City groundwater use will be expanded for potable use with the San Francisco Groundwater Supply Project. Approximately 1.2 mgd of existing groundwater use will be converted to potable use (for a total of 4.0 mgd) once the Westside Recycled Water project is completed as a substitute irrigation water supply.
3. The implementation of proposed future supply sources is contingent on completion of necessary project-level environmental review and project approval. These sources are intended to diversify normal-year supplies and meet dry-year needs as well.

[14] Although the Upper Alameda Creek Filter Gallery Project is not listed as a dry-year water supply project under WSIP, it is listed in this section because the infrastructure required to make the releases are included in the Calaveras Dam Replacement Project scope.

Continued progress on the dry-year supply projects is an important component of the SFPUC's dry-year water supply program. As part of the reservoir capacity projects, the SFPUC agreed to provide instream flow releases below Calaveras Dam and Lower Crystal Springs Dam, as well as bypass flows below Alameda Creek Diversion Dam, to obtain required federal and state resource agency permits for construction of those projects. The instream flow release requirements for Alameda Creek and San Mateo Creek represent a potential decrease in available annual average water supply of 3.9 mgd and 3.5 mgd, respectively, for a total shortfall of 7.4 mgd on an average annual basis. These instream flow releases could potentially create a shortfall in meeting the SFPUC system wide demands of 265 mgd and slightly increase the SFPUC's dry-year water supply needs. The effects of such a shortfall, if any, would occur upon completion of construction of both the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project, at the time when the SFPUC will be required to provide the instream flow releases. The SFPUC is currently exploring other future supplies to offset the 7.4 mgd, including:

- Development of additional conservation and recycling.
- Development of additional groundwater supplies.
- Securing of additional water transfer volumes.
- Increasing Tuolumne River supply.
- Revising the Upper Alameda Creek Filter Gallery Project capacity.
- Development of a desalination project.

If multiple dry years occur before the planned dry-year supply projects are implemented, then the SFPUC may impose measures to ensure a balance of supplies and demands. These measures include reducing system deliveries and imposing customer rationing.

3.0 Retail Water Demand Analysis

Retail water demands for the SFPUC are separated into In-City customers and suburban customers. Suburban customers are retail customers outside of San Francisco that are billed and served directly by the SFPUC and not through a wholesale agency (including San Francisco County Jail, San Francisco International Airport, NASA Ames Research Center, residents in Sunol and other commercial and residential customers). Suburban retail customer demands have remained relatively constant over the last 20 years. The suburban retail customer demands are not generated by the SFPUC's Retail Water Use Models, but are instead based on historic water use.

3.1 Revised City of San Francisco Growth Projections

SF Planning used the updated growth projections to develop 2012 LUA projections, as detailed in Section 1.1 and in a memorandum from SF Planning to the SFPUC dated January 28, 2013 (Appendix A). This analysis results in a 2035 growth projection that differs from the 2010 UWMP. Table 5 compares the new 2012 LUA growth projections to those used in the 2010 UWMP in 5-year increments from 2015 to 2035.

Table 5: 2035 Growth Projections for Households and Employment

	2015	2020	2025	2030	2035
Housing Units Projections					
2009 LUA Projections (used in 2010 UWMP)	363,213	376,109	389,463	403,292	415,000
2012 LUA Projections	361,452	377,684	393,630	410,227	426,235
Net Change	**(1,761)**	**1,575**	**4,167**	**6,935**	**11,235**
Employment Projections					
2009 LUA Projections (used in 2010 UWMP)	569,720	599,060	631,790	665,030	698,790
2012 LUA Projections	621,722	677,531	691,342	706,848	733,858
Net Change	**52,002**	**78,471**	**59,552**	**41,818**	**35,068**

3.2 Projected Retail Water Demands

In-City retail water demands are estimated using the City's Retail Water Use Models. The models were first developed in 2004 and updated in 2010 and again in 2012, as detailed below. The models incorporate economic and demographic forecast data, including projections of population, housing stock and employment. For additional information in regards to the model methodology, please see Section 4.1.5 of the 2010 UWMP.

In late 2012, SFPUC staff compared the last four years of actual conservation measure savings through fiscal year 2012 with forecasted savings for 2013 to 2018. The comparison showed that some measures could fall short of future estimates (mainly multi-family coin operated washing machines and multi-family toilet direct installs). In response, the SFPUC adjusted forecasted production for these measures. In light of the new growth projections and the model updates, the SFPUC reran the demand model and developed new water demand projections for In-City uses, as detailed in a memo from SFPUC staff dated February 22, 2013 (Appendix B). A summary of all retail water demands for SFPUC is presented in Table 6.

Table 6: San Francisco Retail Water Demands (mgd)

Water Use Entity	2012[1]	2015	2020	2025	2030	2035
In-City Retail Customers						
Single-Family Residential[2]	16.1	16.7	15.5	14.8	14.4	14.3
Multi-Family Residential[2]	24.9	28.1	27.7	27.6	27.9	28.6
Non-Residential[2]	23.2	26.5	27.7	27.5	27.7	28.7
Other In-City Demands[4,7]	0.2	0.2	0.2	0.2	0.2	0.2
In-City Irrigation Uses[5,7]	1.5	1.5	1.5	1.5	1.5	1.5
Losses[2,3]	6.9	5.1	5.2	5.2	5.2	5.3
In-City Retail Subtotal	**72.8**	**78.1**	**77.8**	**76.8**	**76.9**	**78.6**
Suburban Retail Customers						
Single-Family Residential[7]	0.1	0.1	0.1	0.1	0.1	0.1
Non-Residential[7]	3.7	4.3	4.3	4.3	4.3	4.3
Hetch Hetchy Water & Power Customers[6,7]	1.2	1.2	1.2	1.2	1.2	1.2
Suburban Retail Subtotal	**5.0**	**5.6**	**5.6**	**5.6**	**5.6**	**5.6**
Total Retail Demand	**77.8**	**83.7**	**83.4**	**82.4**	**82.5**	**84.2**

Notes:

1. 2012 data are based on actual billing data.
2. 2015-2035 projections were generated using the SFPUC Retail Demand Model and include savings from passive and active conservation.
3. Losses reported for 2012 include meter under-registration. Losses for 2015-2035 exclude meter under-registration because they are included in the retail demand projections for residential and non-residential sectors. Meter under-registration losses are estimated at 2.2% of residential and 2.1% of non-residential sector demands. System losses excluding meter under-registration are estimated at 6.86% of sector demand.
4. Builders and Contractors, Docks and Ships.
5. Irrigation at Golden Gate Park, the Great Highway, and the San Francisco Zoo.
6. Hetch Hetchy Water & Power Customers include Lawrence Livermore National Laboratory, Groveland Community Services District and other incidental uses.
7. 2015-2035 projections are based on average historic consumption, which has remained relatively constant over the past 20 years.

4.0 Supply and Demand Comparison

This section compares the SFPUC's retail water supplies and demands through 2035 utilizing the information presented in Sections 2.0 and 3.0. Table 7 compares the SFPUC's retail supplies and demand during normal-year, single dry-, and multiple dry-year periods. Currently, San Francisco has access to an annual average 83.4 mgd from all existing water supply sources. Beginning in 2016, the SFPUC's retail water supplies are projected to increase if the local groundwater and recycled water projects are approved and implemented. The demands estimated in this Study show that the 2012 LUA projections from SF Planning result in an increase in City retail demand. By 2035, the retail demand is estimated at 84.2 mgd, as shown in the figures below. Figure 4 compares the demand to normal-year supplies (from on Table 3), and Figure 5 compares demand to dry-year supplies (from Table 4).

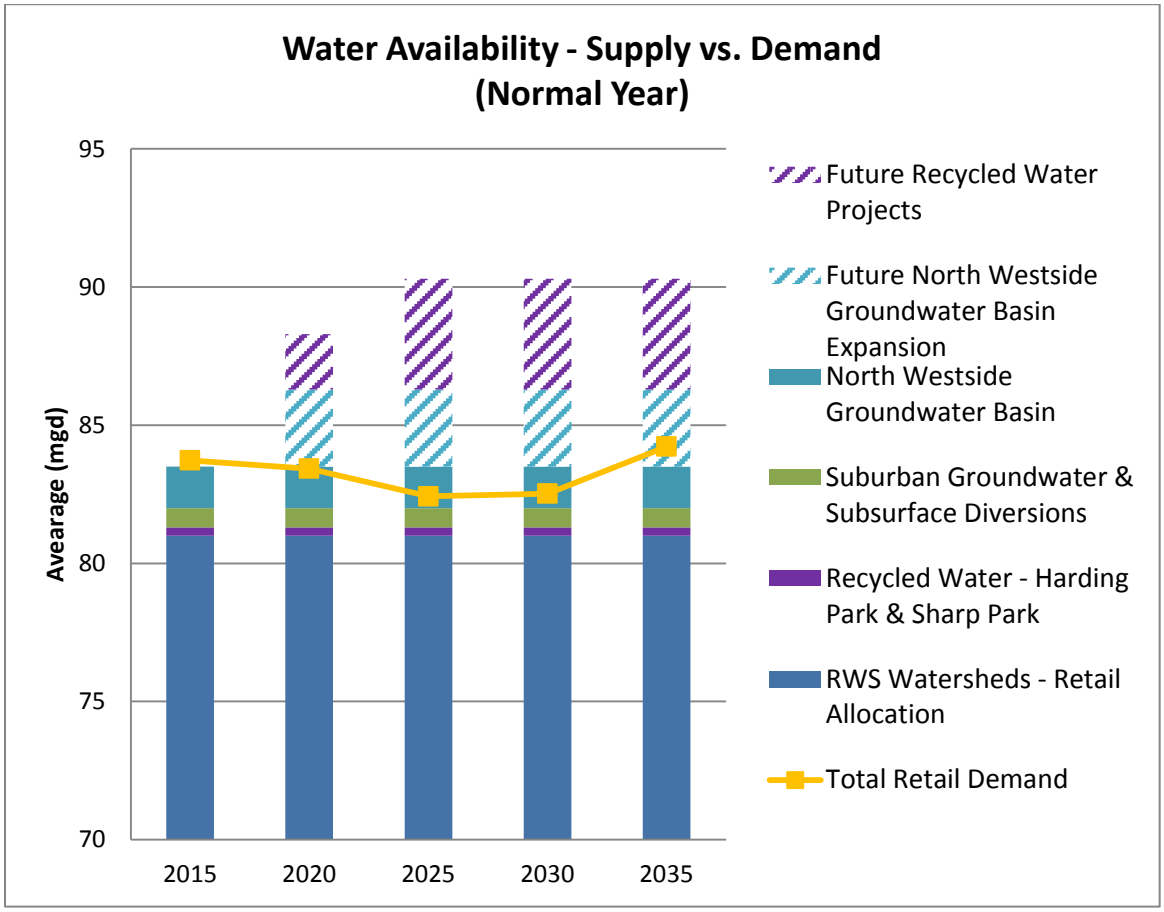

Figure 4: Normal-Year Supply and Demand Comparison

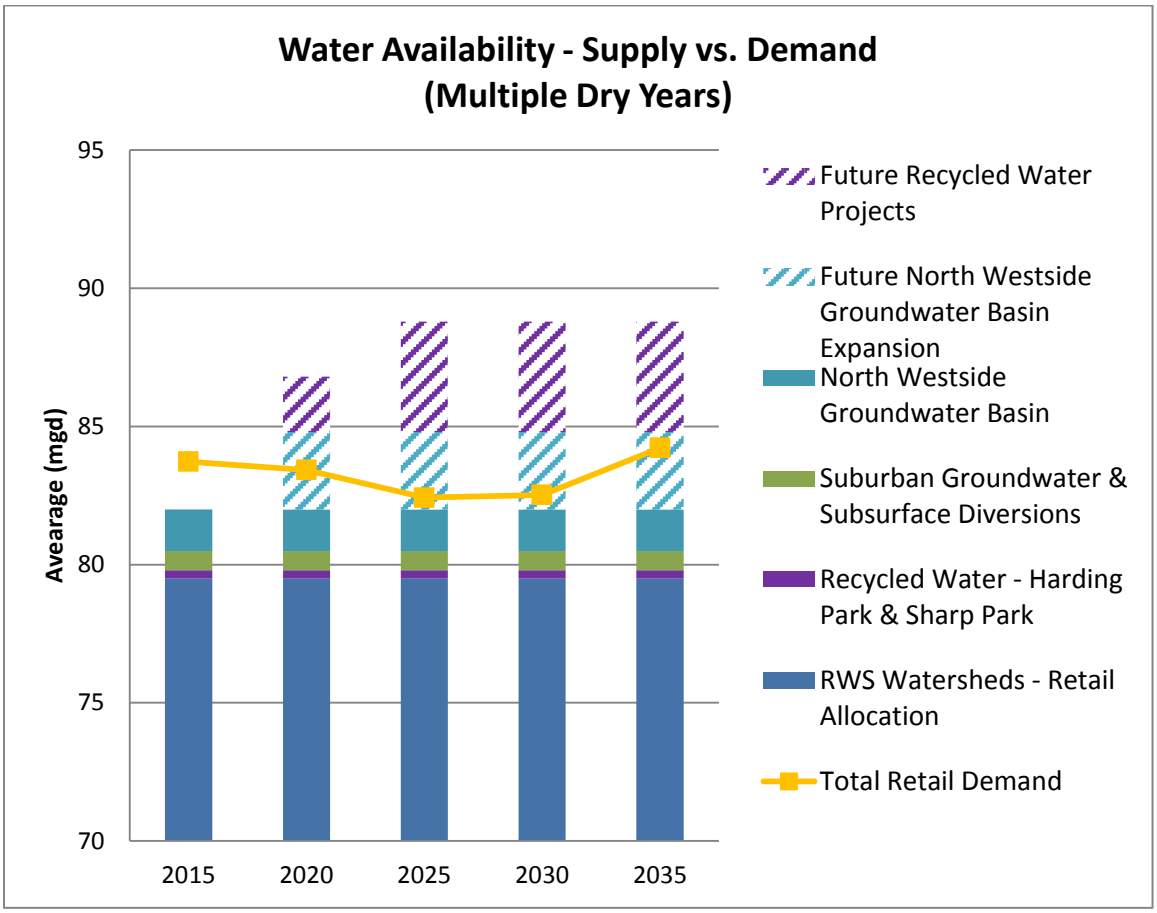

Figure 5: Multiple Dry-Year Supply and Demand Comparison

As shown in Table 7, the SFPUC, with its existing and future supplies, can meet the future demands of its retail customers in normal-, single dry-, and multiple dry-year events, with the exception of 2015. The deficit shown in 2015 can be attributed to a number of factors, including being within the margin of error and/or conservative assumptions of the demand model; propagated from aggressive near term employment and housing projections; and/or the result of demand increases prior to full implementation of the 10 mgd of new supplies under the Phased WSIP Variant. The deficit for 2015 in a normal year is 0.2 mgd, which represents less than a 0.25% shortfall. The deficit for 2015 in a multiple dry-year drought event is 1.7 mgd, which represents a 2.0% shortfall. These deficits could be easily managed through voluntary conservation measures or rationing. The SFPUC would have to declare a drought in 2014 to reach Year 2 of a multiple year event by 2015. As shown previously in Table 6, retail demand is currently lower than the 2015 projected demand (FY11/12 demand was 77.8 mgd). In the last 10 years, SFPUC's retail water demand has decreased by almost 10 mgd.

The other deficits shown in Table 7 are projected to occur if future supplies are not implemented as planned. The normal year deficits range from 0.2 to 0.7 mgd, which represent shortfalls of less than 1%. The multiply dry-year deficits range from 0.4 to 2.2 mgd, which represent shortfalls of up to 2.7%. These deficits are comparable to those described above for 2015 under normal-year conditions with future supplies, and could be easily managed through voluntary conservation measures or rationing.

Table 7: Projected Supply and Demand Comparison (mgd)

		Normal Year[1,2]	Single Dry Year[1,2]	Multiple Dry Years		
				Year 1[1,2]	Year 2[2,3]	Year 3[2,3]
2015	Total Retail Demand	83.7	83.7	83.7	83.7	83.7
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	(0.2)	(0.2)	(0.2)	(1.7)	(1.7)
	Total Retail Supply – Existing & Future Supplies[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)[5]	(0.2)	(0.2)	(0.2)	(1.7)	(1.7)
2020	Total Retail Demand	83.4	83.4	83.4	83.4	83.4
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	0.1	0.1	0.1	(1.4)	(1.4)
	Total Retail Supply – Existing & Future Supplies[4]	88.3	88.3	88.3	86.8	86.8
	Surplus/(Deficit)	4.9	4.9	4.9	3.4	3.4
2025	Total Retail Demand	82.4	82.4	82.4	82.4	82.4
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	1.1	1.1	1.1	(0.4)	(0.4)
	Total Retail Supply – Existing & Future Supplies[4]	90.3	90.3	90.3	88.8	88.8
	Surplus/(Deficit)	7.9	7.9	7.9	6.4	6.4
2030	Total Retail Demand	82.5	82.5	82.5	82.5	82.5
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)	1.0	1.0	1.0	(0.5)	(0.5)
	Total Retail Supply – Existing & Future Supplies[4]	90.3	90.3	90.3	88.8	88.8
	Surplus/(Deficit)	7.8	7.8	7.8	6.3	6.3
2035	Total Retail Demand	84.2	84.2	84.2	84.2	84.2
	Total Retail Supply – Existing Supplies Only[4]	83.5	83.5	83.5	82.0	82.0
	Surplus/(Deficit)[6]	(0.7)	(0.7)	(0.7)	(2.2)	(2.2)
	Total Retail Supply – Existing & Future Supplies[4]	90.3	90.3	90.3	88.8	88.8
	Surplus/(Deficit)	6.1	6.1	6.1	4.6	4.6

Notes:

1. Normal-year retail water supplies per Table 3.
2. Retail water demands per Table 6.
3. Year 2 and 3 of multiple dry years per Table 4.
4. Existing and future supply sources per Table 3 (repeated in Table 4).
5. The deficit shown for 2015 in a normal year with existing and future supplies represents less than a 0.25% shortfall and during a multiple dry-year drought event represents a 2.0% shortfall, which can be easily managed through voluntary conservation measures or rationing. Current retail demand in FY11/12 was 77.8 mgd. If retail demand exceeds the available water supply of 83.5 mgd, the Water Supply Agreement allows the SFPUC to import additional water from the RWS, with mitigation implemented by the SFPUC and potential environmental surcharges if RWS deliveries exceed the 265 mgd interim supply limitation. (Total RWS deliveries in FY11/12 were 219.4 mgd.)
6. The deficit shown for 2035 is projected if none of the local groundwater and recycled water projects are implemented as described in Section 2.2.

Whether or not future supplies are available, if the SFPUC determines in a particular year that projected total RWS storage is less than target storage levels devised in relation to the design drought, it may implement the terms of the WSAP to achieve a combined average reduction in wholesale and retail water use of up to 20 percent. In addition, the SFPUC currently serves approximately 1.0 mgd to retail irrigation lessees on an interruptible basis. It is anticipated that the San Francisco Groundwater Supply Project will provide an additional 1.0 mgd of water supplies beginning in mid-2016.

In addition, if retail demand exceeds the available water supply of 83.5 mgd in normal years, the Water Supply Agreement allows the SFPUC to import additional water from the RWS. If combined retail and wholesale RWS deliveries exceed the 265 mgd interim supply limitation, the SFPUC retail customers would be required to pay an environmental enhancement surcharge for RWS deliveries over 81 mgd as detailed previously in Section 1.2.4. In addition, the SFPUC would need to implement mitigation measures per the WSIP PEIR as described in Section 1.2.3. (Total RWS deliveries in FY11/12 were 219.4 mgd.)

4.1 Conclusion

The updated 2012 SF Planning projections result in a retail demand in 2035 of 84.2 mgd, which represents a 3.3 mgd, or 4%, increase over the 2035 demand projections estimated in the 2010 UWMP. The ability to meet the demand of the retail customers is in large part due to development of 10 mgd of local WSIP supplies, including conservation, groundwater, and recycled water. These supplies are anticipated to be fully implemented over the next 10 years.

If planned, future water supply projects (i.e., San Francisco Groundwater Supply Project [or Westside Groundwater Basin Expansion], Westside Recycled Water Project, and Eastside Recycled Water Project) are not implemented, normal-year supplies may not be enough to meet projected retail demands. To balance any water supply deficits during normal years, the SFPUC may import additional water from the RWS, with mitigation implemented by the SFPUC and potential environmental surcharges if RWS deliveries exceed the 265 mgd interim supply limitation.

If dry-year supply projects (i.e., Calaveras Dam Replacement Project, Lower Crystal Springs Dam Improvements Project, Upper Alameda Creek Filter Gallery Project, GSR Project, and water transfers) are not implemented, existing dry year supplies may not be enough to meet projected retail demands. To balance any water supply deficits during dry years, the SFPUC may reduce system deliveries and impose customer rationing.

The SFPUC remains committed to meeting the level of service goals and objectives outlined under WSIP. In addition, the SFPUC is currently exploring other future supplies, including:

- Development of additional conservation and recycling.
- Development of additional groundwater supplies.
- Securing of additional water transfer volumes.
- Increasing Tuolumne River supply.
- Revising the Upper Alameda Creek Filter Gallery Project capacity.
- Development of a desalination project.

Appendix A - SF Planning Memorandum

SAN FRANCISCO
PLANNING DEPARTMENT

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

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January 28, 2013

Michael P. Carlin
Deputy General Manager, SFPUC
525 Golden Gate Street
San Francisco, CA 94102

Subject: Projections of growth 2015-2035

Dear Michael:

I am forwarding you the Department's current growth projections as requested by Paula Kehoe, Manager, Water Resources Planning, SFPUC. Table 1 shows the projections for the requested years 2015-2035 from the Planning Department's long range Land Use Allocation (LUA) 2012.

Table 1: Development Projections

	2015	2020	2025	2030	2035
Households	361,452	377,684	393,630	410,227	426,235
Jobs	621,772	677,531	691,342	706,848	733,858

Source: ABAG SCS 2012 (May). SF Planning, Land Use Allocation 2012.

The Planning Department routinely updates its long range LUA when ABAG updates their regional projections, typically, every two years. The Department uses the LUA for a variety of purposes, including analyzing impacts of plans and projects undergoing the environmental review process. This past summer, the Department updated its LUA for the recently released ABAG Sustainable Community Strategy Jobs-Housing Connections Scenario (ABAG SCS 2012).

In updating the LUA, the Department's method uses the best information available to allocate the growth to location. That information includes proposed and entitled projects (the "pipeline"), area plan development potential, and parcels with high development potential located outside area plan boundaries. The Planning Department assumed full buildout over the forecast period of the six large development projects at the beginning of their environmental review, namely Giants/Mission Rock (Sea Wall Lot 337 & Pier 48), Warriors Arena (Piers 30-32), Pier 70 Master Plan, 5M (901 Mission Street-Chronicle Building), Moscone Center Expansion, and the Central Corridor Plan.

If you or your staff have any questions, please contact Scott Edmondson, AICP, by email (Scott.Edmondson@sfgov.org) or telephone (415-575-6818).

Sincerely,

John Rahaim
Director of Planning

CC: Paula Kehoe (SFPUC), Scott Edmondson & Aksel Olsen (Planning Department)

Appendix B - SFPUC Memorandum

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

MEMO

February 22, 2013

To: Steve Ritchie, Assistant General Manager, Water Enterprise

From: Paula Kehoe, Water Resources Director

Re: Updates to 2011 Retail Conservation Plan

This memo summarizes two areas of updated data that revise some conservation and demand estimates noted in the SFPUC's 2011 Retail Water Conservation Plan.

1) Updated Conservation Measure Production

The 2011 Retail Water Conservation Plan published in June 2011 notes a maximum conservation potential of 5 mgd demand reduction by 2018. The Plan also notes that the SFPUC regularly evaluates and reports on conservation activities. To that end, in late 2012, the SFPUC compared the last four years of actual conservation measure production through fiscal year 2012 with forecasted production for 2013 to 2018. The comparison showed that some measures could fall short of future estimates (mainly multi-family coin operated washing machines and multi-family toilet direct installs). In response, the SFPUC adjusted forecasted production for these measures, which resulted in a reduction of the overall estimated conservation potential to 4.1 mgd savings in 2018. The SFPUC intends to prepare a complete update of the Retail Water Conservation Plan every five years along with the Urban Water Management Plan. The next major update will be in 2015.

2) Updated Population and Employment Data

In January 2013, the San Francisco Planning Department provided the SFPUC updated population and employment projections for 2015 through 2035 from the Planning Department's long range Land Use Allocation (LUA) 2012. The Planning Department routinely updates its long range LUA when the Association of Bay Area Governments (ABAG) updates its regional projections, typically, every two years. These updated projections represent an increase in households in 2020 through 2035 and jobs in 2015 through 2035 used in the version of the SFPUC's forecast model that provided demand projections in the 2011 Retail Water Conservation Plan.

The attached, revised Tables 16 and 17 from the *SFPUC Retail Demand Model Update and Calibration Technical Memo* contained in Appendix A of the 2011 Retail Water Conservation Plan incorporate the updated conservation measure production, population and employment data noted in items 1 and 2 above.

Edwin M. Lee
Mayor

Art Torres
President

Vince Courtney
Vice President

Ann Moller Caen
Commissioner

Francesca Vietor
Commissioner

Anson Moran
Commissioner

Harlan L. Kelly, Jr.
General Manager

Table 16 - Revised 2/2013 to Reflect Updates to Measure Production, Housing and Employment Data
SFPUC In-City Retail Demand Projection: 2005 - 2035
(mgd)

Single Family In-City Retail Demand (mgd)	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Basline Demand without Codes or SFPUC Conservation Programs	**19.6**	**20.3**	**20.4**	**20.5**	**20.5**	**20.6**	**20.9**
Less Savings from Codes	*0.9*	*1.6*	*2.4*	*3.4*	*4.0*	*4.6*	*5.0*
Adjusted Baseline Demand	**18.7**	**18.7**	**17.9**	**17.1**	**16.5**	**16.0**	**15.8**
Less Savings from 2005-30 SFPUC Conservation Programs	*0.0*	*0.6*	*1.3*	*1.6*	*1.7*	*1.7*	*1.5*
Demand with Codes & SFPUC Conservation Programs	**18.7**	**18.1**	**16.7**	**15.5**	**14.8**	**14.4**	**14.3**
Savings from Codes & SFPUC Conservation Programs	***0.9***	***2.2***	***3.7***	***4.9***	***5.8***	***6.3***	***6.5***
Multi Family In-City Retail Demand (mgd)	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Basline Demand without Codes or SFPUC Conservation Programs	**29.8**	**32.1**	**33.0**	**34.7**	**36.2**	**37.9**	**39.7**
Less Savings from Codes	*1.3*	*2.7*	*4.3*	*6.2*	*7.7*	*9.0*	*10.1*
Adjusted Baseline Demand	**28.4**	**29.3**	**28.8**	**28.5**	**28.6**	**28.9**	**29.6**
Less Savings from 2005-30 SFPUC Conservation Programs	*0.0*	*0.2*	*0.6*	*0.8*	*0.9*	*1.0*	*1.0*
Demand with Codes & SFPUC Conservation Programs	**28.4**	**29.1**	**28.1**	**27.7**	**27.6**	**27.9**	**28.6**
Savings from Codes & SFPUC Conservation Programs	***1.3***	***2.9***	***4.9***	***7.0***	***8.6***	***10.0***	***11.2***
Non Residential In-City Retail Demand (mgd)	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Basline Demand without Codes or SFPUC Conservation Programs	**25.7**	**25.2**	**28.9**	**31.4**	**32.0**	**32.8**	**33.9**
Less Savings from Codes	*0.1*	*0.5*	*1.0*	*1.6*	*1.9*	*2.3*	*2.5*
Adjusted Baseline Demand	**25.6**	**24.7**	**27.9**	**29.9**	**30.0**	**30.5**	**31.4**
Less Savings from 2005-30 SFPUC Conservation Programs	*0.01*	*0.50*	*1.45*	*2.17*	*2.51*	*2.79*	*2.70*
Demand with Codes & SFPUC Conservation Programs	**25.6**	**24.2**	**26.5**	**27.7**	**27.5**	**27.7**	**28.7**
Savings from Codes & SFPUC Conservation Programs	***0.1***	***1.0***	***2.5***	***3.7***	***4.5***	***5.1***	***5.2***
Other (mgd)	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Builders & Contractors, Docks & Shipping	0.2	0.2	0.2	0.2	0.2	0.2	0.2
System Losses Excluding Meter Under-Registration (mgd)[1]	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Calculated as % of Adjusted Baseline Demand	5.0	5.0	5.1	5.2	5.2	5.2	5.3
Total In-City Retail Demand (mgd)	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Basline Demand without Codes or SFPUC Conservation Programs	**80.3**	**82.8**	**87.7**	**92.0**	**94.2**	**96.7**	**100.0**
Less Savings from Codes	*2.3*	*4.8*	*7.7*	*11.1*	*13.7*	*15.8*	*17.7*
Adjusted Baseline Demand	**78.0**	**78.0**	**80.0**	**80.9**	**80.5**	**80.9**	**82.4**
Less Savings from 2005-30 SFPUC Conservation Programs	*0.0*	*1.3*	*3.3*	*4.6*	*5.2*	*5.5*	*5.2*
Demand with Codes & SFPUC Conservation Programs	**78.0**	**76.6**	**76.7**	**76.4**	**75.3**	**75.4**	**77.1**
Savings from Codes & SFPUC Conservation Programs	***2.3***	***6.2***	***11.0***	***15.6***	***18.8***	***21.3***	***22.9***
Per Capita Demand (Gal/Day/Person)							
Population (1,000)	787	835	855	875	896	917	963
Basline Demand without Codes or SFPUC Conservation Programs	102	99	103	105	105	105	104
Adjusted Baseline Demand	99	93	94	92	90	88	86
Demand with Codes & SFPUC Conservation Programs	99	92	90	87	84	82	80

[1] Meter under-registration losses are included in the retail demands for residential and non-residential sectors.

Meter under-registration losses estimated at 2.2% of residential and 2.1% of non-residential sector demands. System losses exluding meter under-registration estimated at 6.86% of sector demand of the "codes only" demand projection.

Table 17 - Revised 2/2013 to Reflect Updates to Measure Production, Housing and Employment Data
SFPUC In-City Retail Water Demand Projections: 2010 - 2020
(mgd)

Single Family In-City Retail Demand (mgd)	**2010**	**2012**	**2014**	**2016**	**2018**	**2020**
Basline Demand without Codes or SFPUC Conservation Programs	**20.3**	**20.3**	**20.3**	**20.4**	**20.4**	**20.5**
Less Savings from Codes	*1.6*	*1.9*	*2.3*	*2.6*	*3.0*	*3.4*
Adjusted Baseline Demand	**18.7**	**18.4**	**18.1**	**17.8**	**17.4**	**17.1**
Less Savings from 2005-30 SFPUC Conservation Programs	*0.6*	*0.9*	*1.1*	*1.3*	*1.5*	*1.6*
Demand with Codes & SFPUC Conservation Programs	**18.1**	**17.5**	**16.9**	**16.4**	**16.0**	**15.5**
Savings from Codes & SFPUC Conservation Programs	***2.2***	***2.8***	***3.4***	***3.9***	***4.4***	***4.9***
Multi Family In-City Retail Demand (mgd)	**2010**	**2012**	**2014**	**2016**	**2018**	**2020**
Basline Demand without Codes or SFPUC Conservation Programs	**32.1**	**32.5**	**32.8**	**33.4**	**34.0**	**34.7**
Less Savings from Codes	*2.7*	*3.3*	*4.0*	*4.6*	*5.4*	*6.2*
Adjusted Baseline Demand	**29.3**	**29.1**	**28.9**	**28.7**	**28.6**	**28.5**
Less Savings from 2005-30 SFPUC Conservation Programs	*0.2*	*0.4*	*0.5*	*0.7*	*0.7*	*0.8*
Demand with Codes & SFPUC Conservation Programs	**29.1**	**28.7**	**28.3**	**28.0**	**27.9**	**27.7**
Savings from Codes & SFPUC Conservation Programs	***2.9***	***3.7***	***4.5***	***5.3***	***6.1***	***7.0***
Non Residential In-City Retail Demand (mgd)	**2010**	**2012**	**2014**	**2016**	**2018**	**2020**
Basline Demand without Codes or SFPUC Conservation Programs	**25.2**	**26.7**	**28.2**	**29.4**	**30.4**	**31.4**
Less Savings from Codes	*0.5*	*0.7*	*0.9*	*1.1*	*1.3*	*1.6*
Adjusted Baseline Demand	**24.7**	**26.0**	**27.3**	**28.3**	**29.1**	**29.9**
Less Savings from 2005-30 SFPUC Conservation Programs	*0.5*	*0.9*	*1.3*	*1.6*	*1.9*	*2.2*
Demand with Codes & SFPUC Conservation Programs	**24.2**	**25.1**	**26.0**	**26.7**	**27.2**	**27.7**
Savings from Codes & SFPUC Conservation Programs	***1.0***	***1.6***	***2.2***	***2.7***	***3.2***	***3.7***
Other (mgd)	**2010**	**2012**	**2014**	**2016**	**2018**	**2020**
Builders & Contractors, Docks & Shipping	0.2	0.2	0.2	0.2	0.2	0.2
System Losses Excluding Meter Under-Registration (mgd)[1]	**2010**	**2012**	**2014**	**2016**	**2018**	**2020**
Calculated as % of Adjusted Baseline Demand	5.0	5.1	5.1	5.1	5.2	5.2
Total In-City Retail Demand (mgd)	**2010**	**2012**	**2014**	**2016**	**2018**	**2020**
Basline Demand without Codes or SFPUC Conservation Programs	**82.8**	**84.8**	**86.7**	**88.6**	**90.3**	**92.0**
Less Savings from Codes	*4.8*	*6.0*	*7.1*	*8.4*	*9.7*	*11.1*
Adjusted Baseline Demand	**78.0**	**78.8**	**79.6**	**80.2**	**80.5**	**80.9**
Less Savings from 2005-30 SFPUC Conservation Programs	*1.3*	*2.1*	*2.9*	*3.6*	*4.1*	*4.6*
Demand with Codes & SFPUC Conservation Programs	**76.6**	**76.6**	**76.6**	**76.6**	**76.5**	**76.4**
Savings from Codes & SFPUC Conservation Programs	***6.2***	***8.1***	***10.1***	***12.0***	***13.8***	***15.6***
Per Capita Demand (Gal/Day/Person)						
Population (1,000)	835	843	851	859	867	875
Basline Demand without Codes or SFPUC Conservation Programs	99	101	102	103	104	105
Adjusted Baseline Demand	93	93	94	93	93	92
Demand with Codes & SFPUC Conservation Programs	92	91	90	89	88	87

[1] Meter under-registration losses are included in the retail demands for residential and non-residential sectors. Meter under-registration losses estimated at 2.2% of residential and 2.1% of non-residential sector demands. System losses exluding meter under-registration estimated at 6.86% of sector demand of the "codes only" demand projection.

Attachment B –

UCSF Long Range Development Plan Demand Memo

University of California
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DATE: January 27, 2014

TO: Fan Lau, SFPUC

FROM: Tammy Chan, UCSF Campus Planning

RE: Water Supply Assessment Request for University of California, San Francisco (UCSF) 2014 Long Range Development Plan (LRDP)

The purpose of this memorandum is to request that the San Francisco Public Utilities Commission (SFPUC) prepare a Water Supply Assessment (WSA) for UCSF's 2014 LRDP.

Water Code 10910 and 14 CCR 15155 (entitled "City or County Consultation with Water Agencies") apply only to cities and counties. Water Code 10910(a) states "Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part."

Although these requirements do not specifically apply to the University of California, San Francisco, or the University of California, because it is not a city or county, UCSF is voluntarily requesting a WSA be prepared following the requirements of SB 610 for informational purposes for the net new development proposed as part of our LRDP, including the program level components. We are making this request as part of our cooperative planning with the City and County of San Francisco, and to inform the EIR analysis.

The memorandum dated March 13, 2013, from SFPUC requires Project Proponents to provide, a) a description of the Project, and b) the proposed project demand for all proposed water uses. The following sections discuss the required items in detail.

A. Project Description

The University of California, San Francisco (UC San Francisco or UCSF) is one of ten campuses in the University of California (UC) system, and is the only UC campus devoted solely to the health sciences. UCSF's mission is to advance health worldwide through innovative health sciences education, research and patient care. UCSF is a multi-site campus with locations throughout the City and County of San Francisco, encompassing approximately 8.04 million total gross square feet. Its major academic and clinical sites are at Parnassus Heights, Mission Bay and Mount Zion, with a major presence at the City's San Francisco General Hospital (SFGH) site.

In support of its mission, UCSF is preparing a new Long Range Development Plan (LRDP) to guide future campus growth and development through the year 2035. UCSF currently occupies 6.99 million gross square feet (gsf) in owned space and 1.05 million gsf in leased space in San Francisco. By 2035, UCSF's total owned and leased space will be about 12.37 million gsf, an increase of about 53% from existing conditions. The summary of existing

and total projected gsf at LRDP horizon in 2035 is shown below in **Table 1**. The total space across all campus sites would increase by about 4.33 million gsf. Of the 4.33 million gsf, there is approximately 1.14 million gsf that is currently under construction at the Mission Bay campus site and is scheduled for completion in 2015. Therefore, the projected campus growth under the LRDP by 2035 would be 3.19 million gsf.

TABLE 1
SUMMARY OF TOTAL UCSF EXISTING, LRDP HORIZON 2035 GSF AND NET CHANGE

Type of Space	Existing 2013[1,2] Total gsf	LRDP Horizon 2035 Total gsf	Change in gsf from existing (2013-2035)[3]
Instruction	608,000	711,800	103,800
Research	2,109,700	3,063,800	954,100
Clinical	1,926,700	3,783,500	1,856,800
Support			
Academic Support	417,900	573,000	155,100
Academic/Campus Admin	1,506,200	1,829,700	323,500
Campus Community	397,100	491,200	94,100
Logistics	400,000	560,400	160,400
Support Subtotal	2,721,200	3,454,300	733,100
Housing	638,500	1,306,100	667,600
Vacant/Alteration	36,700	50,000	13,300
Total	**8,040,800**	**12,369,300**	**4,328,500**

[1] Existing as of January 2014
[2] Excludes 1,618,100 gsf of structured parking (653,700 gsf at Parnassus Heights; 176,500 gsf at Mount Zion; 680,500 gsf at Mission Bay; and 107,400 gsf at Laurel Heights) .
[3] Total leased space is assumed to decrease from 1,050,000 sf in 2013 to 750,000sf in 2035.

B. Proposed Project Demand

As required as part of the project demand analysis, the LRDP's projected water demand is shown below in **Table 2**.

TABLE 2
WATER DEMAND BASED ON PROJECT PHASING

	2013	2015	2020	2025	2030	2035
Demand of total UCSF growth (MGD)	-	0.15	0.06	0.12	0.18	0.30
Demand of UCSF net new growth (MGD)	**-**	**-**	**0.03**	**0.05**	**0.08**	**0.14**

[1] 4.33 million gsf total UCSF growth

[2] 1.48 million gsf net new UCSF growth

[3]The 2013/2015 demand is based on actual current usage - 0.06 ccf/gsf. Future demand for 2020-2035 is based on a reduced 0.048 ccf/gsf rate, reflecting the conservation programs discussed below.

[4] Water Availability Study for the City and County of San Francisco, Appendix A - "SF Planning Memorandum" dated January 28, 2013, Prepared by the San Francisco Public Utilities Commission, May 2013.

As shown in **Table 1**, the total amount of space across all campus sites would increase by 4.33 million gsf over the next 20 years. Of that 4.33 million gsf, 2,845,700 gsf has been previously accounted for in

Planning Department growth projections; [1] and 1,482,800 gsf is growth not previously identified in the Planning Department 2035 growth projections. Net new growth is the additional space proposed under the 2014 UCSF Long Range Development Plan. In order to present the most conservative analysis possible, both the net new growth, 1.48 million gsf and the total water demand associated with all UCSF future growth, 4.33 million gsf, is accounted for in Table 2.

The 1,482,800 gsf of net new growth includes 991,800 gsf at the Mission Bay campus site. The additional 491,000 gsf of net new growth is distributed at the four other UCSF campus sites: Parnassus Heights, Mount Zion, SFGH, and the Mission Center Building at 1855 Folsom Street. The infrastructure effects of the growth at the Mission Bay campus site are discussed in the *LRDP Entitlement Increase Analyses Report for Public and Private Utilities*, Freyer & Laureta, May 2013. This report is attached and provided for reference.

As the City's second largest employer, UCSF currently consumes 0.85 MGD. As shown in **Table 2**, the net new growth represents an additional demand of 0.14 MGD or 0.15% of the total supply in 2035. The San Francisco Water Availability Study[2] estimates that supply could be reduced by 1.9% in the multiple dry year scenario. The project's water demand does not propose adjustments based on water year type. As the City's largest healthcare provider, short-term response to demand is relatively inelastic. In addition, UCSF participates in the voluntary conservation measures identified in the 2013 Water Availability Study[3] - 4.0 Supply and Demand Comparison– that are deemed to be sufficient to meet a multiple dry-year drought event.

UCSF has achieved a 20% reduction in water use per gsf from 1990 to 2010. UC policy sets a long-term goal of achieving 20% reduction per capita use of potable water by year 2020. UCSF has a funded program to assess Campus water conservation opportunities and to implement the identified improvements. http://sustainability.universityofcalifornia.edu/policy.html Therefore, UCSF does anticipate 20% per capita water use reductions over the long-term.

The UCSF Parnassus Heights campus is in the North Westside Groundwater Basin and UCSF does not draw any groundwater from the basin at Parnassus Heights campus site. The UCSF Mission Bay campus is in the Eastside Recycled Water Use Area. Future UCSF use of recycled water from the Eastside system is contingent upon completion of City constructed distribution.

As part of the submittal, we have also provided some additional background data regarding UCSF's water usage and the April 2013 Parnassus Campus Water Efficiency Survey. We believe the information provided meets the requirements for the preparation of a Water Supply Assessment by the SFPUC. Should you have additional questions, please contact me at Tchan@planning.ucsf.edu or 415.476.9627. Thank you.

[1] The remaining 2,845,700 gsf of UCSF growth, has been previously analyzed by the City in the Mission Bay South Redevelopment Plan, and, the 1996 UCSF LRDP EIR.
[2] "2013 Water Availability Study for the City and County of San Francisco", prepared by the San Francisco Public Utilities Commission, May 2013.
[3] Ibid.

University of California San Francisco - 2014 Long Range Development Plan

rev: January 2014

UCSF LRDP	2013	2015	2020	2025	2030	2035
UCSF estimated demand (MGD) [1]	0.85	1.00	0.91	0.96	1.02	1.14
Total UCSF growth (MGD)	**-**	**0.15**	**0.06**	**0.12**	**0.18**	**0.30**
UCSF net new growth (MGD)	**-**	**-**	**0.03**	**0.05**	**0.08**	**0.14**
Existing SFPUC supplies subtotal	83.5	88.3	90.3	90.3	90.3	90.3
UCSF estimated demand with conservation as % of City total supply	1.02%	1.13%	1.01%	1.07%	1.13%	1.27%
Water Estimated Demand (CCF) without conservation	413,723	487,481	555,568	588,086	624,806	697,222
Water Estimated Demand (CCF) with conservation	413,723	487,481	444,454	470,469	499,845	557,778
Total Water Estimated Demand (MGD) with conservation	0.85	1.00	0.91	0.96	1.02	1.14
Conservation Delta		-	111,114	117,617	124,961	139,444
Total Gross Square Feet [2]	6,990,900	8,124,681	9,259,459	9,801,431	10,413,431	11,620,365
Net new (not in CCSF planning Dept assumpt) GSF		-	481,373	711,277	970,888	1,482,869
Housing Square Feet [2]	638,500	638,500	1,112,200	1,112,200	1,112,200	1,306,000
Gross Square feet minus housing	6,352,400	7,486,181	8,147,259	8,689,231	9,301,231	10,314,365
Housing (units)	*756*	*756*	*1,352*	*1,352*	*1,352*	*1,581*
Total Population	39,864	42,609	47,161	50,726	54,267	57,954
Students	4,446	4,917	5,156	5,388	5,388	5,388
Faculty and Staff	26,070	27,303	29,457	31,818	34,409	37,250
Patients	3,012	3,530	4,048	4,494	4,940	5,192
Visitors	4,887	5,410	5,967	6,471	6,975	7,359
Total Housing residents [4]	*1,449*	*1,449*	*2,533*	*2,555*	*2,555*	*2,765*
Housing residents at Mission Bay	*891*	*891*	*1,782*	*1,782*	*1,782*	*1,782*
Housing residents at Parnassus	*558*	*558*	*751*	*773*	*773*	*983*

Notes:

1. Existing UCSF water use is 0.06 CCF per GSF or 10.4 CCF per capita . Future demand estimated at 0.06 CCF per GSF.
UCSF believes that 0.06 CCF per GSF factor is a conservative assumption. The factor was determined by using the actual SFPUC water bills averaged over a 3-year period (2007-2010) and the actual UCSF total space. UCSF has achieved a measured 20% reduction in water use per gsf in the 1990 to 2010 period. UCSF has a very accurate database of water use (CCF) and total space (GSF) associated with the campus. In addition UC Policy requires future new buildings to be both LEED silver and incorporate water savings design features. UC has a policy goal of achieving 20% reduction per capita of potable water use by 2020. http://sustainability.universityofcalifornia.edu/policy.html

2. Includes all UCSF owned occupied space in San Francisco/SFPUC served area. Excludes 1.5m gsf in existing parking structures. Includes housing.
Excludes UCSF owned space not in San Francisco/SFPUC served area. CAAN 3029 Fresno MERC 84,175 gsf
Excludes all leased space in San Francisco/SFPUC served area. Total leased space is not projected to change over life of plan.

3. Future UCSF growth at Mission Bay has been previously submitted to the City:
See "UCSF Long Range Development Plan Entitlement Increase Analyses - May 17, 2013"

4. Total Population - Residents of housing are also included in Student/ Faculty population.

UCSF Actual Purchased Water
20% Conservation Policy Baseline Data

Source : 654 Minnesota Finance Service Center Utilities Group
Data includes UCSF Medical Center
UCSF baseline data for reduction calculation is FY 07-08, 08-09, and 09- 10. (405,466 ccf)
http://www.swrcb.ca.gov/water_issues/hot_topics/20x2020/
The City's reclaimed water system does not currently extend to the UCSF campus sites.
A portion of future reductions in potable water is related to reclaimed water availability at Mission Bay.

FY 2012-13 Year-to-Date	WATER		
Site	CCF	$	Rate
Parnassus Heights	205,348	$ 2,836,811	13.815
Mount Zion	3,170	$ 41,065	12.954
Laurel Heights	9,860	$ 125,312	12.709
Mission Center	3,464	$ 42,019	12.130
Mission Bay	131,385	$ 1,661,906	12.649
Hunters Point	5,278	$ 63,931	12.113
Parnassus (other)	23,428	$ 331,455	14.148
Outlying Sites	2,840	$ 42,872	15.096
Total	**384,773**	**$ 5,145,370**	**13.372**

* data updated as of 10/11/13

FY 2010 - 2011	WATER		
Site	CCF	$	RATE
Parnassus Heights	252,178	$3,171,242	$12.58
Mount Zion	3,953	$44,779	$11.33
Laurel Heights	11,737	$132,573	$11.29
Mission Center	4,882	$57,693	$11.82
Mission Bay	110,392	$1,175,621	$10.65
Hunters Point	5,016	$53,608	$10.69
Outlying Sites	24,051	$282,359	$11.74
Total	**412,209**	**$4,917,875**	**$11.93**

FY 2008-2009	WATER		
Site	CCF	$	Rate
Parnassus Heights	267,439	$ 2,794,280	$ 10.45
Mount Zion	6,865	$ 70,466	$ 10.26
Laurel Heights	13,848	$ 142,504	$ 10.29
Mission Center	7,358	$ 80,419	$ 10.93
Mission Bay	89,776	$ 836,752	$ 9.32
Hunters Point	3,881	$ 38,048	$ 9.80
Outlying Sites	25,258	$ 257,719	$ 10.20
Total	**414,425**	**$ 4,220,188**	**$ 10.18**

FY 2011 - 2012	WATER		
Site	CCF	$	Rate
Parnassus Heights	227,972	$ 3,014,950	13.225
Mount Zion	3,362	$ 40,558	12.064
Laurel Heights	13,592	$ 162,069	11.924
Mission Center	5,826	$ 64,728	11.110
Mission Bay	130,538	$ 1,541,800	11.811
Hunters Point	5,774	$ 65,860	11.406
Outlying Sites	26,659	$ 330,569	12.400
Total	**413,723**	**$ 5,220,534**	**12.618**

FY 2009-2010	WATER		
Site	CCF	$	Rate
Parnassus Heights	243,024	$ 2,923,125	$ 12.03
Mount Zion	4,053	$ 43,537	$ 10.74
Laurel Heights	12,100	$ 129,528	$ 10.70
Mission Center	6,166	$ 70,529	$ 11.44
Mission Bay	96,578	$ 968,619	$ 10.03
Hunters Point	4,451	$ 42,760	$ 9.61
Outlying Sites	23,083	$ 257,872	$ 11.17
Total	**389,455**	**$ 4,435,970**	**$ 11.39**

FY 2007-2008	WATER		
Site	CCF	$	Rate
Parnassus Heights	270,986	$ 2,474,004	$ 9.13
Mount Zion	7,575	$ 70,062	$ 9.25
Laurel Heights	14,190	$ 131,765	$ 9.29
Mission Center	7,804	$ 74,986	$ 9.61
Mission Bay	77,935	$ 650,767	$ 8.35
Hunters Point	6,874	$ 58,952	$ 8.58
Outlying Sites	27,155	$ 243,073	$ 8.95
Total	**412,519**	**$ 3,703,609**	**$ 8.98**

Site	Primary Address
Parnassus Heights	500 Parnassus Avenue
Mount Zion	1600 Divisadero
Laurel Heights	3333 California Street
Mission Center	1855 Folsom Street
Mission Bay	600 16th Street
Hunters Point	831 Palou
Outlying Sites	Includes South San Francsisco - 620 Forbes

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

LONG RANGE DEVELOPMENT PLAN
ENTITLEMENT INCREASE ANALYSES

Public and Private Utilities
UCSF Mission Bay Campus, North of 16th

May 17, 2013

FREYER & LAURETA, INC.

FREYER & LAURETA, INC. CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

May 17, 2013

Mr. Kevin Beauchamp
Director of Physical Planning
UCSF Campus Planning
654 Minnesota Street, Second Floor
San Francisco, CA 94143

Re: Long Range Development Plan Entitlement Increase Analyses
Public and Private Utilities - UCSF Mission Bay Campus, North of 16th

Dear Mr. Beauchamp:

As discussed, UCSF is currently preparing its next Long Range Development Plan (LRDP), which addresses future growth and will guide Campus development until 2035. Freyer & Laureta, Inc. (F&L) has been asked to perform a utility infrastructure capacity analysis based on a preferred development plan, north of 16th Street, provided to us by the University in order to continue due diligence for the LRDP. This letter reports our findings from our analyses.

In the *1999 Mission Bay Campus Master Plan*, the 43-acre research campus north of 16th Street was entitled for 2.65 million gross square feet (gsf). Upon completion of the academic building on Block 25A, approximately 465,200 gsf of entitlement would remain. The preferred plan proposes 3,641,800 gsf of total entitlement, an increase of 991,800 gsf. Programming for the additional building space includes Research, Office, Central Utilities Plant (CUP), and Student Housing, per the table below:

Table 1 – Development Plan/Programming

Building	Program	Building Size (gsf)
15a/b	Housing and Childcare	418,200
16a	Central Utility Plant	53,000
16b	Research	236,00
25b	Research/Office	323,250
23a	Research	232,200
18a	Office	192,850

This letter report summarizes our findings on the existing public utility infrastructure surrounding the UCSF Mission Bay Campus and projected improvements that may need to be constructed for each system to serve the additional entitlement desired by the University. This letter report also provides a sensitivity analysis for infrastructure that may be affected by both UCSF and current planned development projects in Mission Bay. For this study,

F&L performed the Domestic Water, Reclaimed Water, Fire Sprinkler, Storm Drain and Sanitary Sewer analyses, John Lambert from Client First Consulting Group provided analyses for Telecom/Data and Alarms and John VanNoord & Associates provided analyses for Electrical and Natural Gas analyses.

UTILITY LOAD ESTIMATION

The University previously estimated building utility loads in 1999, based on anticipated building programming at the time. Since then, buildings have been constructed on Blocks 17, 19, 20, 21, 23B, and 24. Construction is currently underway on Block 25A, with a slightly larger program than previously envisioned. In order to estimate utility capacity needs for the study area, we estimated building utility loads for both the constructed buildings and the future buildings on Blocks 15, 16, 18, 23A and 25B, based on anticipated programming for these future buildings. The following factors/methods were used to calculate building loads:

Sanitary Sewer

Sewer Demand Factors established in the "Mission Bay Separated Sanitary Sewer Analysis" prepared by Olivia Chen Consultants dated December 26, 2000, were used in our analyses. For programming not defined in this Analysis, sewer factors from Metcalf and Eddy were used. A peaking factor of 3 was used to calculate peak flows.

From Mission Bay Separated Sanitary Sewer Analysis (average flows):

Mission Bay Campus	0.174 gpd/gsf
Housing	170 gpd/unit

From Metcalf and Eddy:

Childcare Center	20 gpd/person
Hospital Bed	165 gpd/bed
Visitors and Hospital Employees	15 gpd/person

Domestic Water

In the 1999 Building Load Estimates, Domestic Water loads were estimated to be equal to Sanitary Sewer loads. In this analysis, Sanitary Sewer flows are estimated to be 90% of Domestic Water loads. A majority, but not necessarily all, water use within buildings drain into the Sanitary Sewer system.

Natural Gas

The following factors were used in Natural Gas Building Load Estimation:

Housing	0.12 scfh/gsf	(scfh – standard cu ft/hr)

Research	0.10 scfh/gsf
Office	0.12 scfh/gsf
Childcare	0.15 scfh/gsf
Research and Office	0.10 scfh/gsf

These factors have been successfully used in estimating gas demand for project sites in Mission Bay. Gas loads for the CUP were obtained from reports provided by the University.

Electrical

The following factors were used in Electrical Building Load Estimation:

Housing	18 va/gsf	(va – volt-amps)
Research	30 va/gsf	
Office	10 va/gsf	
Childcare	12 va/gsf	
Research and Office	30 va/gsf	
Central Utilities Plant	460 va/gsf	

These factors have also been successfully used in estimating electrical demand for project sites in Mission Bay.

Telecom/Data/Alarms

Each Campus Building has two physically separate data cable entrances, connected to the University owned Telecom/Network infrastructure of vaults on University property. The information listed on the Utility Load table for Telephone, Data and Alarms are based on known infrastructure required for each building.

Reclaimed Water

Reclaimed water is used for irrigation and other non-potable uses, such as toilet flushing. In the past, the University has not used Reclaimed Water, but provisions are being made to have main lines fronting all Campus Development Blocks to allow the option to connect.

Fire Protection

For Fire Protection, the California Fire Code 2007 was used to calculate flow requirements. Type 1A construction was assumed for each building for fire flow estimates. If buildings are sprinklered, the Fire Code allows for a 75% reduction of the fire flow requirement. We assumed this 75% reduction would be allowed in our analyses. If the 75% reduction resulted in required fire flow less than the minimum 1,500 gpm, we listed 1,500 gpm in the Table.

Please see Table 2 – UCSF Long Range Development Plan Estimated Utility Loads for estimated utility demands for each building, used in our analyses.

Estimated Building Utility Loads
UCSF Mission Bay Campus

TABLE 2 - UCSF LONG RANGE DEVELOPMENT PLAN ESTIMATED UTILITY LOADS

Building	Building Use	Programmed Use	Planned Building Size (GSF)[6]	Actual Building Size (GSF)	Future Building Size (GSF)	Natural Gas (SCFH)	Electrical Calculated (KVA)	Telephone Calculated (pairs)	Data (Primary) MDC1 (SM)	Data (Secondary) MDC2 (SM)	Fire Alarm (Ring In) (SM)	Fire Alarm (Ring Out) (SM)	Domestic Water (GPM)	Reclaimed Water[3] (GPM)	Fire Protection (GPM)	Sanitary Sewer Peak Flow Calculated (GPM)
24A/B	Research/Instruction	Research/Instruction	384,880	384,900		38,490	11,547	1,200	36	36	12	12	155	50	1,500	140
19B	Animal Care/Research	Animal Care/Research	174,840	170,600		17,060	5,118	900	36	36	12	12	69	50	1,500	62
21B	Cam.Comm.Ctr./Env. Heal. & Saf	Cam.Comm.Ctr./Env. Heal. & Saf	180,280	161,200		1,620	4,836	400	36	36	12	12	65	50	1,500	58
17A	Research/Instruction	Research/Instruction	130,000	236,000		23,600	7,080	600	36	36	12	12	95	50	1,500	86
17B	Research/Instruction	(included in 17a)	75,000													
17C	Research/Instruction	Research/Instruction	145,000	162,000		16,200	4,860	400	36	36	12	12	65	50	1,500	59
19A	Animal Care/Research	Research	225,000	237,000		23,700	7,110	600	36	36	12	12	95	50	1,500	86
23B	Third St Garage Office	Third St Garage Office		4,200		504	42	100	24	24	12	12	2		1,500	2
24C	Research/Instruction	Research/Instruction	140,000	154,400		15,440	4,632	600	36	36	0	0	62	50	1,500	56
20A	Administration/Logistics	Housing	92,000	410,300		49,236	7,385	1,200	36	36	12	12	189	50	1,500	170
25A	Research/Instruction	Faculty Office Building	133,000	265,700		31,884	2,657	100	36	36	12	12	107	50	1,500	96
15A	Research	Housing	145,000		398,700	47,844	7,177	100	36	36	12	12	206	50	1,500	185
15B	Research	Childcare	145,000		19,500	2,925	234	100	36	36	12	12	11	50	1,500	10
16A	Research/Instruction	CUP	225,000		53,000	56,000-146,000	24,380	100	36	36	12	12	21	50	1,500	19
16B	Animal Care/Instruction	Research	100,000		236,000	23,600	7,080	100	36	36	12	12	95	50	1,500	86
25B	Research/Instruction	Research/Office	225,000		323,250	32,325	9,698	100	36	36	12	12	130	50	1,500	117
23A	Administration/Logistics	Research	130,000		232,200	23,220	6,966	900	36	36	12	12	94	50	1,500	84
18A	Office	Office			192,850	23,142	1,929	100	12	12	12	12	78	50	1,500	70
18B	CUP - Logistics	Sports Field	30,000													
			2,680,000	**2,186,300**	**1,455,500**	**370,790**	**112,731**	**7,600**	**576**	**576**	**192**	**192**	**1,539**	**800**	**25,500**	**1,385**

Total Building SF 3,641,800

Assumptions:
- Building loads are based on current Master Planning information and subject to change.
- Subtotals and Programs Total loads assume 100% diversity.
- All individual building loads assume each building has its own mechanical room, with no central Utility Plant.
- All loads are approximate, actual design of the buildings are not known at this time.

Notes:
1. Utility Plant includes all practical loads necessary to supply steam and chilled water to all UCSF Buildings. The phase of construction and location of a Utility Plant, if at all, is not known at this time. Individual building loads will reduce once a Central Plant is constructed.
2. Natural Gas 45 - 60 psig minimum at street.
3. Reclaimed water demand estimated for irrigation purposes only, no reclaimed water needed for building use.
4. Total building fire-protection water to be specified by Fire Marshall. Fire flow determination was per the 2007 California Fire Code.
5. The Total Gas Load shown does not include loads from the CUP (neither demand nor generation).

Abbreviations:

SCFH- st. cubic feet per hour
KVA - kilovolt-amps
pairs - telephone
GSF - gross square feet

EXISITING CAMPUS AND PUBLIC UTILITY ANALYSES

At this time, a majority of public utility infrastructure is constructed surrounding the Campus. Only the utilities adjacent to Block 25 in 16th and Third Streets and the Joint Trench in Mission Bay Blvd South between Sixth and Fourth Streets remains to be constructed. Also, public utility infrastructure is completed in Fourth Street traversing the Campus. In our analyses, we reviewed the capacities of the public utility infrastructure surrounding and traversing the Campus and our findings and estimations are listed below. They are also depicted in Exhibits 1 through 9, found in Appendix A – Utility Exhibits.

Storm Drain

The storm drain piping in the public streets surrounding and traversing the Campus is of sufficient size to collect planned 5-yr storm runoff from the Campus. The increase in building square footage does not increase planned drainage volumes from development blocks. Campus storm drainage piping, per the UCSF Mission Bay Civil Master Plan and as shown on Exhibit 1 – Storm Drainage Exhibit, is required to be constructed to drain the development parcels.

Based on understanding of the Mission Bay Storm Drainage Master Plan and Campus Storm Drain Piping, we conclude there is no need to replace/upsize City and University storm drainage conveyance piping already constructed.

Separated Sanitary Sewer Pipeline Conveyance

The increase of entitlement increases peak sewer flow from the study area from 1,087 gpm (gallons per minute), per the Mission Bay Separated Sanitary Sewer Analysis, to 1,385 gpm, an increase of 298 gpm. Of this increased flow, 159 gpm drains through piping in Owens Street, Mission Bay Blvd South, Fourth Street and Third Street that flows toward the Sanitary Sewer Pump Station on Mission Bay Park P15 and the remaining 139 gpm drains toward the sewer piping in 16th Street and Illinois Street, which ultimately flows to the Mariposa Pump Station.

We calculated pipeline capacities for the sanitary sewer conveyance system and results are shown below. In our analyses, we compared these capacities to the increased flow rates.

Table 3 – Sanitary Sewer Piping to SSPS on P15

Street	Pipe Diameter (inches)	Tributary Blocks	Estimated Peak Demand (gpm)	Pipe Capacity (gpm)
Owens Street (Section 1)	12	18, 21, portion of 41, 42, 43	394	875
Mission Bay Blvd South (Section 2)	18	Section 1 + 12, 14, 15, 19a and portion of 16	729	2,580

Mission Bay Blvd South (Section 3)	21	Section 2 + portion of 16	815	3,895
Fourth Street (Section 4)	8	23a and 19b	146	475
Fourth Street (Section 5)	10	Section 4 + 20a, 17a/b	282	843
Third Street (Section 6)	15	23b, 20b, and areas east of Third	414	1,535

These results exclude increased, planned gross square footage for future development blocks in Mission Bay. Additional results can be seen on Exhibit 2, Sanitary Sewer Exhibit.

For the piping leading to the Mariposa Pump Station, we not only estimated increased sewer flows from Blocks 24 and 25, but also the Hospital site. Blocks X3 and 36-39, on which the Hospital site is situated, had a projected peak flow rate of 412 gpm in the Mission Bay Separated Sanitary Sewer Analysis. Information from the Final Environmental Impact Report, UCSF Medical Center at Mission Bay, Certified by The Regents of the University of California, September 17, 2008, included the Hospital site ultimately having 550 hospital beds and 9,119 staff members, interns, students, visitors and vendors, constructed in two phases. Phase 1 is currently under construction and Phase 2 is anticipated to begin construction after 2030. Using the sewer unit factors listed in a previous section, we projected a peak flow of 474 gpm from the hospital site, an increase of 62 gpm.

This projected increased flows from the Hospital site and Blocks 24 and 25 were used in our piping analyses tributary to the Mariposa Pump Station. Our findings are below:

Table 4 – Sanitary Sewer Piping to Mariposa Pump Station

Street	**Pipe Diameter (inches)**	**Tributary Blocks**	**Estimated Peak Demand (gpm)**	**Pipe Capacity (gpm)**
Owens Street (Section 1)	8	24a/b and portion of 41	140	628
16th Street (Section 2)	12	Section 1 + P26 and 40	322	1,822
16th Street (Section 3)	18	Section 2 + Hospital site and 25	1,065	5,376
16th Street (Section 4)	18	Section 3 + 31	1,182	1,885
Illinois Street (Section 5)	24	Section 4 + 32, 33, 34, and X4	1,445	4,542

Based on our analysis, we conclude it is not necessary to replace/upsize City and University sanitary sewer conveyance piping already constructed in order to serve the proposed increase in Campus gross square footage. However, sanitary sewer piping will need to be constructed on Campus to serve future development parcels, as shown on Exhibit 2. This does not deviate from the UCSF Mission Bay Civil Master Plan.

Sanitary Sewer Pump Station on P15

The capacity of the pump station was designed to meet the flow rate defined in the "Mission Bay Separated Sanitary Sewer Analysis" prepared by Olivia Chen Consultants dated December 26, 2000, revised August 13, 2001, February 25, 2002, February 10, 2004 (for the UCSF Blocks 20A/B Project), and per the updated sanitary sewer analyses prepared by Winzler & Kelly dated July 2005. The pump station was design to collect and pump a projected peak flow rate of 6.4 MGD. To meet this demand, the pump station was designed with four variable speed, 25-horsepower (hp), Flygt NP3171-435 submersible pumps. Three pumps were designed to handle projected peak flow rates and one was for stand-by.

Prior to project acceptance, the Engineer of Record, Winzler & Kelly prepared an Engineer's Evaluation of Pump Performance, found in Appendix B of this report. In that evaluation, in-situ pump performance testing was performed, with the results showing that three pumps operating together discharge at a rate of 4,686.8 gpm (6.7 MGD). This in 0.3 MGD higher than the projected peak flow at the time the pump station was designed.

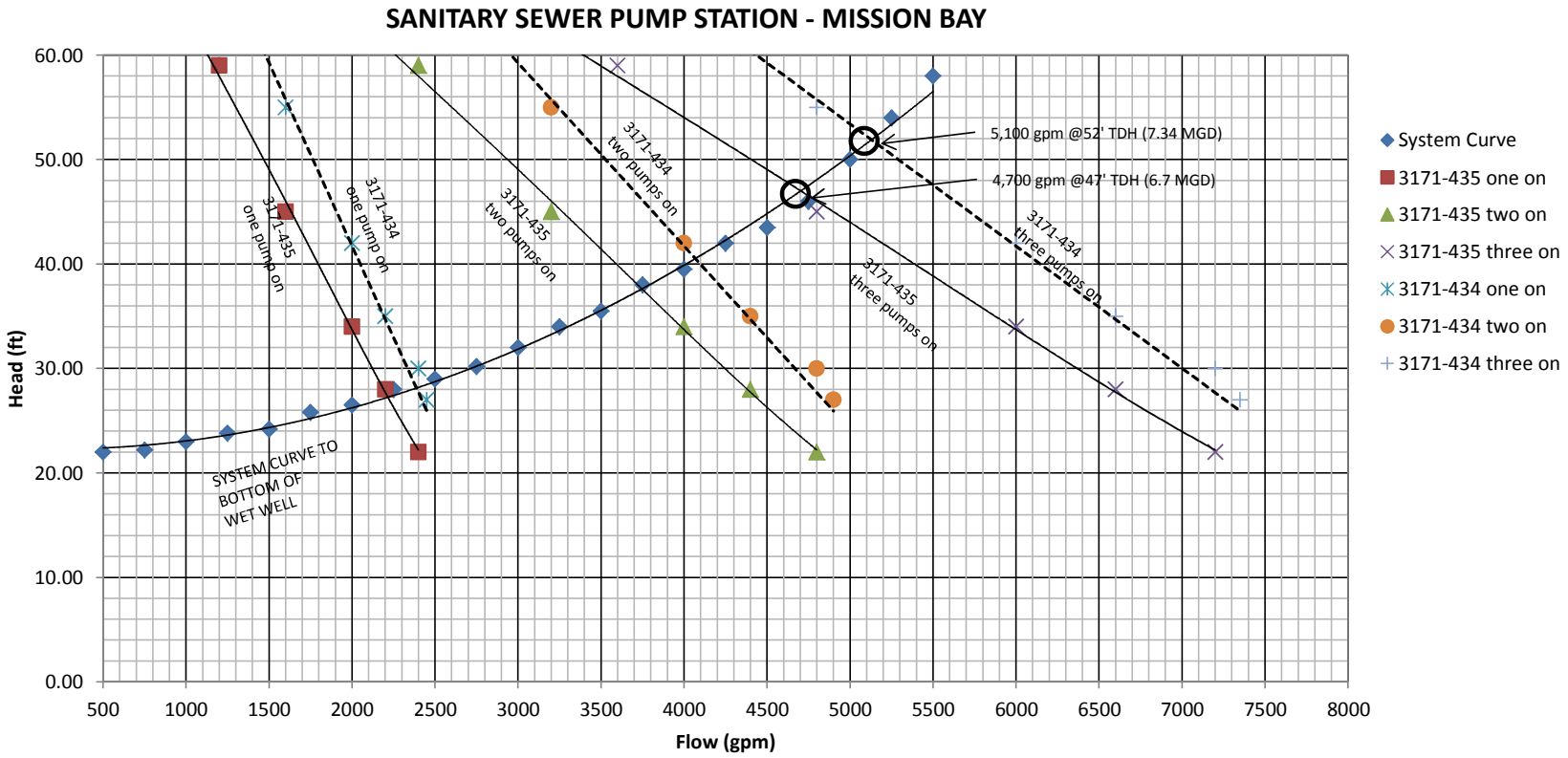
As reported in the previous section, the estimated peak flow increase to the pump station on P15 due to the University's planned entitlement increase is 159 gpm (0.23 MGD), resulting in the need for pump station capacity of 6.63 MGD. This is below the pumping capacity of the pump station, however it potentially may leave the pump station with insufficient excess capacity desired by the City.

To provide extra pump station capacity, the pump station can be modified without structural or piping modifications. The existing NP3171-435, 25hp pumps can be replaced with NP-3171-434, 30hp pumps which are physically the same size and can easily connect to existing discharge piping. This will increase the pump station capacity to 5,100 gpm (7.34 MGD), as shown on Chart 1 – SSPS Pump Upgrade.

Existing conductors from the panel can be re-used to serve these new pumps, however four circuit breaker switches, one per pump, will need to be replaced from 70 amp breakers to 80 amp breakers.

There is a potential need to increase capacity at this pump station to increase excess capacity. Four existing 25 horsepower, Flygt NP 3171 435 pumps will need to be replaced with four 30 horsepower, Flygt NP 3171 434 pumps. Also, four breaker switches will need to be replaced from 70 amps to 80 amps. This will increase pump station capacity without structural or piping modifications at the pump station.

Chart 1 - SSPS Pump Upgrade



Mariposa Pump Station

The Mariposa Pump Station is a combined (sewer and storm) system pump station. Approximately 1,456 gpm peak sanitary sewer flows to this pump station from the Campus (including the Hospital Site) and tributary Mission Bay Blocks.

Per the "Revised Summary Drainage Study for the South of Channel Water Shed" prepared by Santina and Thompson dated December 2000, a storm drain pump station will be constructed in Park P23 that will collect and discharge into the Bay stormwater at a rate of 72 cfs (32,314 gpm). This volume of stormwater will be diverted from the Mariposa Pump Station post storm drain pump station construction. The new storm drain pump station will drastically reduce the volume of water to the Mariposa Pump Station, allowing it to more than adequately handle the projected increased water.

Based on understanding of the Mission Bay Drainage Study and on the estimated tributary sewer flows being less than the capacity of the stormwater pump station being constructed in P23, we conclude there is no need to increase capacity at the Mariposa Pump Station.

Fire Protection Water

The UCSF private fire protection water supply system consists of 12-inch high density polyethylene (HDPE) underground piping. There are three points of connection between the City low pressure water system and the UCSF private fire system: 1) Owens Street & Gene Friend Way, 2) Owens Street & Campus Way, and 3) Fourth Street & Nelson Rising Lane. The first two connections constitute the "southern system, and the third constitutes the "northern system". This system supplies water to hydrants throughout the Campus and to building fire sprinkler systems. The fire protection pipe network feeding from the Fourth Street/Nelson Rising Lane was recently connected to the other two pipe systems as part of the "Mission Bay Civil and CUP Utilities and Surface Improvements in Support of 19A – M8448" Project. Therefore, all three points of connection feed piping that interconnect, creating a looped fire protection water supply system.

As part of the above mentioned M8448 Project, a Fire Protection Water Supply Study was performed for Building 19A by CSW / Stuber Stroeh with support from Cosco Fire Protection, who performed fire flow tests on both the northern and southern systems (prior to connection). This study can be found in Appendix C. For our analysis, we remodeled the Campus' Fire Protection Water Supply system using the information from the CSW/Stuber Stroeh study. For demand, we assumed the 75% reduction factor previously mentioned would be allowed in our analyses by the University's Fire Marshal. The fire flow demand for each building is 1,500 gpm with a residual pressure of 20 psi. Also, our analysis assumes that only one building is drawing from the University's Fire Protection Water Supply system an any given time. Results of our analysis can be found in the following table:

Table 5 – Fire Protection Results

Building	Fire Flow Demand (gpm)	Pressure at Fire Flow Demand (psi)	Fire Flow at 20 psi
15a/b	1,500	43.93	2,450
16a	1,500	44.02	2,450
16b	1,500	44.19	2,480
18a	1,500	43.87	2,450
23a	1,500	43.27	2,400
25b	1,500	42.41	2,320

Based on our analysis, there is sufficient capacity in the Fire Protection Water Supply System to meet fire flow requirements (granted the 75% reduction factor) for each proposed building. Additional campus fire protection water supply piping will need to be installed per Exhibit 4, Low Pressure Water Exhibit, per the UCSF Mission Bay Civil Master Plan adjacent to development blocks to serve future buildings. Results can be found in Appendix D.

Domestic Water

For this analyses, we collected data from various low pressure water system reports written for Mission Bay Development by Winzler & Kelly, the latest being a study performed for Fifth & King Intersection titled “Computer Modeling and Analysis of the Low Pressure Water System, Fifth and King Intersection” dated September 25, 2004, which modeled the Mission Bay low pressure water pipe network for both north and south of Channel, incorporating the domestic demand for each block per the entitlements at the time of the study and fire flow for one development block North of Channel, near the intersection of Fifth and King.

The following domestic water demands and calculated residual pipe pressures from this study for piping around the study area are listed in Table 5- Water System Pressures from Original Water Model. Again, this assumes a development block North of Channel is drawing fire flow from the pipe system. The table shows an average of 60 psi around the Campus, with the domestic demand included.

Table 6 – Water System Pressures from Original Water Model

Node Location	Demand (gpm)	Pipe Pressure (psi)
Mission Bay Circle	164.8	60.34
MBBS at Fifth	33.6	60.35
MBBS at Fourth	8	63.84

MBBS at Third	46.4	60.73
Owens at Nelson Rising	46.4	58.95
Owens at Gene Friend	44.8	58.81
Owens at Campus Way	51.2	59.25
Owens at 16th	56	59.38
16th at Fourth	11.2	59.22
16th at Third	116	58.52
4th at Nelson Rising	33.6	60.42
4th at Gene Friend	32	60.49
4th at Campus Way	30.4	60.16
Third at South Street	65	59.19
Third at MBBS	46.4	60.73

As mentioned in the Separated Sanitary Sewer Pipeline Conveyance Analysis section of the report, an additional 298 gpm of wastewater is estimated to be generated from the additional square footage planned by the University. With the estimation that wastewater is 90% of domestic water demand, 331 gpm of additional domestic water demand is estimated for the additional square footage planned by the University.

We distributed this additional water demand across the future development blocks based on the calculated percentage of each block's estimated wastewater flow against the total additional wastewater flow. Calculated percentages are listed below:

Table 7 – Percentage of Additional Wastewater Demand

Development Block	**Distribution Percentage**	**Additional Water Demand (gpm)**
Block 15	34	113.04
Block 16	18	60.72
Block 18	12	40.52
Block 23a	15	48.79
Block 25c	21	67.92
Total	100	331

For our analysis we remodeled the pipe network surrounding the study area, incorporating the fire flow data as mentioned in the Fire Protection section of this report to model water supply, and injecting the additional water demand at nodes adjacent to the future development blocks, in order to determine the pipe pressure reduction caused by additional water demand. The reduction in pressure was found to be 2.65 psi for piping surrounding the

study area. This pressure was then subtracted from the pressure values from the W&K study, with results listed below:

Table 8 – Water System Pressures with added Entitlement

Node Location	**Demand (gpm)**	**Pipe Pressure (psi)**
Mission Bay Circle	164.8	57.69
MBBS at Sixth	*113.04*	57.7
MBBS at Fifth	*94.32*	57.7
MBBS at Fourth	8	61.19
MBBS at Third	46.4	58.08
Owens at Nelson Rising	*86.92*	56.3
Owens at Gene Friend	44.8	56.16
Owens at Campus Way	51.2	56.6
Owens at 16th	56	56.73
16th at Fourth	11.2	56.57
16th at Third	*183.92*	55.87
4th at Nelson Rising	33.6	57.77
4th at Gene Friend	32	57.84
4th at Campus Way	*79.19*	57.51
Third at South Street	65	56.54
Third at MBBS	46.4	58.08

Note: Italicized figures represent demands increased to incorporate demand from future development blocks.

Based on our analysis, we conclude it is not necessary to replace/upsize City low pressure piping already constructed, as there is sufficient capacity in the pipe system to supply increased water demand to the development parcels. In order to obtain required pressures within the buildings, water pumps may need to be installed. This will be determined at the time buildings are designed.

Reclaimed Water

Currently, the University does not draw water from the City's Reclaimed Water Line, which currently is charged with domestic water, as there is no existing source for reclaimed water. There are reclaimed water mains fronting Blocks 18, 23a, and 23b, however not yet fronting Blocks 15 and 16.

To provide the option for the University to connect Blocks 15 and 16 to the Reclaimed Water System, a main line will be installed in Merrimac and Mission Bay Blvd South by the Mission Bay Development Group. This can be seen on Exhibit 5 – Reclaimed Water.

Telecom/Data/Alarms

UCSF Mission Bay campus Buildings are interconnected to network and telephone services through a University owned and operated infrastructure that resides on UCSF property with ROW crossings at three points along 4th street and connections to the public infrastructure on 3rd Street, 16th Street, Owens Street and Mission Bay Blvd South. There are (2) Main Distribution Centers (MDCs) on the campus and (1) Building Distribution Facility (BDF) in each building. Each BDF has two fiber optic cable connections to the MDCs. Each BDF has one copper cable connection to the campus infrastructure. As of January 2013 Mission Bay campus buildings are provided with telephone service through AT&T Centrex with a few exceptions. The Neuroscience building that came on line in 2012 is utilizing a Voice over IP (VoIP) system for telephone service and it is interconnected to the public infrastructure through the campus data network. The campus housing complex on block 20 does not utilize campus dial tone to service the residential living units. The residential units are treated like most apartments in San Francisco and the residence purchase telephone services directly from AT&T.

Two Buildings on the campus have been provided with Comcast cable television service. The Rutter Center and the campus housing on Block 20. Comcast enters the campus at Gene Friend Way and 3rds Street and routes its broadband cable through campus conduits and innerduct to service these two properties. The Rutter Center is serviced with hard-line coax and the campus housing with single mode fiber both connected to the Comcast infrastructure in the Mission Bay area. We anticipate that new campus housing will be supported in the same manner through the Universities telecom conduits and vaults.

The foundation of the campus telecom infrastructure is a grid of 4 inch conduits grouped in duct banks and routed between precast concrete underground vaults, building distribution facilities and main distribution centers on the Mission Bay Campus. The conduits utilized are manufactured of fiberglass reinforced epoxy, FRE. FRE conduit can withstand the soil settlement found in Mission Bay area better than PVC. At least two thirds of the conduits are lined with HDPE innerducts to support multiple placements of fiber optic cable sheaths over the years of building construction on the campus. The conduits and vaults form a basic grid with 16th street, Gene Friend Way (14th) and Nelson rising Lane (13th) forming the east west routes while Owens Street, 5th Street, and an area between 4th and 3rd streets provide the north south routes. Each campus building is interconnected to this grid through two physically diverse connections separated by a minimum of 90 degrees and in many cases 180 degrees. The Phase 1 campus utility project implemented this grid from Owens to 3rd Street and 16th to Gene Friend Way. Phase 2 extended the grid northeast to block 17 and the corner of Mission Bay Blvd South and 3rds streets. In 2012 the grid was extended northwest to the corner of 5th street and Nelson Rising Lane. The areas of the campus north of Gene Friend Way and west of 5th street, blocks 15 and 18, will be supported by existing TMH-D8 and TMH-E8 in the intersection of 5th Street and

Nelson Rising Lane as well as existing TMH-H4 and H7 in Gene Friend Way north of the Rutter Center. Blocks 15 and 18 do not have telecommunications conduit or vaults and will require them to support buildings on these blocks. Block 16 has six conduit stubs from the existing vaults in Nelson Rising Lane but will require some additional connections to TMH-D12 in Nelson Rising Lane North of Rock Hall. Existing TMH-H16 and L16 will be utilized to support a building on lot 23A. Existing TMH-L17 and existing conduit stubs on lot 25A will be utilized to support a new building on lot 25B.

Single mode fiber optic cabling has been utilized on the Mission Bay campus to provide CAN connectivity between the MDCs and the BDFs. In the past 10 years buildings have been provided with Campus Area Network (CAN) service using multiple 1 Gigabit Ethernet circuits or groupings of 10 Gigabit Ethernet circuits depending on the availability of technology, the project budget and the projected network load for the building. UCSF ITS will transition primarily to 10 Gigabit Ethernet as it replaces network switches that are coming off of manufacturer support in 2013. When the first campus building outside of Genentech Hall was connected to MDC1, 10 Gigabit Ethernet was not yet available. Multiple Gigabit Ethernet circuits were used. One 10 Gigabit circuit requires (2) strands of single mode fiber. (10) Gigabit circuits require (20) strands of single mode fiber. The single mode glass that has been utilized is manufactured by Corning and is referred to as SMF28e and SMF28e+. This glass will support 10 Gigabit Ethernet in standard transmit and receive format using two fibers and it will support Wave Division Multiplexing (WDM) that will support 10 Gigabit Ethernet on a single strand of fiber using two wave lengths to support transmit and receive. This single mode will also support bandwidths greater than 10 Gigabit Ethernet as they become economically feasible to utilize.

The design of the two existing MDCs did take into consideration a complete campus build-out of all buildings shown on the campus master plan including new buildings in Blocks 15, 16, 18, 23A and 25. The existing fiber frame in MDC2 will require no additional components. The existing fiber distribution frame in MDC1 can support four additional buildings before it will require additional splice and termination shelves.

The standard fiber optic strand count to each campus building is 36 strands primary to MDC1 and 36 strands secondary to MDC2. These fiber optic strands support the campus data network in addition to a sub group of these strands being dedicated to the Parking Services network and the Physical Plant networks.

The UCSF Mission Bay Campus as of January 2013 utilizes AT&T Centrex for telephone service in all campus buildings except the Neuroscience building on block 19A. AT&T Centrex is supported by AT&T hardware located in the MPOE area of MDC1 and MDC2. Two existing 1800 pair copper feeder cables extend from MDC1 to Cross Box CB-H9 on Gene Friend Way south of 19A and on Nelson Rising Lane North of Campus Housing. One existing 1800 pair feeder extends from MDC2 to CB-D9 on the corner of 5th Street and Nelson Rising Lane. New campus buildings on blocks 16, 18, 23A and 25B will utilize VoIP to support telephone services instead of AT&T Centrex. Block 15 campus housing will require a copper cable to support AT&T phone service to the residential units.

The VoIP system will be supported on the campus fiber optic cabling over the campus network. Some Telephone Services such as services to life safety devices will be supported over the copper telephone cabling. Blocks 15, 16 and 18 will be supported from the existing cross box CB-D9. New distribution copper will be required between the new building BDFs and CB-D9 at the corner of 5th Street and Nelson Rising Lane. Block 23A will be connected to existing Cross Box CB-H9 on Gene Friend Way at the south side of Neuroscience. New Buildings on Block 25 will be connected to existing CB-E16 on Nelson Rising Lane north of Block 20 campus housing.

Twenty-four gauge outside plant copper cabling is shown on Exhibit 6, Telecommunications Exhibit, to provide telephone service between the MPOEs and the BDFs. Large count 1800 pair and 1200 pair feeder cables are shown on the drawings routing from the MPOEs to above-ground cross-connection boxes. Distribution cables are routed between the cross-connection boxes and the BDFs. The cross-connection boxes maximize utilization of distribution and feeder cables by allowing the telephone circuits to be redirected to buildings depending on usage density.

The backbone system on the Campus is well set. Each future Campus Building must have two physically separate telecom conduit entrances, as depicted in Exhibit 6, Telecommunications Exhibit, that build off the Campus backbone.

Electrical

Mission Bay obtains electrical power from two substations; 1) The Mission Substation at Folsom and Fremont and 2) The Potrero Substation at Illinois and 22nd St. Without considering construction of the CUP, PG&E has or soon will have sufficient infrastructure, (i.e., conduits and substructures), in Mission Bay Blvd. South, Owens St. 16th St and 3rd St. to supply the projected electric loads for the future development buildings. Conduit is of sufficient size and it is PG&E's obligation to provide the cables required for service to the buildings.

If a CUP is constructed, based on the loads on the CUP Reports provided to us for review by the University and our team's experience with PG&E, there is a high probability that PG&E will require additional conduit (2-6" conduits) from their main utility vault at the intersection of Seventh and Mission Bay Drive, in Mission Bay Drive, through the Circle, and in Mission Bay Blvd South to Block 16a for a standby feed. This will need to be determined by PG&E.

Please see Exhibit 7, Joint Trench Exhibit, for joint trench sections front the study area. The additional conduit that may be required by PG&E for the CUP is not shown on this Exhibit.

Natural Gas

Gas infrastructure in and around the campus include a PG&E 16" distribution main in 16th Street on the south side of the campus between 3rd and Owens Streets, an 8" line fed by the

16" line on the west side of 3rd from 16th to China Basin and a 6" line in 4th St. from 16th Street to Channel, and a 6" line in Owens from 16th Street to the Mission Bay Circle. The pressure within these gas mains is approximately 45 to 60 psi, depending on weather. The lines north of the campus all (or will soon) interconnect to provide fully adequate service to UCSF's total campus after complete build out without the construction of a CUP.

If a CUP is constructed, gas loads could range between 56,000 to 146,000 Standard Cubic Feet/Hr (SCFH) to Block 16a. There is insufficient capacity to serve the upper range of gas loading, thus it is probable that PG&E will require an extension from their Potrero Station near the intersection of Illinois and 22nds Street to serve a CUP with higher gas demands.

High Pressure Water

Although the University does not tap into the City's High Pressure water system, we have prepared Exhibit 9, High Pressure Water, to depict the location of the High Pressure Water System in relation to the Study Area.

ANTICIPATED INFRASTRUCTURE UPGRADES SUMMARY AND ANTICIPATED COST SCHEDULE

Below is a summary of findings for infrastructure to serve the additional entitlement desired by the University:

Table 9 – Summary of Findings

Utility	Findings	Potential Upgrades
Storm Drain	Stormwater runoff will not increase due to increased building square footage.	No upgrades required to existing infrastructure. Will require installation of new on-site piping to serve future development blocks.
Separated Sanitary Sewer	Increase flow rate from additional development does not exceed capacity of public infrastructure.	No upsizing required for public infrastructure. Private piping to be installed to serve future development blocks.
Sewer Pump Station on P15	Additional flow from the Campus does not exceed capacity of pump station, however the City may require additional capacity as a safety factor.	Potentially replace four existing NP-3171-435 25hp pumps with NP-3171-434 30hp pumps and replace four 70 amp breaker switches with 80 amp breakers.
Mariposa Pump Station	Future sanitary sewer flows are far less than the stormwater that will be diverted to the future SDPS in P23.	No upgrades required.

Fire Protection	The Campus Fire Protection Pipe System has capacity to provide required fire flow demand for new buildings, assuming 75% reduction factor for sprinklered buildings is allowed by the Fire Marshal.	No upgrades required to existing backbone. Will require the installation of new piping to serve future development blocks.
Domestic Water	The existing public water piping surrounding the study area has sufficient capacity to serve future buildings.	No upgrades required to existing infrastructure. Booster pumps may be required in buildings to increase water pressure, to be determined.
Reclaimed Water	Campus currently does not connect to the City's Reclaimed Water Pipe System.	MBDG to install piping in Merrimac and MBBS to serve Blocks 15 and 16.
Telecom/Data/Alarms	Campus has well planned Telecom system on-site.	No public improvements required. Will need to extend Campus ductbanks to serve future development blocks.
Electrical	PG&E has, or soon will install infrastructure surrounding the study area that will provide sufficient infrastructure to serve the development blocks minus the CUP.	No additional upgrades required except for CUP. Possible conduit and cable extension for the CUP from Seventh to Block 16a.
Natural Gas	PG&E has, or soon will install infrastructure surrounding the study area that will provide sufficient infrastructure to serve the development blocks minus the CUP.	No additional upgrades required except for CUP. Possible extension for the CUP from PG&E's Potrero Station near Illinois and 22nd Street.

Below is a table with anticipated costs for the potential upgrades to the public utilities. These costs are anticipated construction costs only and based on project planning and information available at the time the Cost Schedule was prepared. Possible additional electrical and gas infrastructure for the CUP is not included in this estimate.

Table 10 – Potential Public Utility Upgrades – Anticipated Construction Cost Schedule

Description	Quantity	Unit	Unit Cost	Total
SSPS on P15 Replace Flygt 3171-435 pumps with 3171-434 pumps	4	EA	$50,000	$200,000
Replace 70amp breaker switches with 80 amp breaker switches	4	EA	$2,500	$10,000

SENSITIVITY ANALYSIS

This section analyzes the effect on utility infrastructure for the University's preferred plan for entitlement increase combined with increased development planned in Mission Bay. The assumptions for increased development in Mission Bay used for the infrastructure analysis are consistent with the assumptions being used in the traffic analysis being prepared by Adavant Consulting. This sensitivity analysis was performed for only the utilities that the University's plan affects. Planned developments used in this analysis include:

Table 11 – Planned Developments

Block #	Residential	Retail	Office	Hotel	R&D	Large Retail
1	350	50,000		250		
2	315	10,000				
3W	147	13,333				
3E	116	7,222				
4W	192	13,000				
4E	112	3,889				
5	170	18,889				
6W	162					
6E	117	9,778				
7W	200	11,333				
7E	80					
8			250,000			
9	117					

Block #	Residential	Retail	Office	Hotel	R&D	Large Retail
9A	74					
10	329	13,333				
10A	99					
11	190					
12W	162					
12E	267					
13W	273					
13E	150	9,667				
26-1		13,333	205,952			
26-2					222,339	
26-3						
26A			312,656			
P22		15,152				
27		13,333	217,028			
28			308,189			
29		13,333	275,000			
30		13,333	275,000			
31		13,333	275,000			
32		13,333	275,000			
33		13,333	200,000			
34		9,000	239,444			
40		16,667	700,000			
41-43		9,444			809,003	
SWL 337						
A	304					25,000
B			230,000			25,000
C			260,000			20,000
D			50,000			7,500
E			140,000			10,000
F	353					12,400
G			175,000			17,500
H			243,000			12,000
I			185,000			12,000
J	185					10,000
K	103					10,000
Pier 48			212,500			

Results of our analyses are listed below:

Natural Gas

The pressure in the gas mains in Mission Bay range between 45 and 60 psi, depending on weather. Based on initial communication with PG&E, there appears to be sufficient capacity in the main lines to serve the development blocks. PG&E however reserves the right to re-analyze when actual loads are available. Their analysis does not include the possibility of elevated pressure requests.

Electrical

Based on initial communication with PG&E, there are a sufficient number and size of conduits to serve the development blocks. Wiring will need to be installed by PG&E to provide service to the development blocks, but the need for new conduits is not anticipated. Similar to gas, PG&E however reserves the right to re-analyze when actual loads are available.

Telecom/Data/Alarms

The University's proposed entitlement increase does not affect the communications infrastructure in Mission Bay, as the Campus has its own backbone communications network.

Storm Drain

This University's proposed entitlement increase does not affect the stormwater discharge volume anticipated for the Campus. Therefore, the entitlement increase does not affect the capability of adjacent development projects to discharge stormwater.

Separated Sanitary Sewer Pipeline Conveyance

Table 12 includes the sewer flows from development blocks that share sewer mains with the University. As shown in the table, the SWL337 block will discharge less wastewater than planned in the "Mission Bay Separated Sanitary Sewer Analysis".

Table 12 – Sewer Flows

Block #	Peak Sanitary Sewer Flow (gpm)	Peak Master Plan Flow (gpm)	Net Difference (gpm)
8	70	13	57
9	41	43	-2
9A	26	27	-1
10	119	85	34

Block #	Peak Sanitary Sewer Flow (gpm)	Peak Master Plan Flow (gpm)	Net Difference (gpm)
10A	35	44	-9
12W+12E	152	143	9
13W+13E	152	123	29
26-1,2,3	141	91	50
26A	88	13	75
P22	3	3	0
27	63	91	-28
28	87	65	22
29	80	117	-37
30	80	84	-4
41-43	295	326	-31
SWL 337			
A	112		
B	69		
C	77		
D	15		
E	41		
F	127		
G	52		
H	70		
I	54		
J	67		
K	38		
	724	1103	-379
Pier 48	60	118	-58

The net differences, applied to our pipeline capacity calculations show that the existing pipelines are adequate to convey wastewater from the University as well as programmed development projects that share sanitary sewer pipelines with the University.

Sanitary Sewer Pump Station on P15

As previously reported the pump station can be upgraded to have a peak pumping capacity of 7.34 MGD and that the calculated increased flow from the University combined with flows defined in the Mission Bay Separated Sanitary Sewer Analysis is approximately 6.63 MGD. The net difference in peak flow from non-UCSF development blocks that drains to this pump station is negligible. The decreased peak discharge from SWL337 is approximately equal to

the increased discharge from other development blocks in Mission Bay that drains to this pump station. Therefore the proposed pump station upgrade will handle UCSF's entitlement increase and anticipated flows from blocks tributary to this pump station.

Domestic Water

GHD (formerly Winzler & Kelly), ran the Mission Bay Water Model with the proposed UCSF increased entitlement and the proposed developments throughout Mission Bay. The results show that the planned water system is sufficient to serve the University's increased entitlement and the proposed development blocks in Mission Bay, provided a water main is installed through the SWL 337 Block, connecting the water main in Third Street to water main in Terry Francois. The model and calculations can be found in the Appendix F – GHD Water System Model.

Thank you for the opportunity to present this information to you. If you have any questions, please feel free to contact me.

Sincerely,
FREYER & LAURETA, INC.

Richard J. Laureta, P.E.
President

APPENDIX A – UTILITY EXHIBITS

CHINA BASIN CHANNEL
CHANNEL
24", 718 LF, S=0.003
LONG BRIDGE STREET
12", 393 LF, S=0.002
18", 558 LF, S=0.002
42" - 203 LF, S=0.001
42", 215 LF, S=0.0185
2X33", 8 LF, S=0.018
48", 253 LF, S=0.002
48", 121 LF, S=0.0031
48", 121 LF, S=0.0019
54"
42", 27 LF, S=0.1581
48", 48 LF, S=0.0035
48", 73 LF, S=0.0025
42", 29 LF, S=0.0051
TO SDPS NO. 62
36", 72 LF, S=0.0032
36", 119 LF, S=0.0019
36", 117 LF, S=0.0016
36", 41 LF, S=0.002
PIER 54
24", 99 LF, S=0.006
24", 97 LF, S=0.002
12", 49 LF, S=0.002
18", 418 LF, S=0.002
12W
11
MERRIMAC
21", 332 LF, S=0.002
6W
6E
FOURTH STREET
MISSION BAY BLVD NORTH
24", 402 LF, S=0.0023
36", 330 LF, S=0.0036
7W
7E
THIRD STREET
10
10a
P18
18", 381 LF, S=0.002
18", 270 LF, S=0.0027
SDPS NO. 4
30", 144 LF, S=0.002
48", 581 LF, S=0.002
18", 115 LF, S=0.005
P10
P11
P11a
P12
P13
27", 153 LF, S=0.002
30", 154 LF, S=0.0047
P15
P16
P17
21", 94 LF, S=0.0056
21", 94 LF, S=0.0039
24", 108 LF, S=0.003
24", 148 LF, S=0.015
24", 140 LF, S=0.0162
24", 49 LF, S=0.003
24", 298 LF, S=0.002
24", 95 LF, S=0.0159
24", 187 LF, S=0.0013
30", 213 LF, S=0.0013
30", 51 LF, S=0.0045
18" SD
18" SD
15"
36", 69 LF, S=0.0265
36", 52 LF, S=0.0057
MISSION BAY DRIVE
MISSION BAY CIRCLE
48", 668 LF, S=0.002
18", 429 LF, S=0.0023
27", 30 LF, S=0.01
30", 18 LF, S=0.031
MISSION BAY BLVD SOUTH
19"X30", 27 LF
42", 134 LF, S=0.0012
42", 109 LF, S=0.0019
33", 116 LF, S=0.0045
SMITH CARDIO-VASCULAR RESEARCH
17
HELEN DILLER CANCER RESEARCH
NELSON RISING LANE
26
26a
BRIDGEVIEW WAY
PIERPOINT LANE
20", 332 LF, S=.002
36", 250 LF, S=0.0016
P7
14
SIXTH STREET
FIFTH STREET
15
16
RESEARCH
DRAIN
18", 592 LF, S=0.002
18", 492 LF, S=0.002
24", 108 LF, 30", 149 LF, S=0.01
27", 349 LF, S=0.0041
36", 267 LF, S=0.004
24", 65 LF, S=0.002
18", 76 LF, S=0.005
15", 181 LF, S=0.005
33", 112 LF, S=0.004
43
18
SPORTS FIELD
SANDLER NEUROSCIENCES
19
ARTHUR AND TONI REMBE ROCK HALL
20
12", 15 LF, S=0.0216
MISSION BAY HOUSING AT UCSF
18"
10", 63 LF, S=0.0097
36", 109 LF, S=0.0031
P21
SDPS NO. 1
24", 390 LF, S=0.01
24", 338 LF, S=0.003
GENE FRIEND WAY
THIRD STREET
27
28
36", 77 LF, S=0.0024
42", 20 LF, S=0.0169
42", 116 LF, S=0.009
42", 103 LF, S=0.0075
24", 81 LF, S=0.004
12", 150 LF, S=0.007
24"
30", 186 LF, S=0.0035
33", 142 LF, S=0.0033
33", 92 LF, S=0.0044
33", 311 LF, S=0.0047
24", 36 LF, S=0.01
OWENS STREET
42
COMMUNITY CENTER GARAGE
WILLIAM J. RUTTER CENTER
21
22
KORET QUAD
CAMPUS WAY
FOURTH STREET
18", 311 LF, S=0.004
12", 208 LF, S=0.0107
24", 345 LF, S=0.004
SOUTH STREET
29
30
BRIDGEVIEW WAY
24", 125 LF, S=0.005
18", 198 LF, S=0.005
P22
TERRY A. FRANCOIS BLVD
23A
THIRD STREET GARAGE
30", 515 LF, S=0.0043
24", 420 LF, S=0.0043
STUDY AREA
41
18", 181 LF, S=0.01
GENENTECH HALL
24
BYERS HALL
ACADEMIC OFFICE BUILDING
25B
DRAIN
12", 91 LF, S=0.005
18", 210 LF, S=0.0206
18", 91 LF, S=0.005
16TH STREET
31
32
18", 217 LF, S=0.005
24", 83 LF, S=0.11
18", 83 LF, S=0.02
24", 46 LF, S=0.02
42" - 51 LF, S=0.0016
48", 178 LF, S=0.004
36", 55 LF, S=0.011
36", 38 LF, S=0.011
48", 518 LF, S=.004
24", 156 LF, S=0.005
42", 505 LF, S=0.0016
30", 82 LF, S=0.005
40
39
30", 151 LF, S=0.005
24", 331 LF, S=0.005
44 LF, S=0.005
48", 128 LF, S=0.001
48", 101 LF, S=0.005
36
48", 110 LF, S=0.045
42", 162 LF, S=0.002
X3
12", 71 LF, S=0.015
S=0.005
S=0.0087
24", 85 LF, S=0.07
33
X4
36", 431 LF, S=0.003
54"
SDPS NO. 5
36", 141 LF, S=0.061
36", 56 LF, S=0.0017

LEGEND

- CONSTRUCTED SD
- FUTURE SD
- MANHOLE
- UNPROGRAMMED BLOCK
- STUDY AREA
- EXISTING BUILDING
- FUTURE BUILDING

NORTH

SCALE 200'

EXHIBIT 1
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
STORM DRAINAGE EXHIBIT

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Node #	Node #	Slope	Peak Flow Q=(GPM)	Existing Pipe Dia (in)	Depth of Flow (in)	Pipe Capacity Q=(GPM)	Percent Full
1	2	0.0040	143	10	3 1/4	614	32%
8	9	0.0030	394	12	5 5/8	875	47%
9	2	0.0030	429	15	5 1/4	1588	35%
2	3	0.0030	729	18	6 5/8	2580	37%
3	4	0.0030	815	21	6 1/2	3895	31%
6	7	0.0075	146	8	3	475	38%
7	4	0.0075	282	10	4	843	40%
4	5	0.0013	1836	24	12	3662	50%
10	11	0.0080	119	8	2 5/8	493	41%
11	12	0.0028	414	15	5 1/4	1535	33%
12	5	0.0020	2225	30	10 5/8	8231	35%
5	SSPS	0.0024	4120	33	13 1/2	11,629	36%

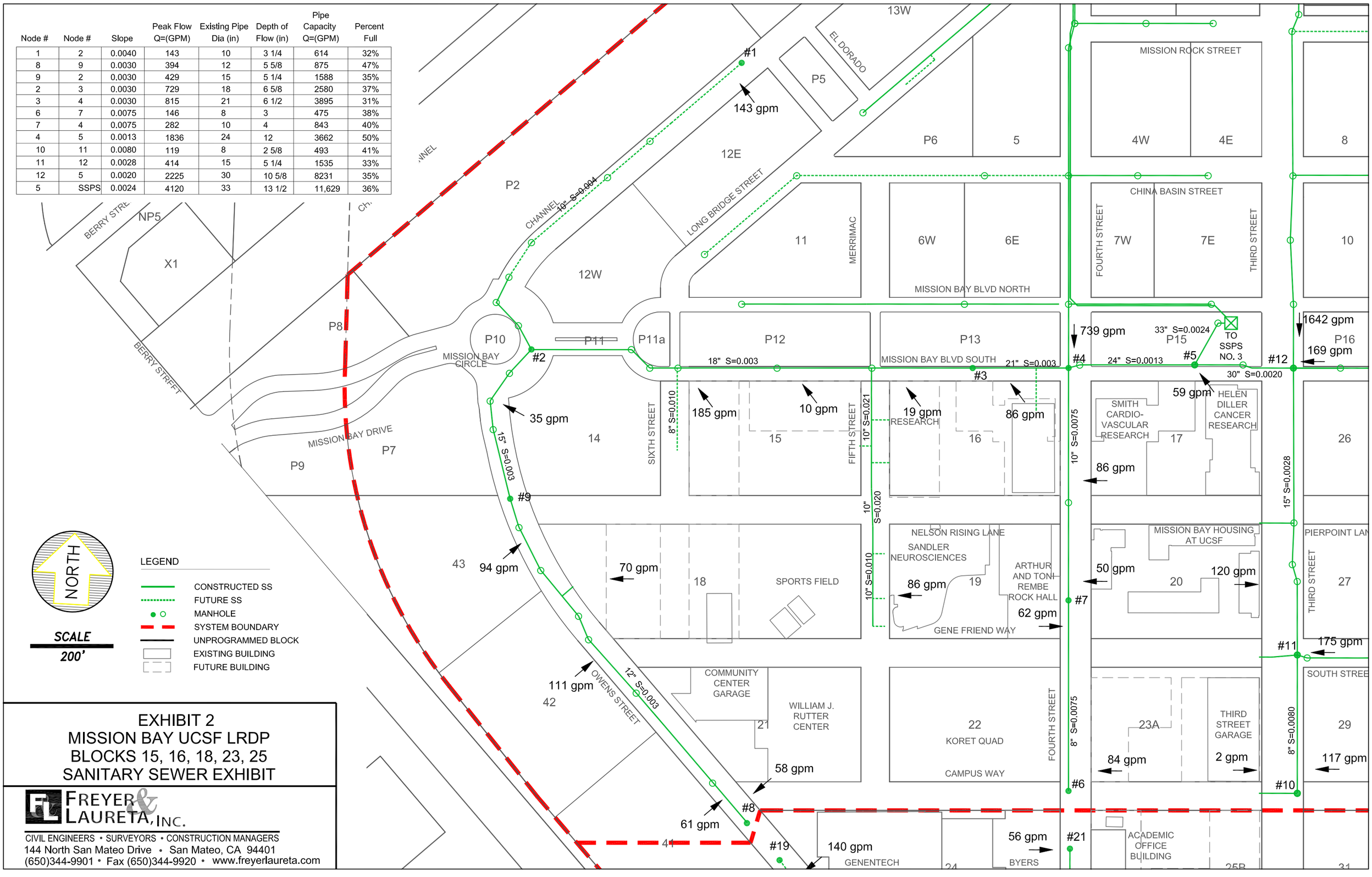

EXHIBIT 2
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
SANITARY SEWER EXHIBIT

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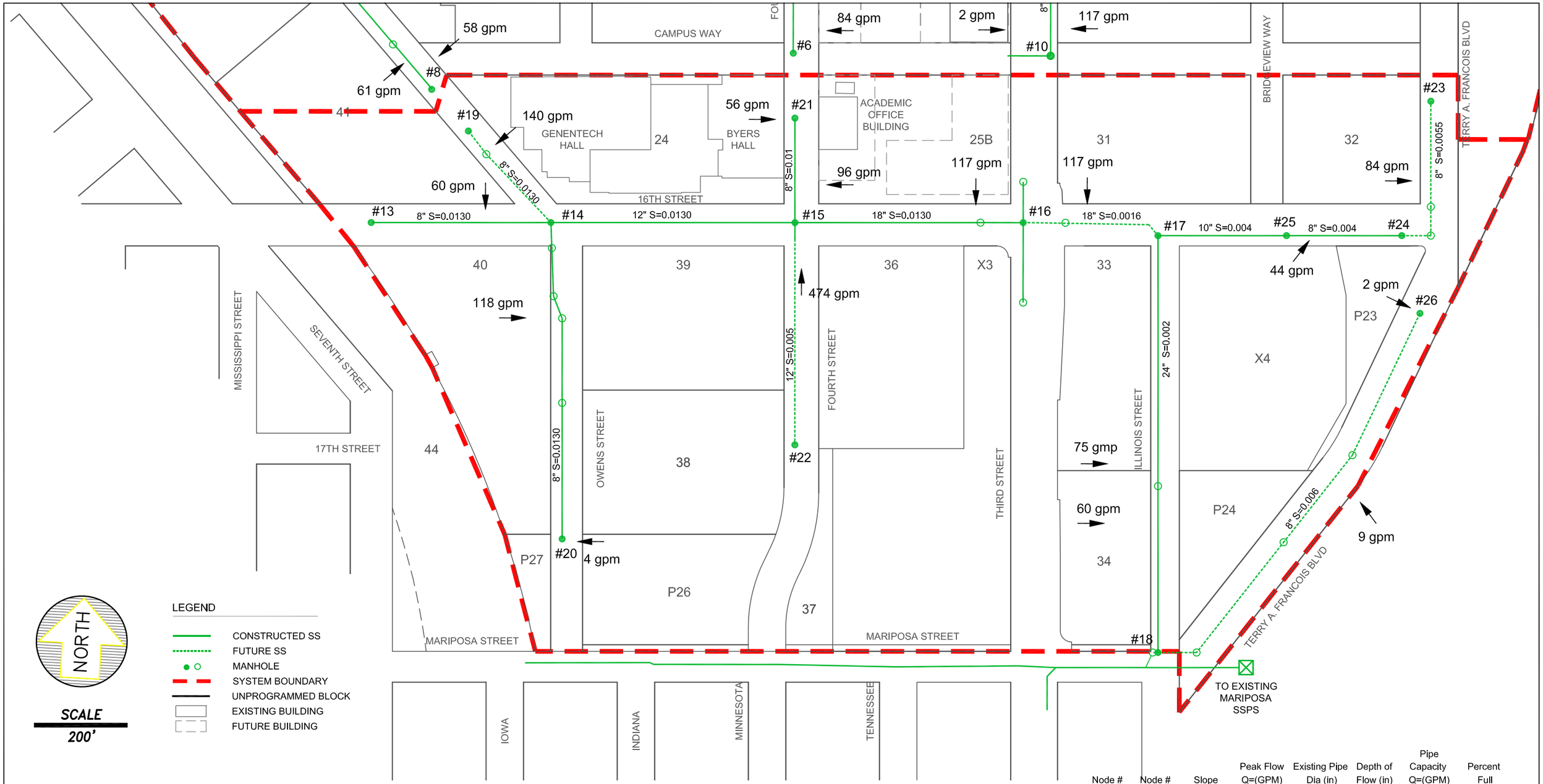

EXHIBIT 3
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
SANITARY SEWER EXHIBIT

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Node #	Node #	Slope	Peak Flow Q=(GPM)	Existing Pipe Dia (in)	Depth of Flow (in)	Pipe Capacity Q=(GPM)	Percent Full
13	14	0.0130	143	8	1 5/8	628	21%
14	15	0.0130	322	12	3 3/8	1,822	28%
15	16	0.0130	1065	18	5 3/8	5,376	30%
16	17	0.0016	1182	18	10 3/8	1,885	57%
17	18	0.0020	1445	24	9 3/8	4,542	39%
19	14	0.0130	140	8	2 5/8	628	33%
20	14	0.0130	122	8	2 3/8	628	30%
21	15	0.0100	152	8	2 7/8	547	36%
22	15	0.0050	474	12	5 3/8	1,131	45%
23	24	0.0055	84	8	2 1/2	408	32%
24	25	0.0040	128	8	3 3/8	345	42%
25	17	0.0040	128	10	3 1/8	614	31%
26	18	0.0080	11	8	7/8	493	11%

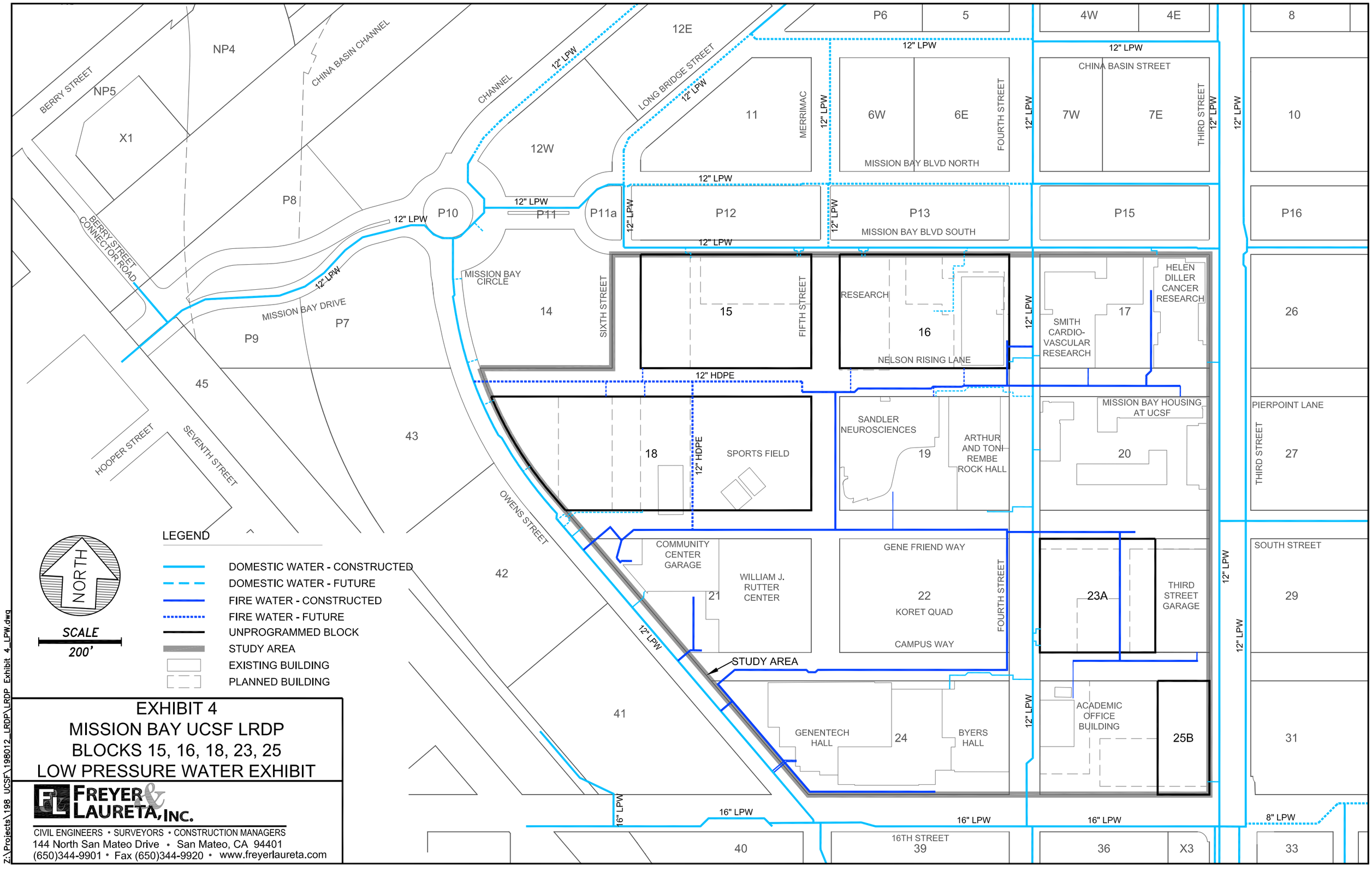

EXHIBIT 4
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
LOW PRESSURE WATER EXHIBIT

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NP4
NP5
X1
P8
P7
P9
45
43
42
41
40
39
36
X3
33
14
15
16
17
18
19
20
21
22
23A
24
25B
26
27
29
31
10
11
12E
12W
P6
5
4W
4E
8
7W
7E
6W
6E
P10
P11
P11a
P12
P13
P15
P16
BERRY STREET
CHINA BASIN CHANNEL
CHANNEL
LONG BRIDGE STREET
MERRIMAC
FOURTH STREET
THIRD STREET
MISSION BAY CIRCLE
BERRY STREET CONNECTOR ROAD
MISSION BAY DRIVE
SIXTH STREET
FIFTH STREET
HOOPER STREET
SEVENTH STREET
OWENS STREET
16TH STREET
CHINA BASIN STREET
MISSION BAY BLVD NORTH
MISSION BAY BLVD SOUTH
NELSON RISING LANE
GENE FRIEND WAY
CAMPUS WAY
PIERPOINT LANE
SOUTH STREET
8" RCW
CITY RCW TO SERVE BLOCKS 15 AND 16
STUDY AREA
RESEARCH
SMITH CARDIO-VASCULAR RESEARCH
HELEN DILLER CANCER RESEARCH
MISSION BAY HOUSING AT UCSF
SANDLER NEUROSCIENCES
ARTHUR AND TONI REMBE ROCK HALL
SPORTS FIELD
COMMUNITY CENTER GARAGE
WILLIAM J. RUTTER CENTER
KORET QUAD
THIRD STREET GARAGE
GENENTECH HALL
BYERS HALL
ACADEMIC OFFICE BUILDING

NORTH

SCALE
200'

LEGEND

- CONSTRUCTED RCW
- FUTURE RCW
- UNPROGRAMMED BLOCK
- STUDY AREA
- EXISTING BUILDING
- FUTURE BUILDING

EXHIBIT 5
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
RECLAIMED WATER EXHIBIT

FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
144 North San Mateo Drive • San Mateo, CA 94401
(650)344-9901 • Fax (650)344-9920 • www.freyerlaureta.com

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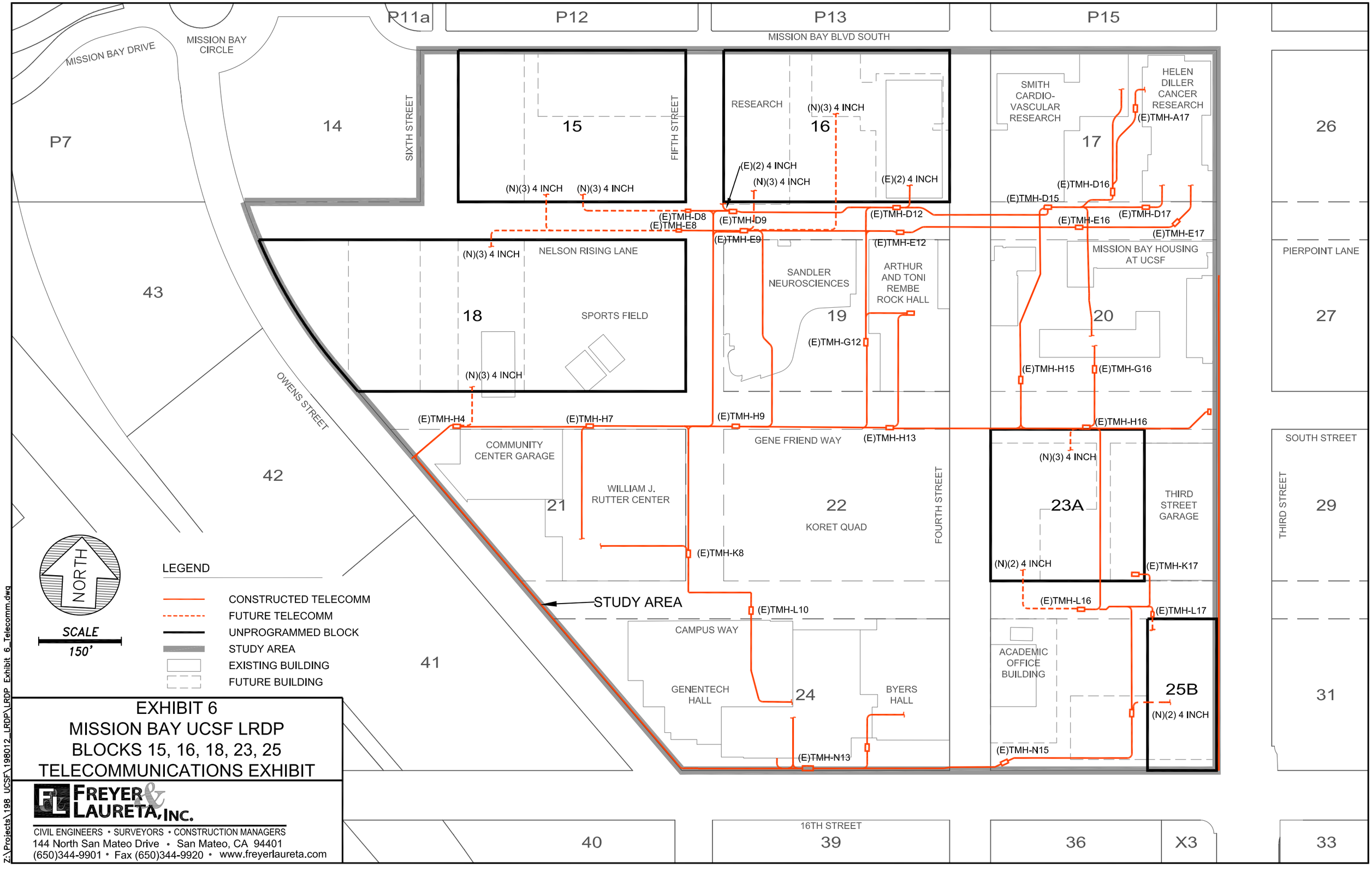

EXHIBIT 6
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
TELECOMMUNICATIONS EXHIBIT

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23A
25B
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X3
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P6
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4W
4E
8
7W
7E
10
P10
P11
P11a
P12
P13
P15
P16
BERRY STREET
CHINA BASIN CHANNEL
CHANNEL
LONG BRIDGE STREET
MERRIMAC
FOURTH STREET
THIRD STREET
CHINA BASIN STREET
MISSION BAY BLVD NORTH
MISSION BAY BLVD SOUTH
MISSION BAY CIRCLE
BERRY STREET CONNECTOR ROAD
MISSION BAY DRIVE
SIXTH STREET
FIFTH STREET
NELSON RISING LANE
RESEARCH
SMITH CARDIO-VASCULAR RESEARCH
HELEN DILLER CANCER RESEARCH
MISSION BAY HOUSING AT UCSF
PIERPOINT LANE
SANDLER NEUROSCIENCES
ARTHUR AND TONI REMBE ROCK HALL
SPORTS FIELD
GENE FRIEND WAY
COMMUNITY CENTER GARAGE
WILLIAM J. RUTTER CENTER
KORET QUAD
THIRD STREET GARAGE
SOUTH STREET
CAMPUS WAY
STUDY AREA
GENENTECH HALL
BYERS HALL
ACADEMIC OFFICE BUILDING
16TH STREET
HOOPER STREET
SEVENTH STREET
OWENS STREET

NORTH

SCALE
200'

LEGEND

- CONSTRUCTED JT
- FUTURE JT
- UNPROGRAMMED BLOCK
- STUDY AREA
- EXISTING BUILDING
- FUTURE BUILDING

EXHIBIT 7
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
JOINT TRENCH EXHIBIT

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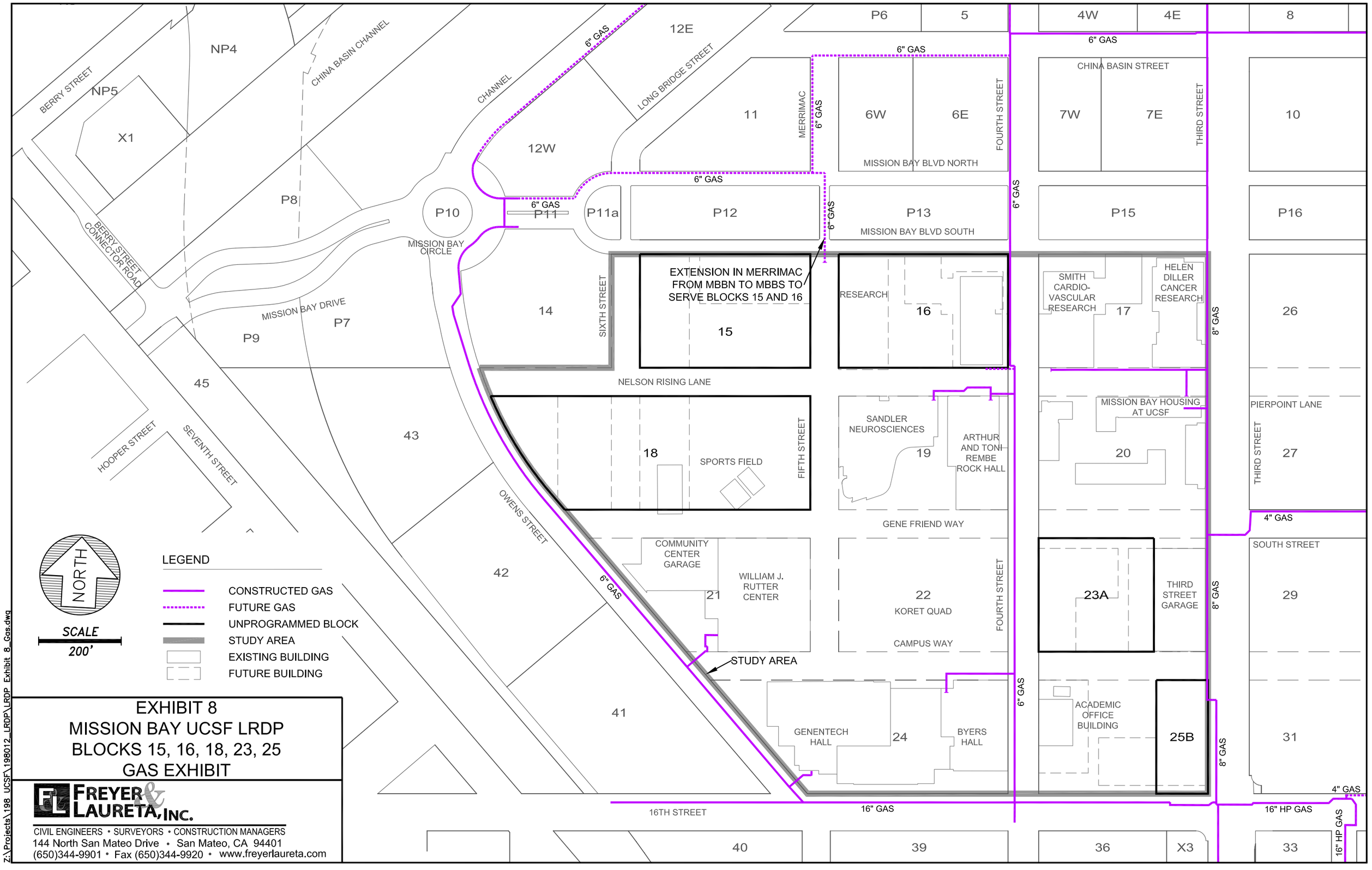

EXHIBIT 8
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
GAS EXHIBIT

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NP4
NP5
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25B
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36
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X3
P6
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4W
4E
8
10
P16
P10
P11
P11a
P12
P13
P15
BERRY STREET
CHINA BASIN CHANNEL
CHANNEL
LONG BRIDGE STREET
MERRIMAC
FOURTH STREET
THIRD STREET
CHINA BASIN STREET
MISSION BAY BLVD NORTH
MISSION BAY BLVD SOUTH
MISSION BAY CIRCLE
BERRY STREET CONNECTOR ROAD
MISSION BAY DRIVE
SIXTH STREET
FIFTH STREET
NELSON RISING LANE
GENE FRIEND WAY
CAMPUS WAY
PIERPOINT LANE
SOUTH STREET
16TH STREET
HOOPER STREET
SEVENTH STREET
OWENS STREET
12" HPW
SMITH CARDIO-VASCULAR RESEARCH
HELEN DILLER CANCER RESEARCH
RESEARCH
MISSION BAY HOUSING AT UCSF
SANDLER NEUROSCIENCES
ARTHUR AND TONI REMBE ROCK HALL
SPORTS FIELD
COMMUNITY CENTER GARAGE
WILLIAM J. RUTTER CENTER
KORET QUAD
THIRD STREET GARAGE
ACADEMIC OFFICE BUILDING
GENENTECH HALL
BYERS HALL
STUDY AREA

NORTH

SCALE
200'

LEGEND

- CONSTRUCTED HPW
- FUTURE HPW
- UNPROGRAMMED BLOCK
- STUDY AREA
- EXISTING BUILDING
- FUTURE BUILDING

EXHIBIT 9
MISSION BAY UCSF LRDP
BLOCKS 15, 16, 18, 23, 25
HIGH PRESSURE WATER EXHIBIT

FREYER & LAURETA, INC.
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APPENDIX B – MISSION BAY SANITARY SEWER PUMP STATION, ENGINEER'S EVALUATION OF PUMP PERFORMANCE

WINZLER & KELLY

RECEIVED
NOV 19 2010
TMI

Ref: Project No. 0334005041

November 17, 2010

Sent via E-mail and US Mail

Mr. J.T. Matarangas
Mission Bay Development Group
255 Channel St
San Francisco, CA 94158

Subject: Mission Bay Sanitary Sewer Pump Station
505 Mission Bay Boulevard North
Engineer's Evaluation of Pump Performance

Dear Mr. Matarangas:

Reference is made to: (i) the Mission Bay Consulting Agreement dated January 1, 2004 and Change Order W&K 200609-05 dated March 16, 2009, between Mission Bay Development Group ("Company") and Winzler & Kelly ("Engineer"). Per the "South of Channel Separated Sanitary Sewer Report" by Olivia Chen Consultants dated December 26, 2000 and revised August 13, 2001, and per the updated sanitary sewer analysis by Winzler & Kelly dated July 2005, the projected sanitary sewer inflow to the Mission Bay Sanitary Sewer Pump Station (MB SSPS) is 2.1 million gallons per day (MGD) average dry weather flow and 6.4 MGD peak wet weather flow.

Per the construction documents prepared by Winzler & Kelly titled "Mission Bay Sanitary Sewer Pump Station, 505 Mission Bay Boulevard North" dated November 11, 2008, the pump station contains four submersible pumps. In this configuration, three pumps operate during the peak design flow and one pump is available as standby. In-situ pump performance testing completed by the Contractor dated May 12, 2010 indicate that the approximate discharge rate for three pumps operating together is 4686.8 GPM or 6.7 MGD.

To the best of my knowledge, information and belief, regarding the improvements contemplated by the Plans and Specifications (the "Improvements") for the "Mission Bay Sanitary Sewer Pump Station, 505 Mission Bay Boulevard North", I hereby state the following:

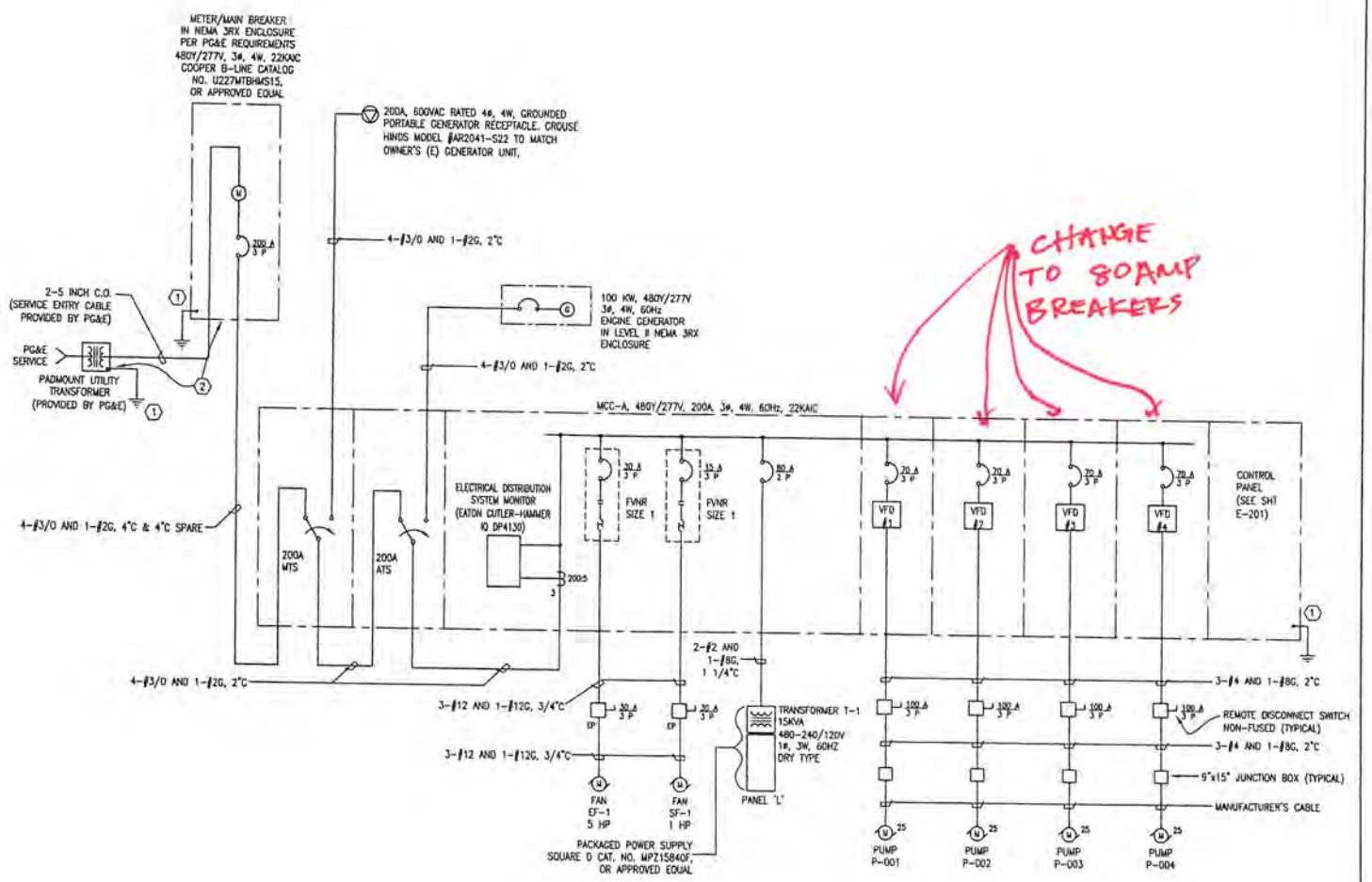
> Based on the pump test data provided to me from the in-situ pumping tests performed on May 12, 2010, by JMB Construction with TMI as witness, the pumps perform as intended.

Sincerely,
WINZLER & KELLY

Anthony A. Petroccitto, P.E.
Managing Principal

REGISTERED PROFESSIONAL ENGINEER
ANTHONY PETROCCITTO
NO. C044138
EXP 6/30/11
CIVIL
STATE OF CALIFORNIA

417 Montgomery St., Suite 700, San Francisco, CA 94104-1133
tel 415.283.4970 fax 415.283.4980
www.w-and-k.com



1 ELECTRICAL SINGLE LINE DIAGRAM
N.T.S.

KEY NOTES:

1. CONNECT ALL INDICATED GROUNDS TO UTILITY TRANSFORMER GROUND GRID. SEE ELECTRICAL PLAN.
2. COORDINATE NEW UTILITY SERVICE TRANSFORMER, SERVICE ENTRANCE METER AND SOCKET REQUIREMENTS WITH PACIFIC GAS AND ELECTRIC CO. (CONTACT MS. LORI CHEN AT 415 695-3470)

CATELLUS

WINZLER & KELLY

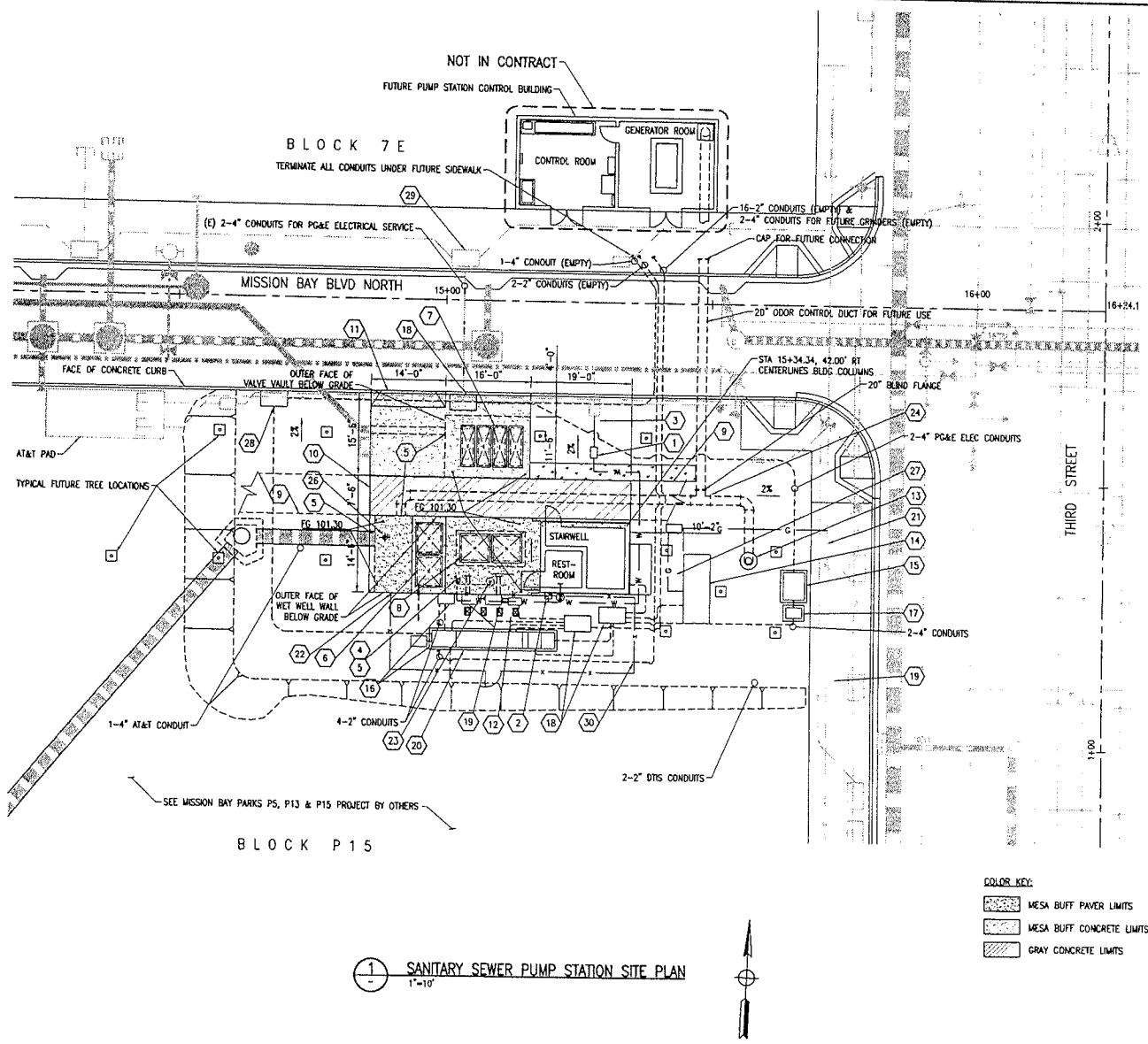
MISSION BAY PROJECT - SAN FRANCISCO, CA

MISSION BAY SANITARY SEWER PUMP STATION

ELECTRICAL SINGLE-LINE DIAGRAM

0334005041

FIGURE 5



COLOR KEY:

- MESA BUFF PAVER LIMITS
- MESA BUFF CONCRETE LIMITS
- GRAY CONCRETE LIMITS

1 SANITARY SEWER PUMP STATION SITE PLAN
1"=10'

1"=10' 10' 0' 10' 20'

KEYNOTES

1. BACKFLOW PREVENTER PER DETAIL 3/C-501.
2. 1 1/2" HOSE BIB IN LOCKABLE GROUND LEVEL BOX.
3. CONNECT NEW 2" WATER TO EXISTING TYPE II METER VAULT.
4. 1 1/2" HOSE BIB WITH EXTERIOR FLEXIBLE CONNECTION ON LANDING LEVEL. MOUNT ON SOUTH WALL AT 36" ABOVE GRATING. USE LINK SEAL AT PENETRATION OF WET WELL WALL.
5. FLEXIBLE COUPLING REQUIRED AT PENETRATION OF CONCRETE WALL INVERT ELEVATION = 94.70.
6. BAR RACK ACCESS COLORED CONCRETE HATCH COVERS (2 PLACES).
7. VALVE ACCESS COLORED CONCRETE HATCH COVERS (4 PLACES).
8. PUMP ACCESS COLORED CONCRETE HATCH COVERS (2 PLACES).
9. FUTURE CONCRETE SIDEWALK BY OTHERS.
10. CONCRETE SIDEWALK – GRAY CONCRETE SHALL BE PER MISSION BAY STANDARD CONCRETE COLORING. COLORED CONCRETE AREAS SHALL BE DAVIS COLORS, MESA BUFF INTEGRAL COLOR WITH LIGHT SANDBLAST FINISH. CONTRACTOR SHALL POUR ALL COLORED AREAS INCLUDING HATCH COVERS AT THE SAME TIME TO ENSURE COLOR CONSISTENCY. CONTRACTOR SHALL MANAGE THE CONCRETE POURS SUCH THAT STRUCTURAL CONCRETE (TOP SLAB OF VALVE VAULT) IS POURED CONCURRENTLY WITH ADJACENT FLATWORK SUCH THAT COLOR CONSISTENCY IS OBTAINED.
11. DEPRESSED CURB (BY OTHERS) AND RAMP CONSTRUCTED BY THIS PROJECT PER CCSF STANDARD B7, 171.
12. PUMP MOTOR LEAD ELECTRICAL CONNECTION PULL BOX AND COLORED CONCRETE COVER (4 PLACES). SEE DRAWING E-101.
13. 16" DIA. x 30' HIGH INTERIM ODOR CONTROL EXHAUST POLE. SEE DETAIL 7/S-303.
14. PAD MOUNTED 100KW, 125KVA EMERGENCY GENERATOR UNIT IN LEVEL II SOUND MITIGATING WEATHERPROOF ENCLOSURE (INTERIM LOCATION).
15. ABOVE GROUND, PAD MOUNTED TRANSFORMER. PAD PER PG&E STANDARD.
16. INTERIM LOCATION FOR MCC-A, TRANSFER SWITCH, BY-PASS ISOLATION TRANSFER SWITCH, CONTROL PANEL, AND PANEL 'L' ON CONCRETE PAD.
17. ABOVE GROUND METER/MAIN DISCONNECT MOUNTED ON CONCRETE PAD PER PG&E STANDARD.
18. PULL BOX – 3'x5'x4'-6", PRE-CAST CONCRETE WITH LOCKABLE CONCRETE COVER.
19. PULL BOX – 17"x30", PRE-CAST CONCRETE WITH LOCKABLE CONCRETE COVER.
20. PAD MOUNTED PEDESTAL AND PANEL FOR FOUR PUMP DISCONNECTS.
21. 2" GAS SERVICE POINT OF CONNECTION.
22. PROVIDE 2x6 PRESSURE TREATED WOOD HEADER BOARD TO PROTECT EDGES OF ALL CONCRETE FLATWORK.
23. EMERGENCY EYE WASH AND SHOWER ON LANDING LEVEL. SEE DETAIL 8/C-501.
24. CONNECTION FOR FUTURE ODOR CONTROL DUCT: RE-ROUTE FROM THE ODOR CONTROL EXHAUST POLE TO THE FUTURE PUMP STATION CONTROL BUILDING BY CAPPING TEE TO POLE, REMOVE TEE BLIND FLANGE, AND INSTALL MAKE-UP SPOOL PIECE TO DUCT RUNNING BENEATH MISSION BAY BLVD NORTH TO THE FUTURE CONTROL BUILDING.
25. BACKFILL AREA OUTSIDE OF FINISH CONCRETE WITH NATIVE FILL.
26. COLORED CONCRETE LID ON HEAD GATE STEM IN CHRISTY BOX.
27. GAS REGULATOR AND METER ON CONCRETE PAD PER PG&E STANDARD (INTERIM LOCATION).
28. AT&T POINT OF CONNECTION IN 3'X5'X4' AT&T SUB-SURFACE TRAFFIC RATED HINGED NON-SLIP COVER ENCLOSURE PER TECHERT PRECAST PRODUCTS OR EQUAL.
29. PG&E ELECTRICAL SERVICE POINT OF CONNECTION IN EXISTING PULL BOX.
30. CHAIN LINK CAGE AROUND ELECTRICAL EQUIPMENT, NO-CLIMB 3/4" SQUARE WITH BLACK VINYL COATING, WITH ONE PERSON LOCKABLE GATE.

CATELLUS
OWNER
FOCIL-BI LLC
PROJECT MANAGER
CONSTRUCTION MANAGER

WINZLER & KELLY
CONSULTING ENGINEERS
SAN FRANCISCO, CA 94103

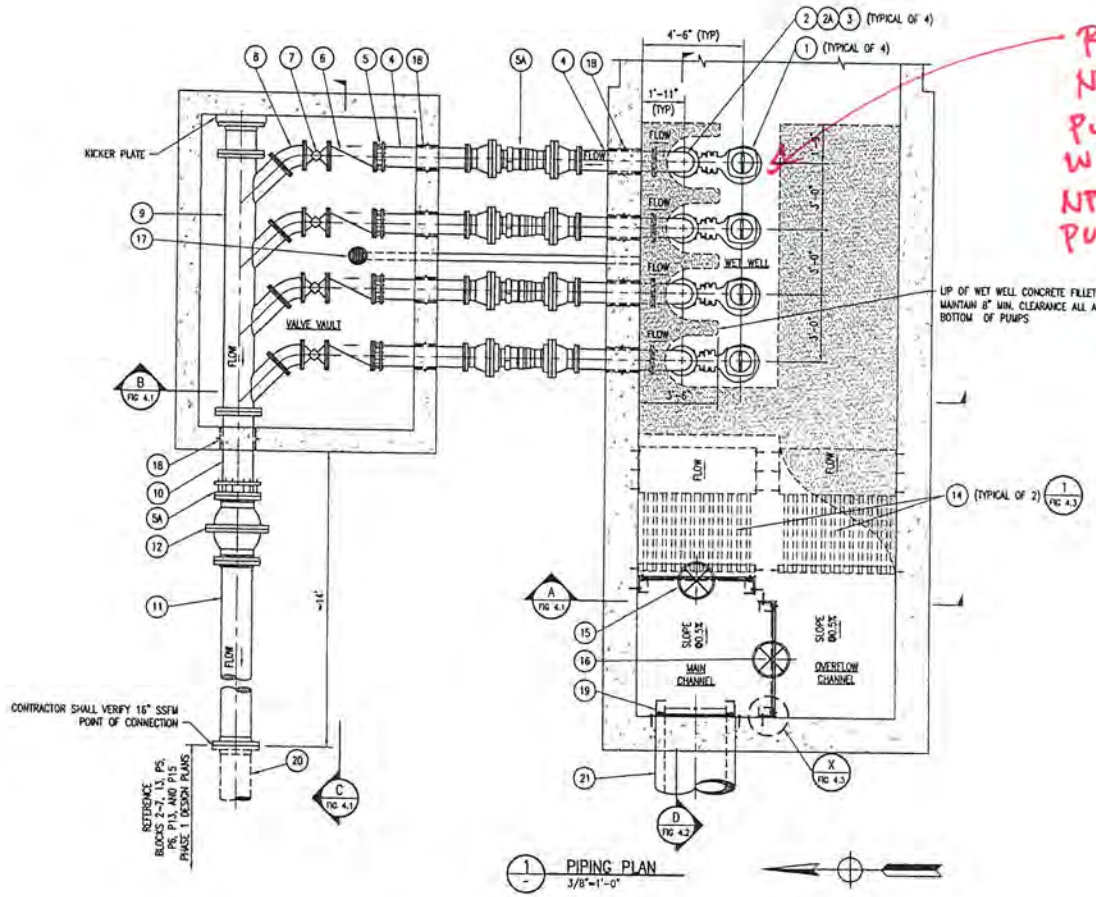
REVISIONS

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MISSION BAY PROJECT - SAN FRANCISCO, CA
MISSION BAY SANITARY SEWER PUMP STATION
CIVIL SITE PLAN

0334005041

FIGURE 1



REPLACE NP3171-435 PUMPS WITH NT3171-434 PUMPS (4)

ITEM NO.	DESCRIPTION
1	FLYGT NP-3171-435 SUBMERSIBLE PUMP WITH 6" DISCHARGE AND FLANGED 6" ELBOW UP
2	VERTICAL 10" DUCTILE IRON DISCHARGE PIPE
2A	6" TO 10" INCREASER
3	10"ø DUCTILE IRON ELBOW (TOP)
4	10"ø DUCTILE IRON SPOOL
5	10" FLANGED COUPLING ADAPTER
5A	10" EBAA IRON FLEX-TEND DOUBLE BALL FLEXIBLE EXPANSION JOINT
6	10" SWING CHECK VALVE (SPRING LOADED)
7	10"ø PLUG VALVE (FULL PORT)
8	10"ø DUCTILE IRON 45° FLANGED ELBOW
9	16"ø DISCHARGE HEADER (WELDED STEEL WITH HEAT FUSED EPOXY COATING)
10	16"ø DUCTILE IRON SPOOL, FL X PE
11	16"ø DUCTILE IRON SPOOL
12	16" FLEXIBLE BALL JOINT, EBAA FLEX-900
13	16" FLANGED COUPLING ADAPTER
14	BAR RACK
15	60"W x 48"H CHANNEL GATE - MANUALLY OPERATED (NORMALLY OPEN)
16	60"W x 42"H WEIR GATE - MANUALLY OPERATED
17	FLOOR DRAIN
18	EXTERIOR PIPE SLEEVE (LINK SEAL)
19	36"W x 36"H HEAD GATE - MANUALLY OPERATED (NORMALLY OPEN)
20	16"ø FORCE MAIN (BY OTHERS)
21	33" ø SANITARY SEWER INFLUENT MAIN

NOTES:

1. WRAP ALL DUCTILE IRON PIPING AND FITTINGS OUTSIDE OF WET WELL VAULT IN HDPE SHEETING. SEE SPECIFICATIONS.
2. GATES TO BE INSTALLED WITH BOLTED CONNECTION PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL BURIED FITTING TO HAVE STAINLESS STEEL HARDWARE.

3/8"=1'-0"

CATELLUS

WINZLER & KELLY

BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MISSION BAY PROJECT - SAN FRANCISCO, CA

MISSION BAY SANITARY SEWER PUMP STATION

PUMP STATION PIPING PLAN

0334005041

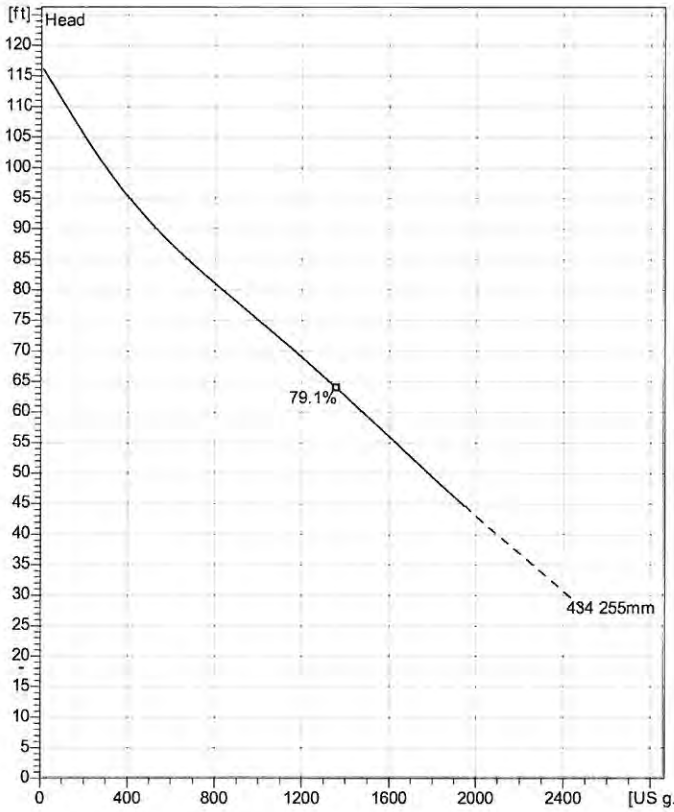
FIGURE 3

xylem
Let's Solve Water

NP 3171 MT 3~ 434

Technical specification

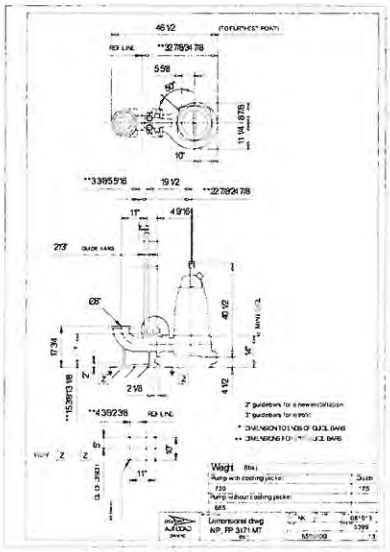
FLYGT



Curve according to: ISO 9906 grade 2 annex 1 or 2

Note: Picture might not correspond to the current configuration.

Installation: P - Semi permanent, Wet



General

Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Possible to be upgraded with Guide-pin® for even better clogging resistance. Modular based design with high adaptation grade.

Impeller

Impeller material	Grey cast iron
Outlet width	5 7/8 inch
Inlet diameter	200 mm
Impeller diameter	255 mm
Number of blades	2

Motor

Motor #	N3171.091 25-17-4AA-W 30hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	4
Phases	3~
Rated power	30 hp
Rated current	36 A
Starting current	231 A
Rated speed	1755 1/min
Power factor	
1/1 Load	0.87
3/4 Load	0.83
1/2 Load	0.73
Efficiency	
1/1 Load	89.0 %
3/4 Load	90.0 %
1/2 Load	90.5 %

Configuration

Project	Project ID	Created by	Created on	Last update
			2013-01-04	

xylem
Let's Solve Water

NP 3171 MT 3~ 434

FLYGT

Performance curve

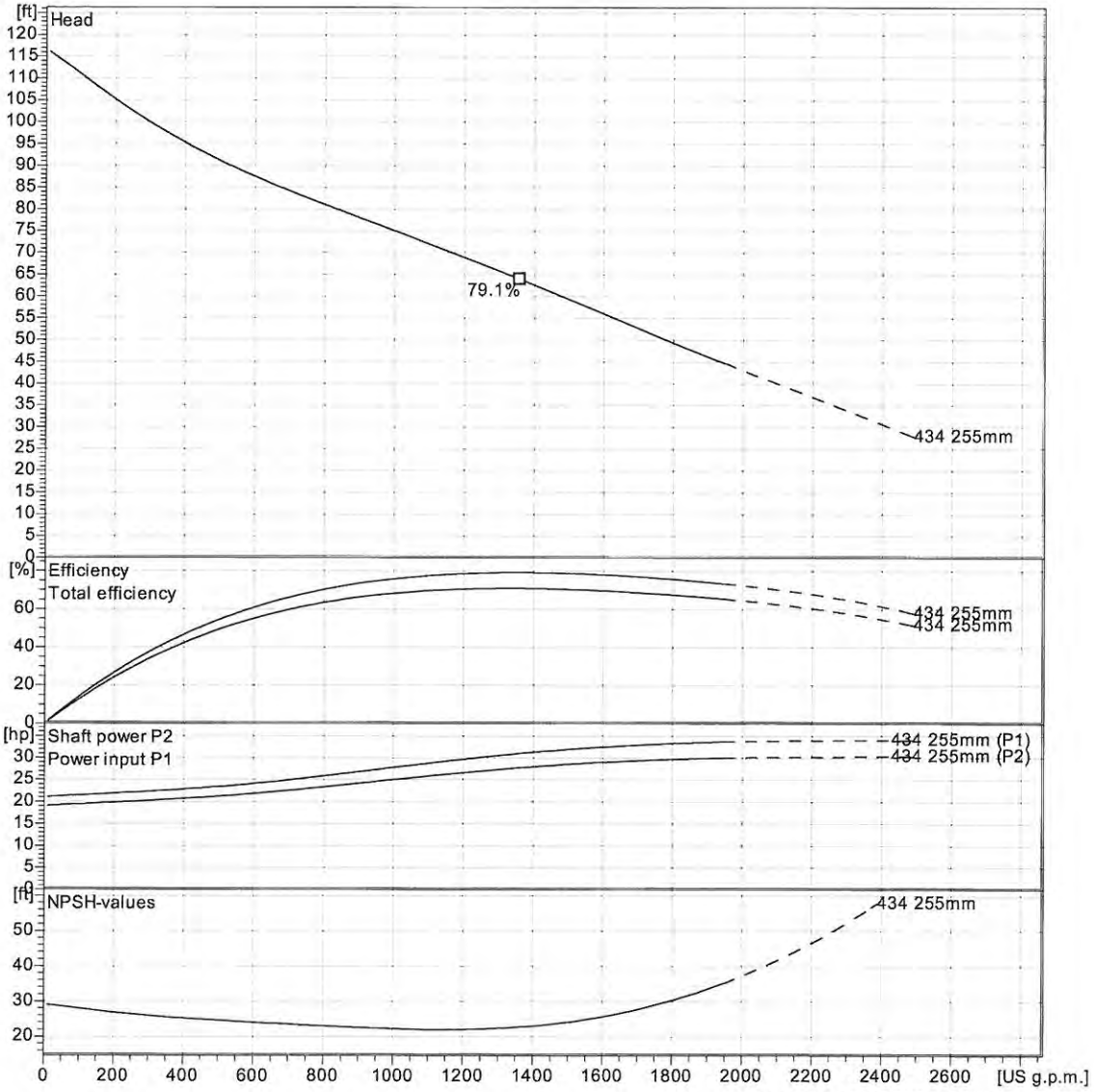
Pump

Outlet width	5 7/8 inch
Inlet diameter	200 mm
Impeller diameter	$10^{1}/_{16}$"
Number of blades	2

Motor

Motor #	N3171.091 25-17-4AA-W 30hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	4
Phases	3~
Rated power	30 hp
Rated current	36 A
Starting current	231 A
Rated speed	1755 1/min

Power factor	
1/1 Load	0.87
3/4 Load	0.83
1/2 Load	0.73
Efficiency	
1/1 Load	89.0 %
3/4 Load	90.0 %
1/2 Load	90.5 %



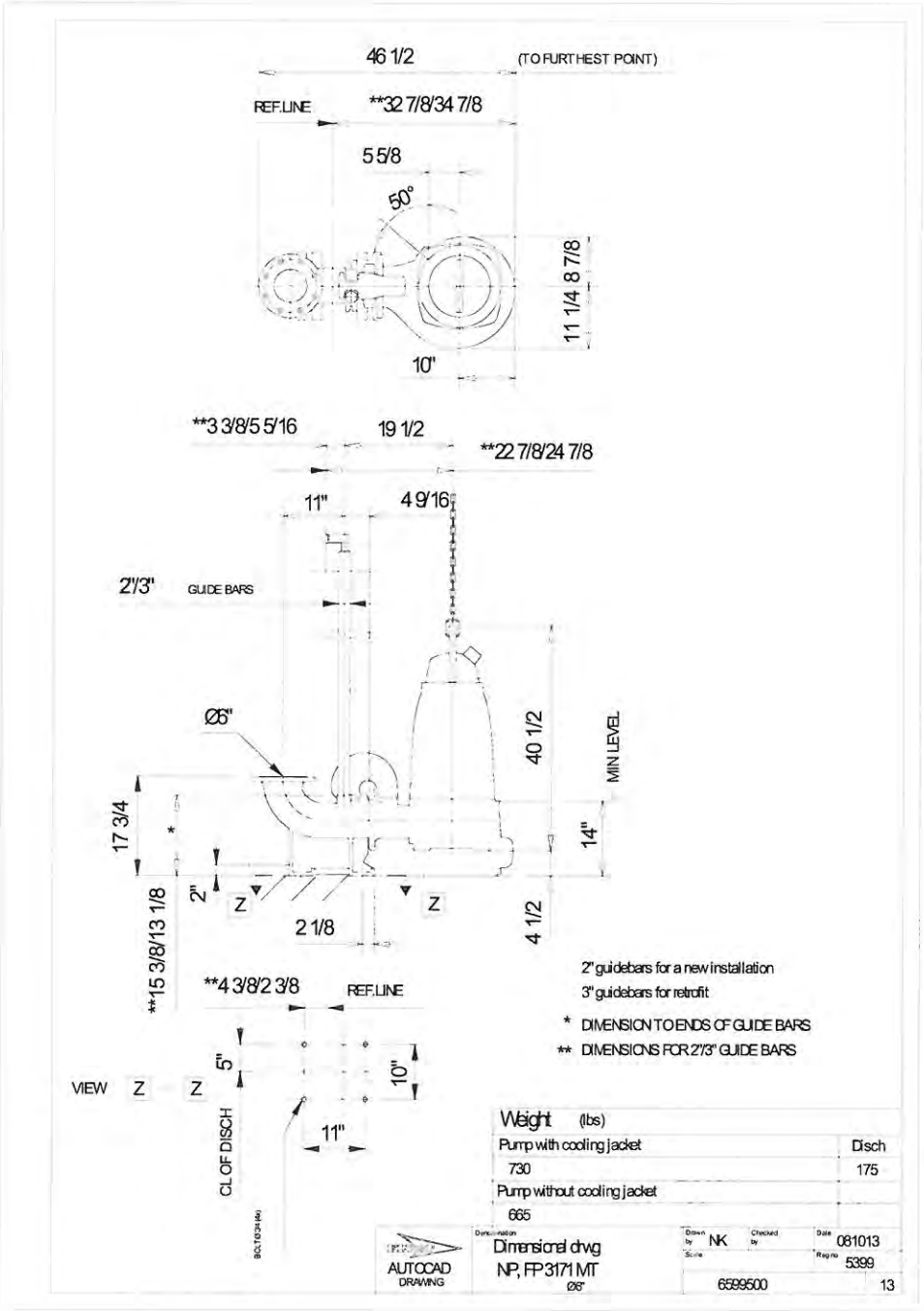
Curve according to: ISO 9906 grade 2 annex 1 or 2

Project	Project ID	Created by	Created on	Last update
			2013-01-04	

xylem
Let's Solve Water

NP 3171 MT 3~ 434
Dimensional drawing

FLYGT



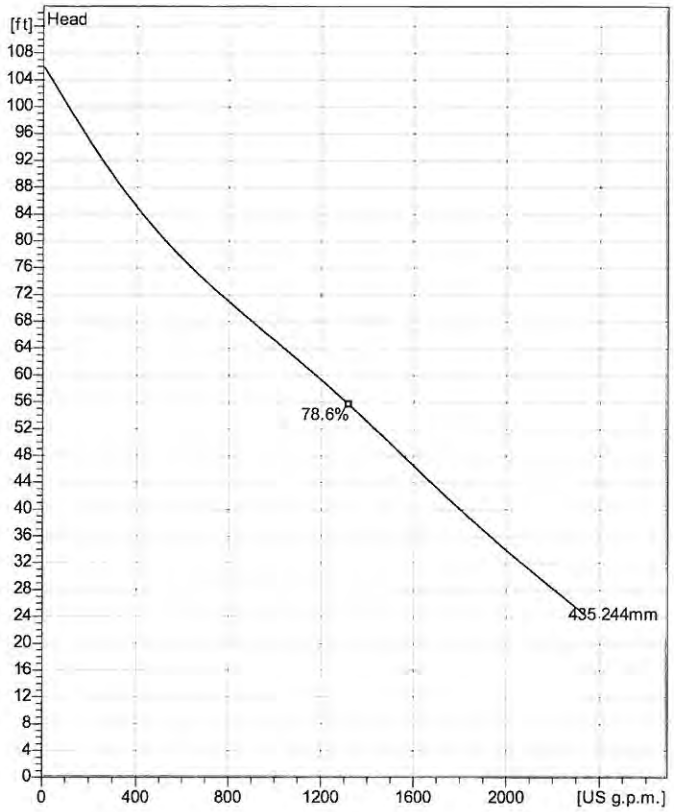
Project	Project ID	Created by	Created on	Last update
			2013-01-04	

xylem
Let's Solve Water

NP 3171 MT 3~ 435

Technical specification

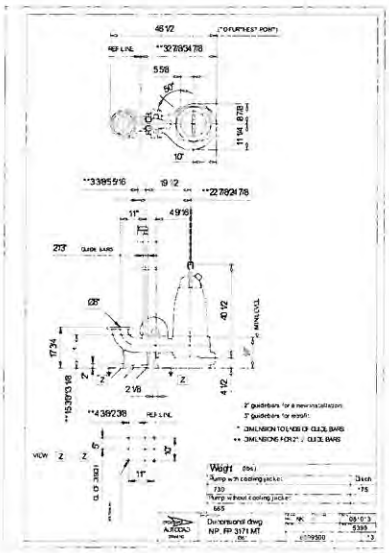
FLYGT



Curve according to: ISO 9906 grade 2 annex 1 or 2

Note: Picture might not correspond to the current configuration.

Installation: P - Semi permanent, Wet



General

Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Possible to be upgraded with Guide-pin® for even better clogging resistance. Modular based design with high adaptation grade.

Impeller

Impeller material	Grey cast iron
Outlet width	5 7/8 inch
Inlet diameter	200 mm
Impeller diameter	244 mm
Number of blades	2

Motor

Motor #	N3171.091 25-14-4AA-W 25hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	4
Phases	3~
Rated power	25 hp
Rated current	30 A
Starting current	183 A
Rated speed	1755 1/min
Power factor	
1/1 Load	0.89
3/4 Load	0.86
1/2 Load	0.78
Efficiency	
1/1 Load	88.0 %
3/4 Load	89.5 %
1/2 Load	89.5 %

Configuration

Project	Project ID	Created by	Created on	Last update
			2013-01-04	

xylem
Let's Solve Water

NP 3171 MT 3~ 435

FLYGT

Performance curve

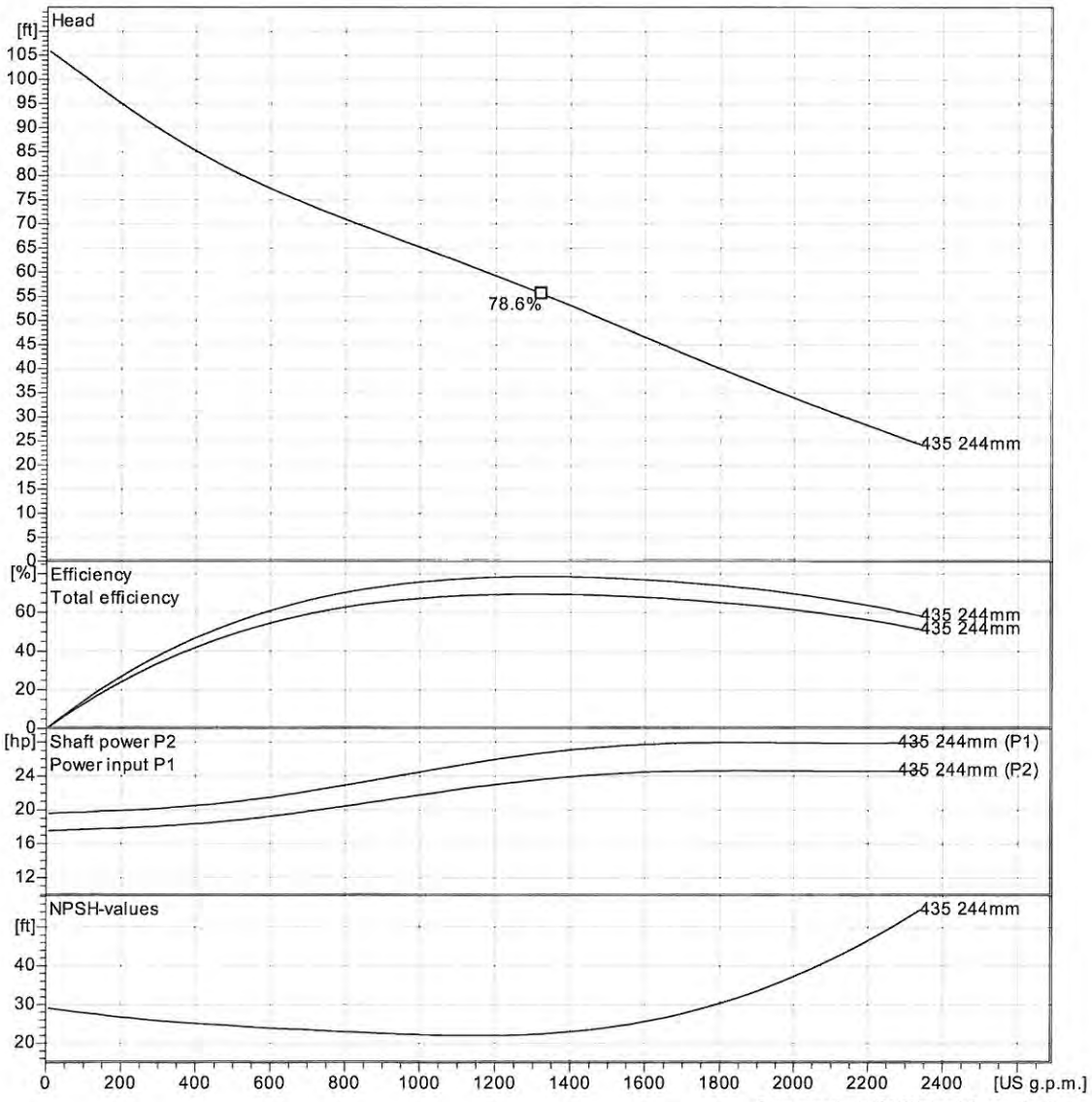
Pump

Outlet width	5 7/8 inch
Inlet diameter	200 mm
Impeller diameter	$9^5/_8$"
Number of blades	2

Motor

Motor #	N3171.091 25-14-4AA-W 25hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	4
Phases	3~
Rated power	25 hp
Rated current	30 A
Starting current	183 A
Rated speed	1755 1/min

Power factor	
1/1 Load	0.89
3/4 Load	0.86
1/2 Load	0.78
Efficiency	
1/1 Load	88.0 %
3/4 Load	89.5 %
1/2 Load	89.5 %



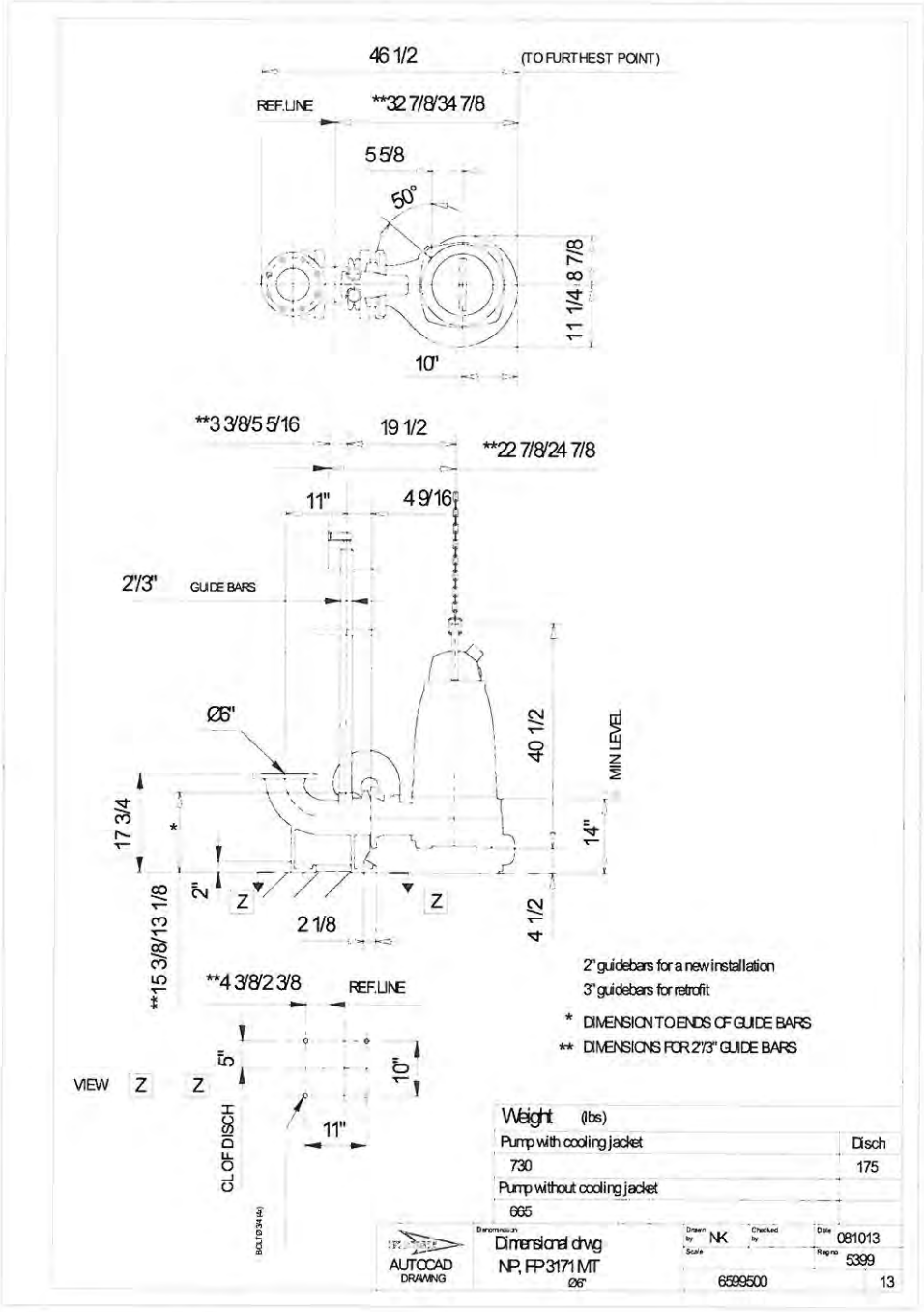
Curve according to: ISO 9906 grade 2 annex 1 or 2

Project	Project ID	Created by	Created on	Last update
			2013-01-04	

xylem
Let's Solve Water

NP 3171 MT 3~ 435
Dimensional drawing

FLYGT



Project	Project ID	Created by	Created on	Last update
			2013-01-04	

APPENDIX C – FIRE PROTECTION WATER SUPPLY AT BUILDING 19A

Jacobs Engineering Group, Inc
5005 SW Meadows Road
Suite 100
Lake Oswego, OR 97035
1-503-624-3000 Fax 1-503-624-3100

October 5, 2010

Juan Martin
UCSF State Fire Marshal
University of California San Francisco
654 Minnesota Street, 2nd Floor
San Francisco, California 94107-3027

Subject: Fire Protection Water Supply at Building 19A
Mission Bay Civil and CUP Utilities & Surface Improvements in Support of 19A
UCSF Project No. M8448
Jacobs Project No. R1W29601

Dear Mr. Martin:

Attached is a letter report dated September 24, 2010 from CSW / Stuber Stroeh regarding the fire protection water supply to Building 19A. This report was prepared in response to your request. Mark Salvucci requested that I send this report to you.

Please contact me at (503) 624-3214 or Kerry Ettinger at CSW / Stuber Stroeh at (415) 883-9850 with any questions.

Sincerely,

James P. Miller
Senior Project Manager

Attachment
- CSW Stuber Stroeh letter report entitled “Fire Protection Water Supply at Building 19A”

cc: Sandra Beck, UCSF
Dan Krasnow, UCSF
Mark Salvucci, Cambridge CM
Kerry Ettinger, CSW Stuber Stroeh
Michael Braschayko, Jacobs
Andrew Mittleman, Jacobs

45 Leveroni Court
Novato, CA 94949
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415.883.9850
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Novato
Petaluma
Sacramento

CSW | ST2
CSW/Stuber-Stroeh Engineering Group, Inc.

Engineers | Land Planners | Surveyors | Landscape Architects

Date: September 24, 2010
File: 4.1093.14

Mr. Jim Miller
Jacobs Engineering
5005 SW Meadow Road, Suite 300
Lake Oswego, OR 97035

RE: FIRE PROTECTION WATER SUPPLY AT BUILDING 19A UCSF MISSION BAY, SAN FRANCISCO (PROJECT M8448)

Dear Jim:

CSW/Stuber-Stroeh Engineering Group, Inc. (CSW|ST2) has prepared this report at the request of the University Fire Marshall to investigate the anticipated fire protection water supply at Building 19A on the UCSF Mission Bay Campus and to determine if the anticipated flow will meet the requirements of the California Fire Code. CSW|ST2 analyzed the system, including the proposed 12-inch fire line connection between the north and south system, which will be installed as part of the UCSF Project No. M8448 (Mission Bay Civil & CUP Utilities, Surface Improvements in Support of 19A).

Existing Conditions: The UCSF fire protection water supply system consists of 12-inch high density polyethylene (HDPE) underground piping, 6-inch ductile iron hydrant taps, fire hydrants and automatic sprinkler systems (from the Record Drawings titled "UCSF Mission Bay – Utilities & Civil Work/Infrastructure" dated October 1, 2004, prepared by MACTEC Engineering and Consulting, Inc.). The 12-inch HDPE piping has an interior diameter of 10.3-inches.

There are three points of connection between the City water distribution system and the UCSF private fire system: Owens Street & 15th Street and Owens Street & 14th Street serve the south system, and 4th Street & Nelson Rising Lane serve the north system.

A temporary 12-inch ductile iron pipe has recently been installed to connect the northern and southern systems. However, to more accurately model the proposed improvements, the data which pre-dates the temporary fire installation was used in this analysis. This allows for a more accurate accounting of potential flows feeding the Building 19A site.

Fire Hydrant Test Data: Several fire hydrant flow tests have been performed on the UCSF fire protection water supply, for both the north and south system. This data was used to build a model of the UCSF fire protection water supply system. For the north system, the Cosco Fire Protection (Cosco) fire flow data dated August 24, 2010 was used. Hydrant flow test number one (#1) was used for this analysis. For the south system, the Cosco fire flow data from the report titled "Fire Protection Backflow Preventer and Meter Flow Tests," dated June 30, 2010 was used. Test number nine (#9) was used for this analysis. At the time of testing,

the north and south system were not connected. No improvements to either system were implemented in the intervening time between tests.

See Exhibit A – Existing Fire Protection Water Supply for fire flow test hydrant locations.

Proposed Conditions: The M8448 project (Mission Bay Civil & CUP Utilities, Surface Improvements in Support of 19A) includes installation of a 12-inch HDPE water main to connect the north and south portions of the UCSF fire protection water supply system. Several new fire hydrants, including two (2) surrounding Building 19A, will be installed as part of the project. The project also includes an 8-inch HDPE fire service off the proposed 12-inch HDPE water main to serve the Building 19A fire service system.

See Exhibit B - On-Site Hydrants and POC at Building 19A for proposed fire protection water supply system layout.

Required Fire Flows: Given the size of Building 19A (234,825 square feet), the type of construction (type 1A), and the California Fire Code 2007 (see Attachments), the minimum fire flow for Building 19A is 5,250 gallons per minute (gpm) at a residual pressure of 20 pounds per square inch (psi). Should a 75% reduction due to the presence of automatic sprinkler system be approved, the required fire flow for Building 19 A would be 1,312.5 gpm. However, since this value is less than the minimum fire-flow of 1,500 gpm, the minimum required fire flows of 1,500 gpm at a residual pressure of 20 psi would be required. The building 19A team requires a minimum of 1,029 gpm at the 8-inch sprinkler connection with a 20 psi residual pressure to run the building's internal fire suppression system.

Fire Flow Model: Combining the existing and proposed conditions, a hydraulic model of the UCSF fire protection water supply system was created using WaterCAD XMV8. The fire hydrant flow test data was used to model the flow available to the UCSF fire protection water supply system and estimate the available fire water supply at Building 19A.

The flow data from Cosco's hydrant flow tests were modeled in WaterCAD as pump curves. The pump curve was developed by entering the static and residual pressures with their respective flow rates and then calculating a third point on the curve using the Three-Point Pump Curve Equation provided by Bentley (see attached flow data and sample calculation). The WaterCAD Model was built using the following design criteria called out in Table 1.

Table 1: Design Criteria For WaterCAD Model	
Existing On-Site Hydrant #1	Existing Grade (EG) @ Hydrant = 102.34' (from field survey dated June 14, 2010); static pressure, residual pressure, and available flow from Cosco's Hydrant Flow Report dated August 24, 2010.[1]
Existing On-Site Hydrant #2	EG @ Hydrant = 103.61'(from field survey dated June 14, 2010); static pressure, residual pressure, and available flow from Cosco's Hydrant Flow Report dated June 30, 2010.[2]

Table 1: Design Criteria For WaterCAD Model - Continued	
Existing Pipe Diameters and Materials, C-factor, and lengths	Existing Pipe Lengths, Diameters, and materials per plans entitled "UCSF Mission Bay – Utilities & Civil Work / Infrastructure," dated October 1 2004. All HDPE used a C-factor of 140, and Ductile Iron Pipe (DIP) used a C-factor of 130.
Proposed Pipe Diameters and Materials, C-factor, and lengths	Proposed Pipe Lengths, Diameters, and materials per the M8448 project. All HDPE used a C-factor of 140, and DIP used a C-factor of 130.
Proposed Fire Hydrants and POC at Building 19A	Elevations for the proposed fire hydrants and POC at Building 19A per UCSF Project No. M8448.

[1]See Attachment for Cosco Fire Protection Hydrant Flow Report dated August 24, 2010.
[2]See Attachment for Cosco Fire Protection Hydrant Flow Report dated June 30, 2010.

Fire Flow Model Results: The following flows, depicted in Table 2, are available at the following points of interest (see Exhibit B - On-Site Hydrants and POC at Building 19A for node locations):

Table 2: Points of Interest Vs. Available Flows			
Points of Interest (Name of Node(s) that were flowed[1])	**Description**	**Flow(s) (gpm)**	**Residual Pressure(s) (psi)**
H-5 only	8" HDPE Point of Connection to Building 19A (8" POC) flowed only	2,498	20
H-2, H-3, and H-4 flowed simultaneously	Hydrants at Gene Friend Way, Future Fifth Street, and Nelson Rising Lane flowed simultaneously	H-2 = 813 H-3 = 813 H-4 = 813 Total = 2,439	H-2 = 20.0 H-3 = 21.2 H-4 = 21.2
H-5 held @ 1,029gpm while H-2, H-3, and H-4 flowed simultaneously	8" POC held @ 1,029gpm while hydrants at Gene Friend Way, Future Fifth Street, and Nelson Rising Lane flowed simultaneously	H-2 = 476 H-3 = 476 H-4 = 476 H-5 = 1,029 Total = 2,457	H-2 = 20.0 H-3 = 21.0 H-4 = 20.6 H-5 = 22.2

Conclusion: In the first scenario, only the 8" POC to Building 19A was modeled as flowing. The calculated flow was 2,498 gpm at a residual pressure of 20psi. This meets and exceeds the fire flow requirements for Building 19A's fire protection system.

The second scenario where the three hydrants on Gene Friend Way, Future Fifth Street, and Nelson Rising Lane were modeled as flowing simultaneously, the calculated flow at each hydrant was 813 gpm at residual pressures of 20 psi, 21.2 psi, and 21.2 psi, respectively. The cumulative available fire flows to the site is 2,439 gpm, which meets and exceeds the fire flow requirements for the site, should a reduction be granted due to the presence of a building sprinkler system.

The third scenario where the 8" POC was held at 1,029 gpm and the three hydrants on Gene Friend Way, Future Fifth Street, and Nelson Rising Lane were modeled as flowing simultaneously, the calculated flow at each hydrant was 476 gpm at residual pressures of 20psi, 21.0 psi, and 20.6 psi, respectively. The cumulative available fire flows to the site is 2,457 gpm, which meets and exceeds the fire flow requirements for the site, should a reduction be granted due to the presence of a building sprinkler system.

The calculated flows assume that there are no additional hydrants or fire sprinkler systems drawing on the fire protection water supply.

We trust this provides you with the information required at this time. If you require further information, please call us at (415) 883-9850.

Sincerely,

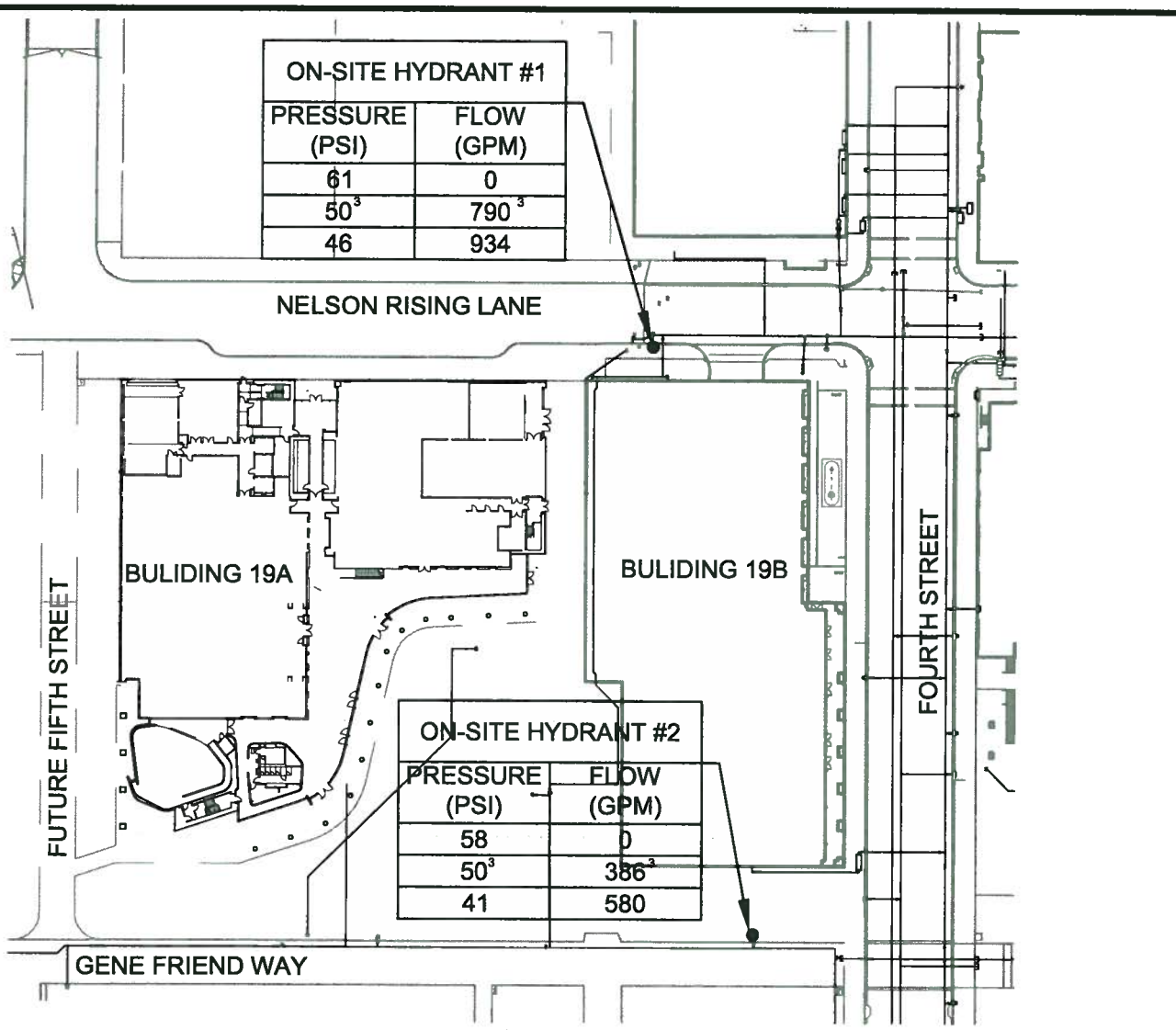
CSW/STUBER-STROEH ENGINEERING GROUP, INC.

Kerry Ettinger
R.C.E. #62782, Exp. 06/30/2012

Julia A. Harberson
R.C.E. #76626, Exp. 12/31/2010

KRE:JAH:sef
Attachments:

- Exhibit A - Existing Fire Protection Water Supply
- Exhibit B - On-Site Hydrants and POC at Building 19A
- Cosco Fire Protection Hydrant Flow Report dated August 24, 2010
- Cosco Fire Protection Hydrant Flow Report dated June 30, 2010 (Report only, without attachments or cut sheets)
- WaterCAD Raw Results Data Tables
- WaterCAD Fire Hydrant Curves
- 3rd Point Sample Calculation
- California Fire Code Requirements



Graphic Scale (in feet)

100 0 100 200

1 inch = 100 ft.

NOTES

1. FLOW DATA FOR HYDRANT #1 (NORTH SYSTEM) DEVELOPED FROM COSCO FIRE PROTECTION HYDRANT FLOW TEST # 1 DATED AUGUST 24, 2010. REFER TO FIRE FLOW REPORT FOR ADDITIONAL DESIGN CRITERIA USED IN CALCULATIONS.

2. FLOW DATA FOR HYDRANT #2 (SOUTH SYSTEM) DEVELOPED FROM COSCO FIRE PROTECTION FLOW REPORT ENTITLED "FIRE PROTECTION BACKFLOW PREVENTER AND METER FLOW TESTS," DATED JUNE 30, 2010. REFER TO FIRE FLOW REPORT FOR ADDITIONAL DESIGN CRITERIA USED IN CALCULATIONS.

3. PRESSURE AND FLOW FOR THIS ENTRY WAS NOT PART OF THE ORIGINAL FIRE FLOW REPORT. AT THE CHOSEN PRESSURE (50 PSI), IT WAS NECESSARY TO CALCULATE THE CORRESPONDING FLOW FOR MODELING PURPOSES. SEE ATTACHMENT "3RD POINT SAMPLE CALCULATION" FOR HOW THIS FLOW WAS CALCULATED.

CSW | ST2

CSW/Stuber-Stroeh Engineering Group, Inc.

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Rev.	Date: 08/30/2010
Job No. 4.1093.14	Scale: 1" = 100'

UCSF MISSION BAY CAMPUS
FIRE FLOW EXHIBIT A

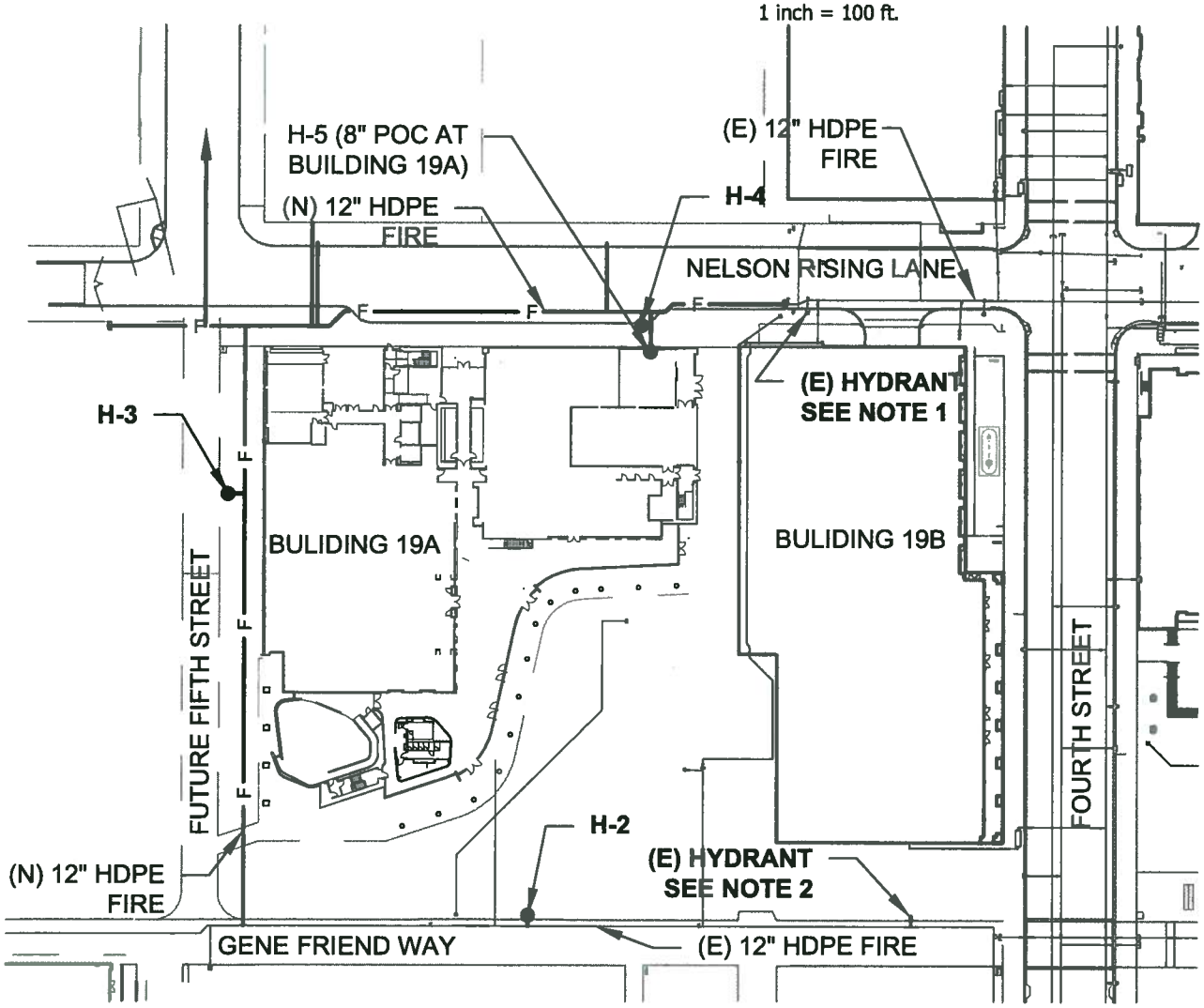
EXISTING FIRE PROTECTION WATER SUPPLY

SAN FRANCISCO SAN FRANCISCO CALIFORNIA

Graphic Scale (in feet)

100 0 100 200

1 inch = 100 ft.



NOTES

1. EXISTING HYDRANT IS ON-SITE HYDRANT #1 SHOWN ON EXHIBIT A.
2. EXISTING HYDRANT IS ON-SITE HYDRANT #2 SHOWN ON EXHIBIT A.

CSW | ST2

CSW/Stuber-Stroeh Engineering Group, Inc.

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Job No. 4.1094.14	Scale: 1" = 100'

UCSF MISSION BAY CAMPUS FIRE FLOW EXHIBIT B

PROPOSED ON-SITE HYDRANTS & POC AT BUILDING 19A

SAN FRANCISCO SAN FRANCISCO CALIFORNIA

Cosco Fire Protection

DATE: 8/24/10

OWNER: UCSF-Mission Bay
1855 Folsom St., Ste 304, San Francisco, 94103

Hydrant Flow Test #1

PITOT PRESSURE CONVERSIONS:

Flow Hydrant 1 Pressures from hyd. 5

HYDRANT	STATIC PRESSURE	PITOT	TOTAL GPM	RESIDUAL PRESSURE
1	61	31	934	46
			0	
			0	
			0	
Total	61		934	46

PLAYPIPE OUTLET SIZE: 2.5
CO-EFFICIENT: 0.9
OUTLET FACTOR: 167.794

Chart Pressures were recorded from Hydrant #5.

A. **N.F.P.A. 25 ANNUAL FIRE HYDRANT INSPECTION CHECKLIST:**

		YES	N/'A	NO
1	Hydrant caps and chains in place, in good condition.	X		
2	Hydrant outlets are slightly more than hand tight?	X		
3	Hydrant top free of leaks?	X		
4	Hydrant outlet gaskets free of leaks?	X		
5	Hydrant barrel appear to be in good condition, free of cracks?	X		
6	Hydrant outlet hose connection threads appearto be in good condition and lubricated?	X		
7	Hydrant operating nut appear to be in good physical condition, squared edges and operable?	X		
8	All hydrant outlet valves operated and flushed?	X		
9	Hydrant drains properly (dry barrell hyrdants)?		X	

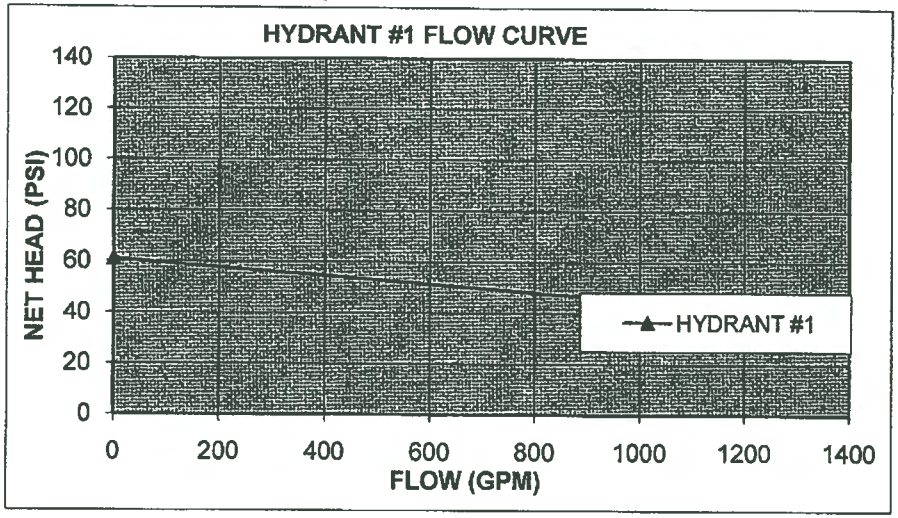
B. EXPLANATION OF "NO" ANSWERS:

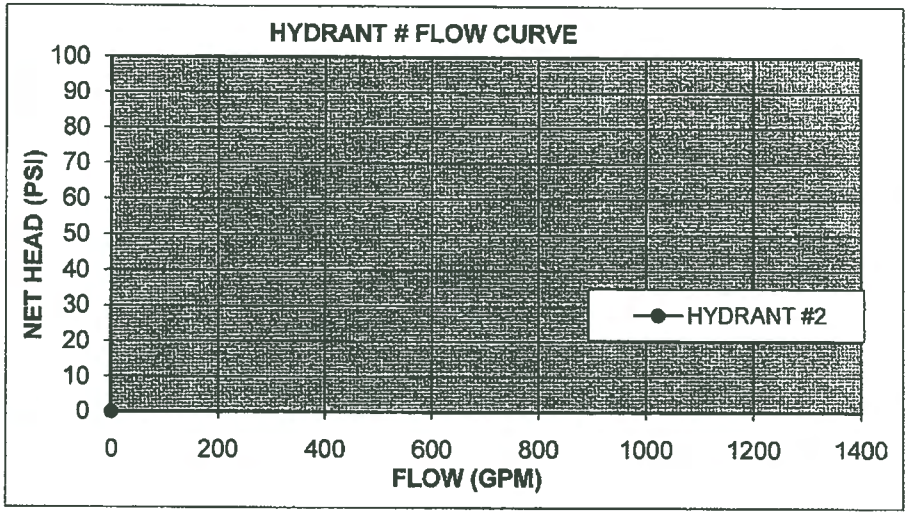
Cosco Fire Protection

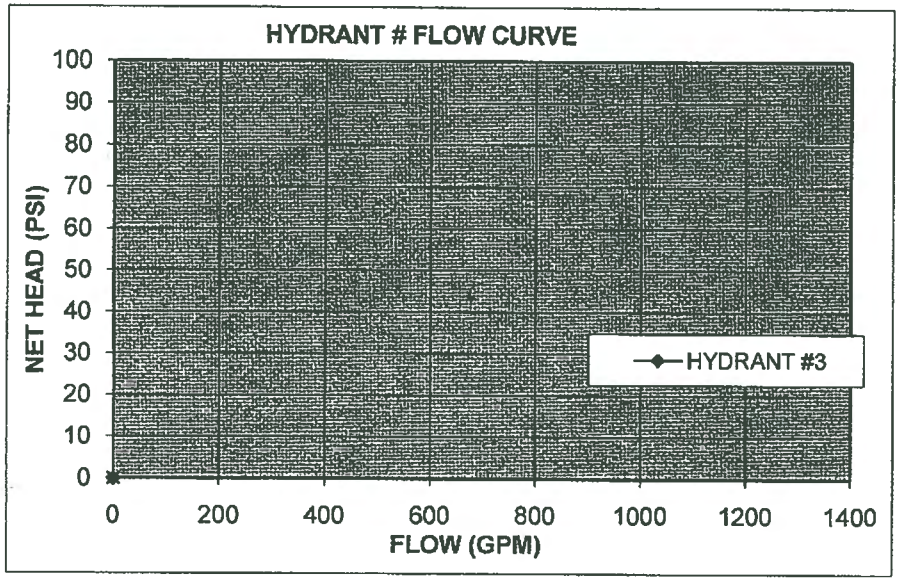
OWNER: **UCSF-Mission Bay**
1855 Folsom St., Ste 304, San Francisco, 94103

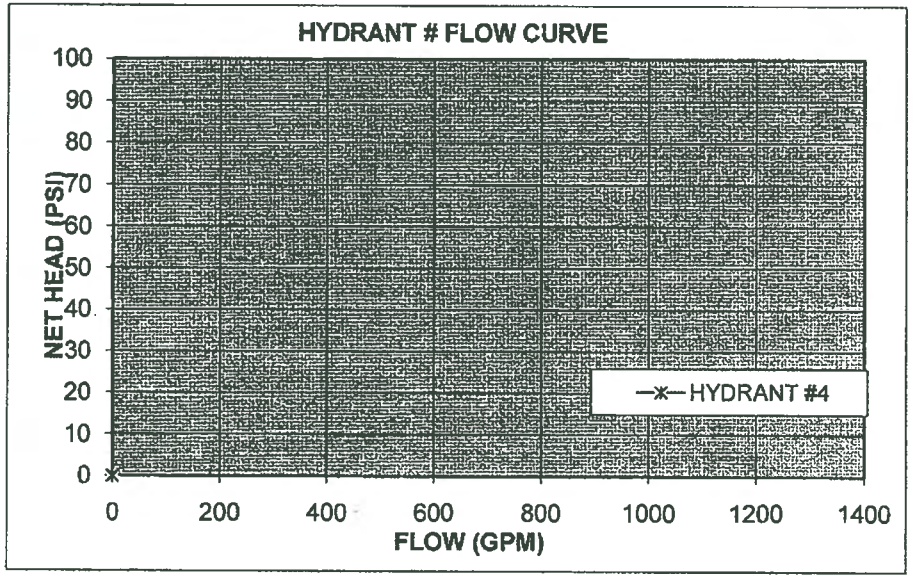
DATE: **8/24/10**

Hydrant Flow Test #1









COSCO
Fire Protection

Fire Protection and Life Safety Specialists

June 30, 2010

Mr. Ernie Duran
Rudolph & Sletten
c/o UCSF - CVRB Project
555 Mission Bay Boulevard South
San Francisco, CA

Re: Fire Protection Backflow Preventer and Meter Flow Tests
Nelson Rising Lane
UCSF Mission Bay Campus
San Francisco, CA
R&S PCO #9110

Dear Mr. Duran,

Cosco Fire Protection has completed its review and testing of the Fire Mains in Nelson Rising Way. Please refer to the following Data:

Purpose: The purpose of this investigation was to determine the source of the low water flow and pressure loss for the fire main on Nelson Rising Lane. On June 29, 2010 flow testing was done for the backflow preventer and three (3) water meters on 4th Street. This report cover this test.

Flow Test Data: See Sheet #2

Analysis:

June 29, 2010:

1. Test #1: A single City Fire Hydrant on 4th St. was flowed at the NW corner of the CVRB to verify a starting point for available flow and pressure being supplied to the Fire Main. The result was a flow of 830 GPM, Static Pressure of 71 PSI and a Residual Pressure of 68 PSI from a single 3" hydrant outlet. Cosco utilized a 3 x 2 ½" reducer, a 2 ½" meter and 20' of 2 ½" fire hose to a Hose Monster diverter.

2. Test #2: A second test was performed 30 minutes later on the same City Hydrant. This test was performed to verify the consistency or the original test results. The second result was a flow of 820 GPM, Static Pressure of 71 PSI and a Residual Pressure of 69 PSI from a single 3" hydrant outlet. The City water main was delivering consistent flow and pressure.

3. Test #3: A flow test was taken at the discharge flange of the Backflow Preventer (BFP) utilizing a 10" blind flange tapped 3" IPT with a 3" nipple to a 3" gate valve, and a 3" x 2 ½" bell reducer to a 2 ½" nipple. A 2 ½" test meter was connected and

Flow Test Data

COSCO FIRE PROTECTION

240 S Vasco Rd.
Livermore, CA 94551

June 29, 2010

Hydrant Flow Tests

Location: UCSF Mission Bay - 10" BFP & Meters, 4th St. @ Nelson Rising Lane

Test #	Hydrant or Device	Flow Test	Flow GPM	Static PSI	Residual PSI	Pressure Location
1	#1 City Hyd	(1) 3"	830	71	68	#2 City Hyd
2	#1 City Hyd	(1) 3"	820	71	69	#2 City Hyd
3	(3) Mtr w/ BFP	(1) 3"	580	61 (70)	45	Test Va BFP
4	(3) Mtr w/ BFP	(1) 3"	610	61 (70)	46 (56)	Test Va BFP
5	(3) Mtrs w/o BFP	(1) 3"	700	70	64	Test Va BFP
6	S Mtr w/ BFP	(1) 3"	580	61 (70)	42	Test Va BFP
7	Mid Mtr w/ BFP	(1) 3"	580	61 (70)	44	Test Va BFP
8	N Mtr w/ BFP	(1) 3"	600	61 (70)	45	Test Va BFP
9	S Hyd Rock Hall	(1) 3"	580	58	41	SW Hyd Rock H

discharged into 20' of 2 ½" fire hose to a Hose Monster diverter. Pressures were read on the down stream side of the BFP check valves at the ¾" test cock. All three water meters were open. The observed flow was 580 GPM, Static Pressure of 61 PSI and a Residual Pressure of 45 PSI. 2 PSI is added to the BFP pressure readings to account for the elevation difference between the City hydrant and the BFP. Corrected readings are (63) PSI Static and (47) PSI Residual.

4. Test #4: Test #3 was repeated. Results were a flow of 610 GPM, 61 (63) PSI Static, 46 (48) PSI Residual.

5. Test #5: Three Meters were tested simultaneously without the BFP. The 10" BFP was removed without the 10" supply side OS&Y Gate Valve. The 10" flanged test valve assembly described in Test #3 was transferred to the discharge of the 10"

OS&Y Gate Valve. Pressure readings were taken from the ¾" test cock on the valve. Results were a flow of 700 GPM, 70 (72) PSI static, 64 (66) PSI Residual.

6. Test #6: The discharge valves for the Mid Meter and N Meter were closed and a flow test was performed with the backflow preventer and the S Meter. The same test valve assembly and pressure reading source were used as described in Test #3. Results were a flow of 580 GPM, 61 PSI Static and 42 PSI Residual.

7. Test #7: Same as Test #6 except only the Mid Meter was used for supply. Results were a flow of 580 GPM, 61 PSI Static, 44 PSI Residual.

8. Test #8: Same as Test #6 except only the N Meter was used for supply. Results were a flow of 600 GPM, 61 PSI Static and 45 PSI Residual.

9. Test #9: Frank Fasano suggested testing a hydrant on the South side of Rock Hall to see the flow available from the Owens Fire Main supply. Pressures were recorded from the South/West Hydrant at Rock Hall. Results were a flow of 580 GPM, 58 PSI Static and 41 PSI Residual. It appears that this section of the fire main has similar flow restrictions as does Nelson Rising Lane. Frank Fasano and Cosco inspected the South Connection on Owens and found a 10" BFP supplied by two meters. We did a visual inspection of one meter and it appears to be 4". We suggest an additional study with flow tests be made on this part of the Fire Main system.

Attachments:

1. Fire Service Schematic
2. Neptune Meter Product Data
3. Watts Backflow Preventer Data

Conclusions:

1. Backflow Preventer: Before we can analyze the recorded data, corrections to the static pressure on the discharge side of the Reduced Pressure Backflow Preventer must be made. These corrections are shown on the chart as (xx). The device automatically reduces the downstream static pressure by 10 PSI +- below the inlet pressure to protect the City Main from contamination. When the BFP check valves open under flow, this 10PSI reduction is lost and then becomes a 10PSI friction loss due to the flow characteristics of the device. The static 10 PSI reduction and the 10 PSI friction loss under a flow condition are not additive. Therefore, when comparing the flows taken for the outlet of the BFP, 10 PSI must be added to the static reading for a true pressure differential comparison to the residual pressure under flow conditions. However, if we do this correction, the valve is showing a 20 PSI +- residual pressure loss, 10 psi higher than the charts indicate. We know our basis for the 10 PSI increase to the static pressure is correct as verified in Test #5 at the inlet of the BFP. Test #5, measured flow through the three (3) meters without the BFP and resulted in 20 PSI +- higher residual pressure, which would account for the removed BFP. The BFP should not loose 20 PSI. Further investigation of this device should be made.

Recommendation: Contact Watts engineering and resolve the problem. Consider replacing the Backflow Preventer with an Ames with better flow characteristics.

2. Additional study is recommended to verify the sufficiency of the pipe size from the city main, through the 3 meters and to the supply side of the BFP. Calculations must take into account the actual inside diameters of the HDPE piping. Nominal pipe sizes cannot be used and will result in overly optimistic results. As shown on our Fire Service Schematic, 12" HDPE has an inside diameter of 10.293", 8" HDPE has an inside diameter of 6.963 inches, and 6" HDPE has an inside diameter of 5.348".

   Recommendations: Increase the pipe size from the meters to the header to 8" HDPE. Replace the existing variable pipe size header with a continuous 12" HDPE header.

3. Consideration should be taken to reconnect the Nelson Rising Way leg of the Fire Main system to the portion of the system supplied by the Owens connections.

4. The Owens connections should undergo a study for improvement with the addition of adequately sized meters.

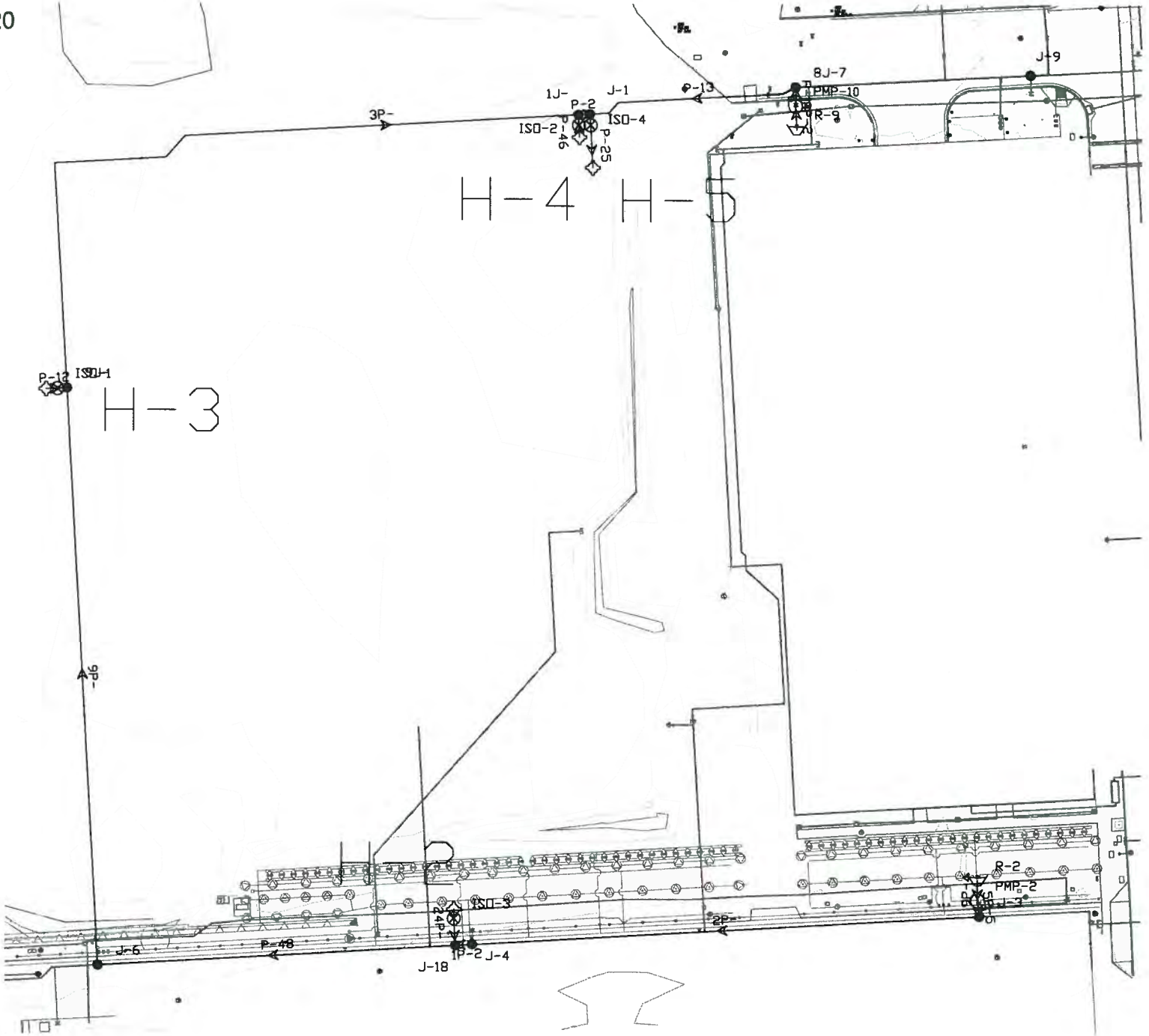
5. Additional fire flow calculations are recommended. Based upon the use of HDPE, the fire mains are actually 10" in lieu of the 12" shown. We have seen calculations based upon the use of nominal diameters and not actual inside diameters. Fire flow calculations using the Hazen Williams formula require actual inside diameters.

The above information is based upon observed flows taken from hydrants and devices as shown on the attached Fire Service Schematic on June 29, 2010. Time of flow testing was 8:00 AM to 12:00 PM.

Respectfully submitted
Cosco Fire Protection

Jan Bento
Project Manager

"RAW" FIRE FLOW
MODEL
DATE: 2010-09-20



H5 open 2498gpm

Current Time: 0.000 hours

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-2	Closed	103.94	0	149.07	19.5
H-3	Closed	101.35	0	147.61	20
H-4	Closed	102.26	0	146.41	19.1
H-5	Open	98.32	2498	144.47	20

H2 through H4 open 813 gpm

Current Time: 0.000 hours

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-2	Open	103.94	813	150.14	20
H-3	Open	101.35	813	150.45	21.2
H-4	Open	102.26	813	151.27	21.2
H-5	Closed	98.32	0	151.79	23.1

H5 1029gpm, H2 through H4 476gpm

Current Time: 0.000 hours

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-2	Open	103.94	476	150.15	20
H-3	Open	101.35	476	149.93	21
H-4	Open	102.26	476	149.93	20.6
H-5	Open	98.32	1029	149.74	22.2

Pump Definition Detailed Report: Flow TestFH1 - 20100824

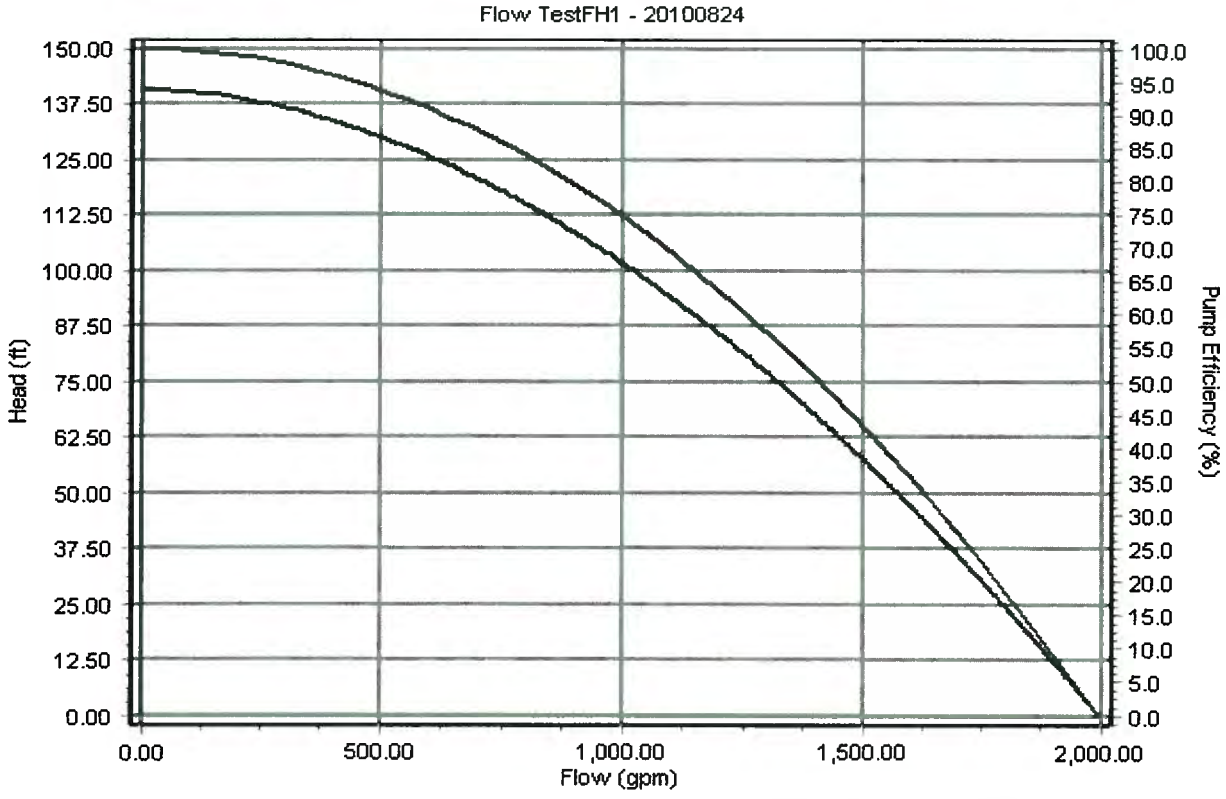
Element Details			
ID	244	Notes	
Label	Flow TestFH1 - 20100824		

Pump Curve

Flow (gpm)	Head (ft)	
0	140.91	
789.97	115.5	**(see sample third point calc)**
934	106.26	

Pump Efficiency			
Pump Efficiency	Best Efficiency Point	Motor Efficiency	100
BEP Efficiency	100.0 %		False
BEP Flow	0.00 gpm		

Transient (Physical)		
Inertia (Pump and Motor)	0 lb·ft²	SI=25, US=1280
Speed (Full)	0 rpm	True



Coefficients: a = 140.91 ft; b = 1.094e-004 ft/(gpm)^c; c = 1.852

Pump Definition Detailed Report: Flow Test 9 - 20100630

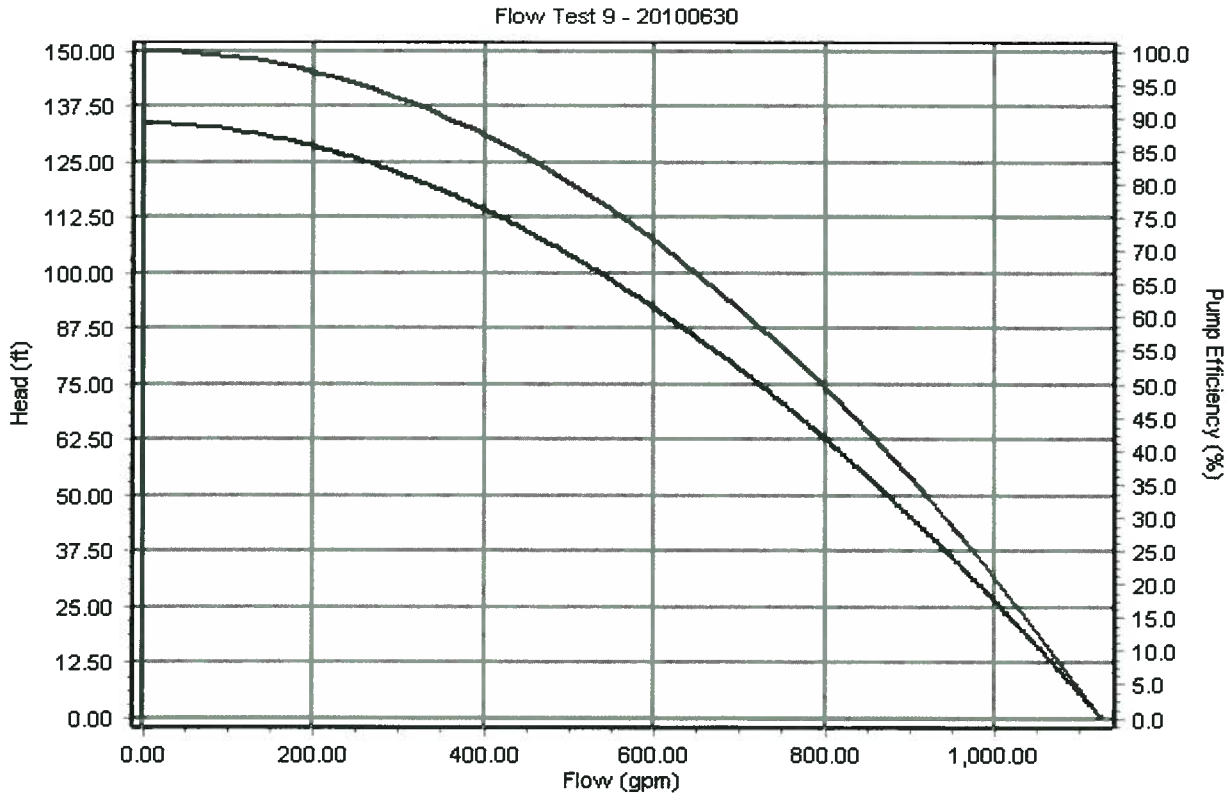
Element Details			
ID	245	Notes	
Label	Flow Test 9 - 20100630		

Pump Curve

Flow (gpm)	Head (ft)	
0	133.98	
386.06	115.5	**(see attached sample third point calc)**
580	94.71	

Pump Efficiency			
Pump Efficiency	Best Efficiency Point	Motor Efficiency	100
BEP Efficiency	100.0 %		False
BEP Flow	0.00 gpm		

Transient (Physical)		
Inertia (Pump and Motor)	0 lb·ft²	SI=25, US=1280
Speed (Full)	0 rpm	True



Coefficients: a = 133.98 ft; b = 2.996e-004 ft/(gpm)^c; c = 1.852

CSW | ST2
CSW/Stuber-Stroeh Engineering Group, Inc. 45 Leveroni Court, Novato, CA 94949 Tel 415.883.9850 Fax 415.883.9835
1310 Redwood Way, Suite 200, Petaluma, CA 94954 Tel 707.795.4764 Fax 707.795.0516

SHEET NO. 1/1

JOB NO. 4109314 JOB UCSF 19A Infrastructure BY JAH DATE 9/20/10

CLIENT _____ SUBJECT 3rd Point Sample Calculation CHK'D _____ DATE _____

North System

Cosco Fire Protection Hydrant Flow Test #1 (8/24/10)

Static Pressure = 61 psi

Residual Pressure = 46 psi

Flow At Hydrant = 934 gpm

Design Pressure = 50 psi

Design Flow = Qr

Bently 3rd Point Equation:

$$Qr = Qf \times \left[\left(\frac{Hr}{Hf}\right)^{0.54}\right]$$

$$Qr = (934\,gpm)\left[\frac{(61\,psi - 50\,psi)}{(61\,psi - 46\,psi)}\right]^{0.54}$$

$$Qr = 789.97\,gpm\ @\ 50\,psi$$

South System

Cosco Fire Protection Hydrant Flow Test #9 (Report 6/30/10)

Static Pressure = 58 psi

Residual Pressure = 41 psi

Flow At Hydrant = 580 gpm

Design Pressure = 50 psi

$$Qr = (580\,gpm) \times \left[\frac{(58\,psi - 50\,psi)}{(58\,psi - 41\,psi)}\right]^{0.54}$$

$$Qr = 386.06\,gpm\ @\ 50\,psi$$

APPENDIX B
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code.*

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by fire walls without openings, constructed in accordance with the *California Building Code,* are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min). Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5 m^2) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

SECTION B106
REFERENCED STANDARDS

	CBC-07	California Building Code	B104.2, Table B105.1
ICC	IWUIC-06	International Wildland-Urban Interface Code	B103.3
NFPA	1142-01	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS[a]

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[c]	FLOW DURATION (hours)
Type IA and IB[b]	Type IIA and IIIA[b]	Type IV and V-A[b]	Type IIB and IIIB[b]	Type V-B[b]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

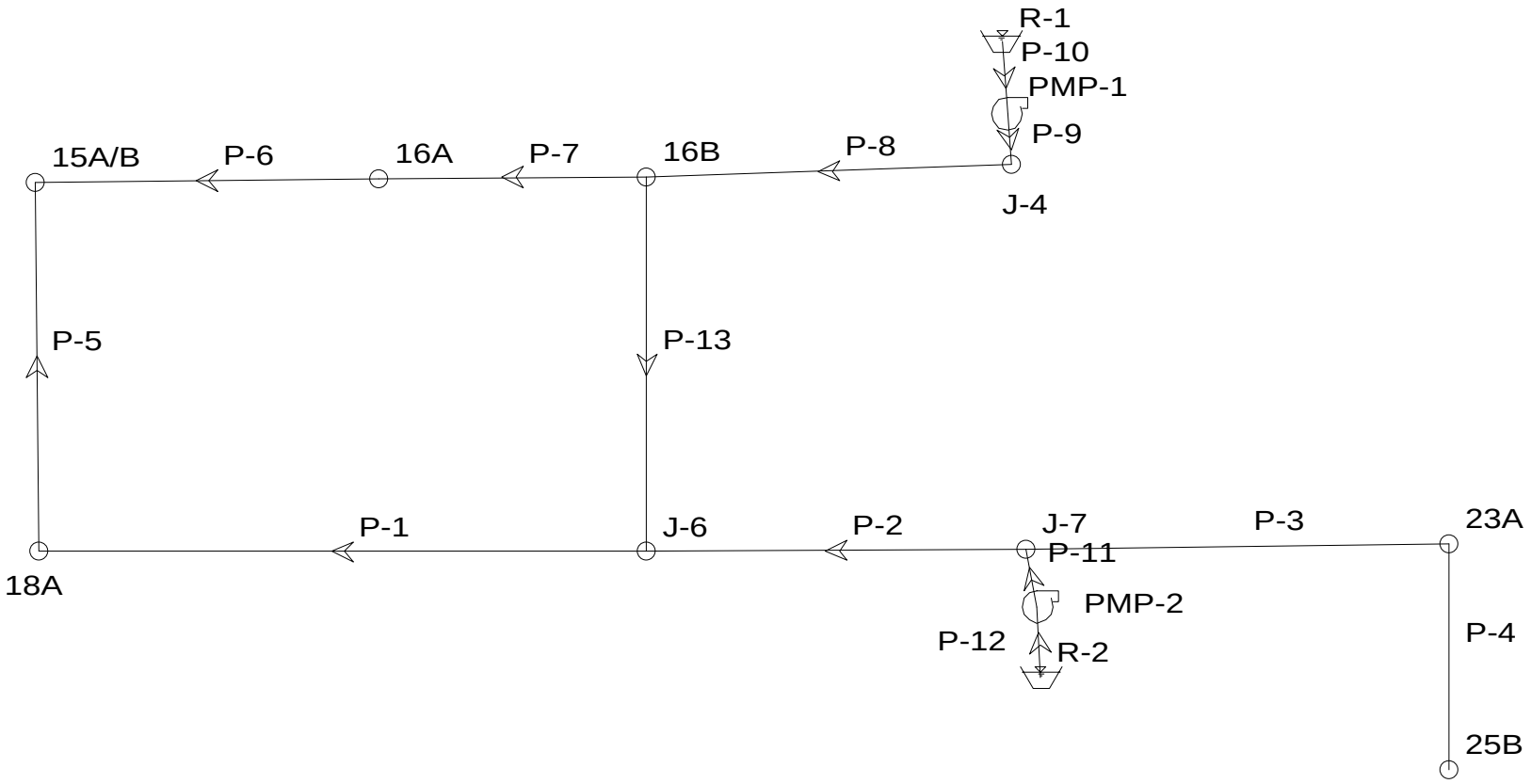
a. The minimum required fire flow shall be allowed to be reduced by 25 percent for Group R.

b. Types of construction are based on the *California Building Code*.

c. Measured at 20 psi.

APPENDIX D – FIRE FLOW CALCULATIONS

Steady State Analysis



Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	1,500.00	Fixed	1,500.00	101.59	43.93
16A	Demand	0.00	Fixed	0.00	101.88	44.06
16B	Demand	0.00	Fixed	0.00	102.19	44.19
J-4	Demand	0.00	Fixed	0.00	102.62	44.38
18A	Demand	0.00	Fixed	0.00	101.84	44.04
J-6	Demand	0.00	Fixed	0.00	102.19	44.19
J-7	Demand	0.00	Fixed	0.00	102.45	44.30
23A	Demand	0.00	Fixed	0.00	102.45	44.30
25B	Demand	0.00	Fixed	0.00	102.45	44.30

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	2,450.00	Fixed	2,450.00	47.29	20.45
16A	Demand	0.00	Fixed	0.00	48.02	20.76
16B	Demand	0.00	Fixed	0.00	48.78	21.10
J-4	Demand	0.00	Fixed	0.00	49.81	21.54
18A	Demand	0.00	Fixed	0.00	47.90	20.71
J-6	Demand	0.00	Fixed	0.00	48.78	21.10
J-7	Demand	0.00	Fixed	0.00	49.48	21.40
23A	Demand	0.00	Fixed	0.00	49.48	21.40
25B	Demand	0.00	Fixed	0.00	49.48	21.40

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	101.85	44.04
16A	Demand	1,500.00	Fixed	1,500.00	101.79	44.02
16B	Demand	0.00	Fixed	0.00	102.19	44.19
J-4	Demand	0.00	Fixed	0.00	102.62	44.38
18A	Demand	0.00	Fixed	0.00	101.99	44.10
J-6	Demand	0.00	Fixed	0.00	102.19	44.19
J-7	Demand	0.00	Fixed	0.00	102.45	44.30
23A	Demand	0.00	Fixed	0.00	102.45	44.30
25B	Demand	0.00	Fixed	0.00	102.45	44.30

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	47.94	20.73
16A	Demand	2,450.00	Fixed	2,450.00	47.79	20.67
16B	Demand	0.00	Fixed	0.00	48.78	21.09
J-4	Demand	0.00	Fixed	0.00	49.81	21.54
18A	Demand	0.00	Fixed	0.00	48.29	20.88
J-6	Demand	0.00	Fixed	0.00	48.79	21.10
J-7	Demand	0.00	Fixed	0.00	49.49	21.40
23A	Demand	0.00	Fixed	0.00	49.49	21.40
25B	Demand	0.00	Fixed	0.00	49.49	21.40

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	102.19	44.19
16A	Demand	0.00	Fixed	0.00	102.18	44.19
16B	Demand	1,500.00	Fixed	1,500.00	102.18	44.19
J-4	Demand	0.00	Fixed	0.00	102.61	44.37
18A	Demand	0.00	Fixed	0.00	102.20	44.19
J-6	Demand	0.00	Fixed	0.00	102.21	44.20
J-7	Demand	0.00	Fixed	0.00	102.47	44.31
23A	Demand	0.00	Fixed	0.00	102.47	44.31
25B	Demand	0.00	Fixed	0.00	102.47	44.31

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	46.73	20.21
16A	Demand	0.00	Fixed	0.00	46.72	20.20
16B	Demand	2,480.00	Fixed	2,480.00	46.71	20.20
J-4	Demand	0.00	Fixed	0.00	47.76	20.65
18A	Demand	0.00	Fixed	0.00	46.76	20.22
J-6	Demand	0.00	Fixed	0.00	46.80	20.24
J-7	Demand	0.00	Fixed	0.00	47.51	20.55
23A	Demand	0.00	Fixed	0.00	47.51	20.55
25B	Demand	0.00	Fixed	0.00	47.51	20.55

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	101.86	44.05
16A	Demand	0.00	Fixed	0.00	102.02	44.12
16B	Demand	0.00	Fixed	0.00	102.20	44.19
J-4	Demand	0.00	Fixed	0.00	102.63	44.38
18A	Demand	1,500.00	Fixed	1,500.00	101.45	43.87
J-6	Demand	0.00	Fixed	0.00	102.18	44.19
J-7	Demand	0.00	Fixed	0.00	102.44	44.30
23A	Demand	0.00	Fixed	0.00	102.44	44.30
25B	Demand	0.00	Fixed	0.00	102.44	44.30

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	47.96	20.74
16A	Demand	0.00	Fixed	0.00	48.37	20.91
16B	Demand	0.00	Fixed	0.00	48.80	21.10
J-4	Demand	0.00	Fixed	0.00	49.82	21.55
18A	Demand	2,450.00	Fixed	2,450.00	46.95	20.30
J-6	Demand	0.00	Fixed	0.00	48.76	21.09
J-7	Demand	0.00	Fixed	0.00	49.46	21.39
23A	Demand	0.00	Fixed	0.00	49.46	21.39
25B	Demand	0.00	Fixed	0.00	49.46	21.39

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	102.64	44.38
16A	Demand	0.00	Fixed	0.00	102.65	44.39
16B	Demand	0.00	Fixed	0.00	102.67	44.40
J-4	Demand	0.00	Fixed	0.00	103.09	44.58
18A	Demand	0.00	Fixed	0.00	102.61	44.37
J-6	Demand	0.00	Fixed	0.00	102.56	44.35
J-7	Demand	0.00	Fixed	0.00	101.71	43.98
23A	Demand	1,500.00	Fixed	1,500.00	100.06	43.27
25B	Demand	0.00	Fixed	0.00	100.06	43.27

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	53.16	22.99
16A	Demand	0.00	Fixed	0.00	53.19	23.00
16B	Demand	0.00	Fixed	0.00	53.22	23.01
J-4	Demand	0.00	Fixed	0.00	54.20	23.44
18A	Demand	0.00	Fixed	0.00	53.08	22.96
J-6	Demand	0.00	Fixed	0.00	52.98	22.91
J-7	Demand	0.00	Fixed	0.00	51.02	22.06
23A	Demand	2,400.00	Fixed	2,400.00	47.09	20.36
25B	Demand	0.00	Fixed	0.00	47.09	20.36

Steady State Analysis
Junction Report

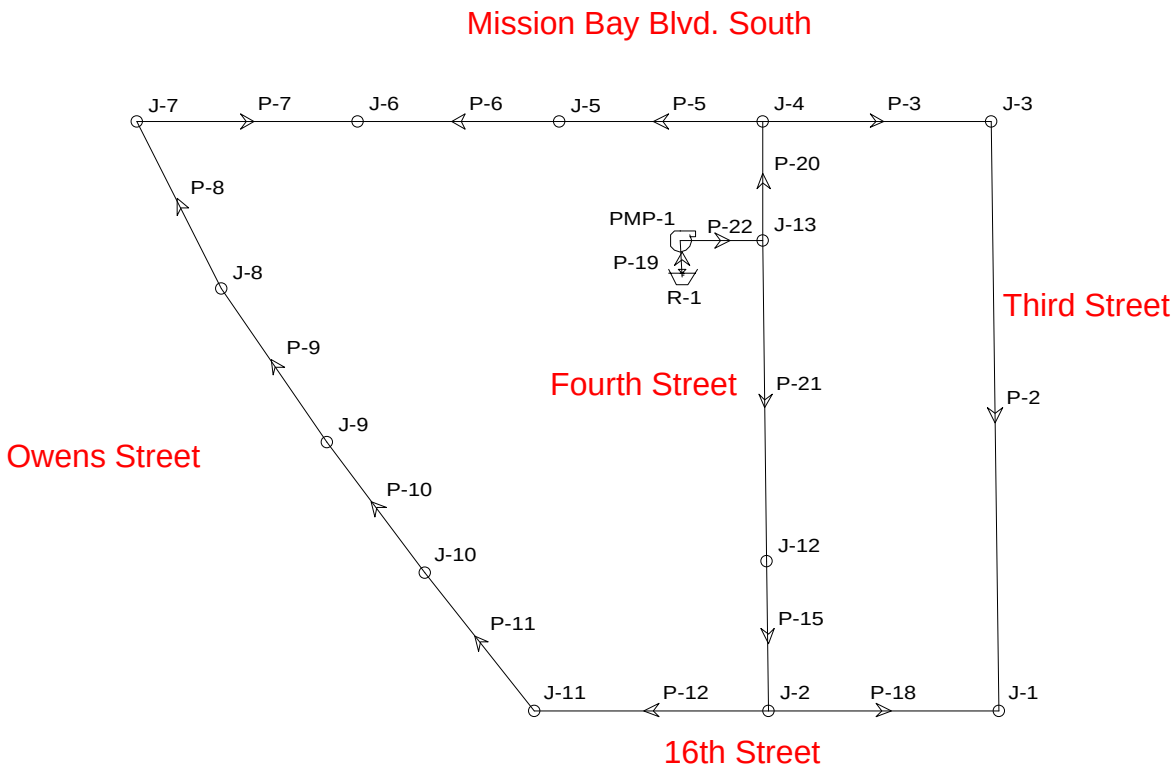
Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	102.64	44.38
16A	Demand	0.00	Fixed	0.00	102.65	44.39
16B	Demand	0.00	Fixed	0.00	102.67	44.40
J-4	Demand	0.00	Fixed	0.00	103.09	44.58
18A	Demand	0.00	Fixed	0.00	102.61	44.37
J-6	Demand	0.00	Fixed	0.00	102.56	44.35
J-7	Demand	0.00	Fixed	0.00	101.71	43.98
23A	Demand	0.00	Fixed	0.00	100.06	43.27
25B	Demand	1,500.00	Fixed	1,500.00	98.08	42.41

Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
15A/B	Demand	0.00	Fixed	0.00	58.34	25.23
16A	Demand	0.00	Fixed	0.00	58.37	25.24
16B	Demand	0.00	Fixed	0.00	58.40	25.25
J-4	Demand	0.00	Fixed	0.00	59.32	25.65
18A	Demand	0.00	Fixed	0.00	58.27	25.20
J-6	Demand	0.00	Fixed	0.00	58.17	25.16
J-7	Demand	0.00	Fixed	0.00	56.33	24.36
23A	Demand	0.00	Fixed	0.00	52.64	22.76
25B	Demand	2,320.00	Fixed	2,320.00	48.21	20.85

APPENDIX E – DOMESTIC WATER PRESSURE DROP CALCULATIONS

Steady State Analysis



Steady State Analysis
Junction Report

Node Label	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	Demand	49.00	Fixed	49.00	134.96	58.36
J-2	Demand	0.00	Fixed	0.00	134.96	58.36
J-3	Demand	0.00	Fixed	0.00	134.97	58.37
J-4	Demand	0.00	Fixed	0.00	134.98	58.37
J-5	Demand	61.00	Fixed	61.00	134.94	58.35
J-6	Demand	113.00	Fixed	113.00	134.93	58.35
J-7	Demand	0.00	Fixed	0.00	134.93	58.35
J-8	Demand	40.00	Fixed	40.00	134.93	58.35
J-9	Demand	0.00	Fixed	0.00	134.94	58.35
J-10	Demand	0.00	Fixed	0.00	134.95	58.35
J-11	Demand	0.00	Fixed	0.00	134.95	58.36
J-12	Demand	68.00	Fixed	68.00	134.97	58.36
J-13	Demand	0.00	Fixed	0.00	135.01	58.38

Pressure start in this analysis was 61 psi. The additional flows resulted in a pressure drop of 2.65 psi.

APPENDIX F – GHD WATER MODEL

Technical Memorandum

April 1, 2013

To:	Rich Laureta, Freyer & Laureta, Inc.		
Cc:			
From:	Tony Petroccitto, Robert Le		
Subject:	Mission Bay Water Model Update – Interim Condition – Increased Domestic Demand	Job no.:	8410513

INTRODUCTION

Freyer & Laureta, Inc. (F&L) retained GHD Inc. (GHD) to perform a hydraulic analysis of the low-pressure water distribution system serving the Mission Bay Development area. A computerized hydraulic model was used to identify deficiencies, and develop necessary improvements, if any, to the existing Mission Bay low-pressure water system to maintain the minimum required pressure during fire flow scenarios with the increased domestic demand. Eleven fire flow scenarios were analyzed.

This technical memorandum (TM) describes the computer model and results, and the recommended infrastructure improvements.

DESCRIPTION OF COMPUTER PROGRAM

The hydraulic analysis was prepared using the computer program WaterCAD V8i Select Series 3, by Bentley Systems, Inc. The program computes the head loss through system pipes and the pressures in system nodes for a given scenario. A scenario is a pipe network with specified demands at the nodes.

EXISTING CONDITIONS & MODEL UPDATE

The model was originally developed by GHD (formerly Winzler & Kelly) in May of 2000 and the initial results were published in the report titled “Computer Modeling and Analysis of the Low Pressure Water System, Mission Bay Development, San Francisco, California” (Winzler & Kelly MB LPW Report). The pipe network system developed by GHD, for the Blocks 8, 9, 9A site-specific analysis in August of 2011, was used as the existing pipe network system for this analysis. This version of the model is the most accurate and current representation of the existing Mission Bay low-pressure water system.

Freyer & Laureta provided updated sanitary sewer flows for the blocks in the South of Channel (SOC) area of Mission Bay Development. These sanitary sewer flows were used to estimate the current 2013

water demands. This was done by dividing the sanitary sewer flow (in total gallons per day) by a factor of 0.9 to obtain the water average-day-demand. This factor of 0.9 is consistent with previous modeling effort performed for Mission Bay. Using the F&L data, it was estimated that the water demand in the SOC increased roughly 10 - 15%. With this in consideration, all node demands in the model (NOC & SOC) were increased by 15%.

As a check to locate blocks with significant increases in demand, a demand comparison was made between the data from 1999 and 2013. The 1999 demands were estimated using land-use data from a Memo developed by Hawk Engineers, dated January 14, 1999 (see references). The water demands were calculated using this land-use data along with flow factors as listed in the Winzler & Kelly MB LPW Report.

The flow factors used are as follows:

Residential Housing:	180 gal/unit/day
Entertainment:	0.20 gal/s.f./day
Hotel:	150 gal/room/day
Commercial, Industrial:	0.23 gal/s.f./day

See calculations in Appendix A. The 2013 demands are based on the provided F&L data previously described. Seawall Lot 337 is a notable lot with significant demand increase. The F&L data shows a demand increase of 507 gallons per minute (gpm) for Seawall Lot 337. The 507 gpm was equally distributed to five nodes surrounding Seawall 337: J-31, J-33, J-37, J-38, and J-39.

MODELING CRITERIA

The modeling criterion is to achieve a minimum residual pressure of 20 pounds per square inch (psi), as required by the City and County of San Francisco (CCSF), for all nodes in the Mission Bay system during a fire flow scenario.

The design demand is typically based on the maximum hourly demand (MHD) or the maximum daily demand plus the fire flow requirements (MDD+FF), whichever is greater (see Table 1 for comparison).

Table 1 - Comparison of Demand Conditions

Demand	Flow (gpm)
MDD	4,147
MHD	4,976
MDD + FF	12,147

The Maximum Hourly Demand (MHD) is the Average Daily Demand (ADD) multiplied by a factor of 2.4. The peaking factor of 2.4 was used based on recommendations by the CCSF Water Department (CCSFWD) as stated in the Winzler & Kelly MB LPW Report.

The Maximum Daily Demand (MDD) is the Average Daily Demand (ADD) multiplied by a factor of 2.0.

The peaking factor of 2.0 was used for this localized analysis as recommended by CCSFWD. (It should be noted that the peaking factor to determine MDD for the entire Mission Bay system, and in fact, the entire CCSF water distribution system, is 1.6. However, when studying a localized, site-specific design demand, it was agreed with CCSFWD that a slightly higher peaking factor would be appropriate, and so a factor of 2.0 was adopted.)

The Fire Flow (FF) requirement is 8,000 gpm for any given block in Mission Bay. This was established in the Winzler & Kelly MB LPW Report.

For this analysis, the MDD+FF is greater than the MHD; therefore, the design demand is MDD+FF.

Design Demand = 2.0 (Peaking Factor) x Average Daily Demand + Fire Flow of 8,000 gpm

The 8,000 gpm fire flow was distributed to the nodes at the corners of the designated block. See Appendix A for the fire flow distribution for each scenario.

MODEL RESULTS

The design demand was used to model the following 11 scenarios:

Scenario 1:

Scenario 1 represents the existing system with a fire flow demand at Blocks 8, 9, 9A. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 27 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 2:

Scenario 2 represents the existing system with a fire flow demand at Blocks 26-28. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 31 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 3:

Scenario 3 represents the existing system with a fire flow demand at Blocks 36-39, X-3. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 34 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 4:

Scenario 4 represents the existing system with a fire flow demand at Blocks 41-43. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 35 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling

criterion for a minimum system pressure of 20 psig.

Scenario 5:

Scenario 5 represents the existing system with a fire flow demand at Blocks 2-7, 11, 13. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 24 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 6:

Scenario 6 represents the existing system with a fire flow demand at Block 1. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 21 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 7:

Scenario 7 represents the existing system with a fire flow demand at Fourth Street, north of Sixteenth Street. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 30 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 8:

Scenario 8 represents the existing system with a fire flow demand at Blocks 17, 20, 23. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 35 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 9:

Scenario 9 represents the existing system with a fire flow demand at Seawall Lot 337. The additional 507 gpm that represents the development at Seawall Lot 337 is not included. The maximum day demand plus fire flow can be met with the existing low-pressure water infrastructure. A minimum pressure of 22 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

Scenario 10:

Scenario 10 represents the existing system plus the additional 507 gpm, representing development at Seawall Lot 337, and a fire flow demand at Seawall Lot 337. The maximum day demand plus fire flow cannot be met with the existing low-pressure water infrastructure. A minimum pressure of 19 psi was observed (see WaterCAD output in Appendix C). This violates the modeling criterion for a minimum system pressure of 20 psig. Node J-38 exhibits a pressure of 19 psi; Node J-163, a pressure of 19 psi; and Node J-39, a pressure of 19 psi.

Scenario 11:

Scenario 11 represents the Scenario 10 system with a proposed 1,200 ft. long, 8-inch diameter water main running north-south through Seawall Lot 337. The purpose of the new main is to increase flow and hydraulic head to the nodes with lowest pressure. The maximum day demand plus fire flow can be met with the infrastructure in this scenario. A minimum pressure of 20 psi was achieved (see WaterCAD output in Appendix C). This meets the modeling criterion for a minimum system pressure of 20 psig.

REFERENCES

1. Computer Modeling and Analysis of the Low Pressure Water System, Winzler & Kelly Consulting Engineers, November 1999 (revised May 2000).
2. Preliminary Distribution of Land Use for Mission Bay, South of Channel; Hawk Engineers, Inc., January 14, 1999.
3. "Mission Bay Subsequent Environmental Impact Report," Vol. IV: Appendices, Table L.3, 1999.

APPENDICES

Appendix A – Water Demand Calculations
Appendix B – Water System Maps – Interim Condition
Appendix C – WaterCAD Output

Appendix A

WATER DEMAND CALCULATION - MISSION BAY

Only SOC block information has been provided

													wastewater calcs from F&L	*Calculated by GHD*			
Block #	**Residential**	**Retail**	**Restaurant**	**Office**	**Hotel**	**R&D**	**Large Retail**	**UCSF Research /Office/Instruction**	**UCSF Housing # of Units**	**UCSF # of People at Childcare**	**UCSF Medical Center #Beds**	**UCSF Medical Center #staff, visitors, etc.**	**Sanitary Sewer Flow (total gallons per day)**	**ADD = SS/0.90 (gpd)**	**MDD = ADDx2.0 (gpd) based on 0.90**	**MHD = ADDx2.4 (gpd) based on 0.90**	**MDD (gpm)**
1	350	50,000			250								106,250	118,056	236,111	283,333	164
2	315	10,000											54,400	60,444	120,889	145,067	84
3W	147	13,333											26,123	29,026	58,052	69,662	40
3E	116	7,222											20,334	22,593	45,186	54,224	31
4W	192	13,000											33,745	37,494	74,989	89,987	52
4E	112	3,889											19,371	21,523	43,046	51,655	30
5	170	18,889											30,506	33,895	67,790	81,348	47
6W	162												27,540	30,600	61,200	73,440	43
6E	117	9,778											20,721	23,023	46,047	55,256	32
7W	200	11,333											34,963	38,848	77,696	93,236	54
7E	80												13,600	15,111	30,222	36,267	21
8				250,000									33,750	37,500	75,000	90,000	52
9	117												19,890	22,100	44,200	53,040	31
9A	74												12,580	13,978	27,956	33,547	19
10	329	13,333											57,063	63,404	126,807	152,169	88
10A	99												16,830	18,700	37,400	44,880	26
11	190												32,300	35,889	71,778	86,133	50
12W	162												27,540	30,600	61,200	73,440	43
12E	267												45,390	50,433	100,867	121,040	70
13W	273												46,410	51,567	103,133	123,760	72
13E	150	9,667											26,322	29,246	58,493	70,191	41
26-1		13,333		205,952									28,937	32,152	64,304	77,165	45
26-2						222,339							38,687	42,986	85,971	103,165	60
26-3															-	-	
26A				312,656									42,209	46,898	93,797	112,556	65
P22		15,152											1,288	1,431	2,862	3,435	2
27		13,333		217,028									30,432	33,813	67,627	81,152	47
28				308,189									41,606	46,228	92,457	110,948	64
29		13,333		275,000									38,258	42,509	85,019	102,022	59
30		13,333		275,000									38,258	42,509	85,019	102,022	59
31		13,333		275,000									38,258	42,509	85,019	102,022	59
32		13,333		275,000									38,258	42,509	85,019	102,022	59
33		13,333		200,000									28,133	31,259	62,519	75,022	43
34		9,000		239,444									33,090	36,767	73,533	88,240	51
Hospital Site											550	9,119	227,535	252,817	505,633	606,760	351
40		16,667		700,000									95,917	106,574	213,148	255,778	148
41-43		9,444				809,003							141,569	157,299	314,598	377,518	218
X4		11,111		250,000		250,000							78,194	86,883	173,765	208,519	121
UCSF Campus																	
24A/B								384,900					66,973	74,414	148,828	178,594	103
19B								170,600					29,684	32,983	65,965	79,158	46

21B								161,200					28,049	31,165	62,331	74,797	43
17A								236,000					41,064	45,627	91,253	109,504	63
17B	(incl in 17A)																
17C								162,000					28,188	31,320	62,640	75,168	44
19A								237,000					41,238	45,820	91,640	109,968	64
23B								4,200					731	812	1,624	1,949	1
24C								154,400					26,866	29,851	59,701	71,642	41
20A									480				81,600	90,667	181,333	217,600	126
25A								265,700					46,232	51,369	102,737	123,285	71
15A									523				88,910	98,789	197,578	237,093	137
15B										235			4,700	5,222	10,444	12,533	7
16A								53,000					9,222	10,247	20,493	24,592	14
16B								236,000					41,064	45,627	91,253	109,504	63
25B								323,250					56,246	62,495	124,990	149,988	87
23A								232,200					40,403	44,892	89,784	107,741	62
18A								192,850					33,556	37,284	74,569	89,482	52
SWL 337																	
A	304						25,000						53,805	59,783	119,567	143,480	83
B				230,000			25,000						33,175	36,861	73,722	88,467	51
C				260,000			20,000						36,800	40,889	81,778	98,133	57
D				50,000			7,500						7,388	8,208	16,417	19,700	11
E				140,000			10,000						19,750	21,944	43,889	52,667	30
F	353						12,400						61,064	67,849	135,698	162,837	94
G				175,000			17,500						25,113	27,903	55,806	66,967	39
H				243,000			12,000						33,825	37,583	75,167	90,200	52
I				185,000			12,000						25,995	28,883	57,767	69,320	40
J	185						10,000						32,300	35,889	71,778	86,133	50
K	103						10,000						18,360	20,400	40,800	48,960	28
Pier 48				212,500									28,688	31,875	63,750	76,500	44
													2,687,243	***2,985,826***	***5,971,652***	***7,165,983***	***4,147***

581 seawall

4976 gpm

	F&L	
Research/Instruction	**0.174**	**gpd/gsf**
Peaking Factor	**3**	
Units on 15A	**523**	
Housing Unit	**170**	**gal/day/du**
Childcare	**235**	**people**
Childcare Rate	**20**	**gpd/person**
Retail	**0.085**	**gpd/gsf**
Office	**0.135**	**gpd/gsf**
Hospital Site		
Visitors and employees	**15**	**gpd**
Beds	**165**	**gpd/bed**

Demand comparison between 1999 estimates and the current 2013 estimates.

Block	Building area (SF) / Housing Units	Neighborhood retail (SF)	City retail (SF)	Notes	hotel/ Housing	Comm/ Indust.	Entertain.		Total gpd	Est. Water ADD	MDD (gpd)	MDD (gpm)	2013 MDD* (gpm)
1	500			rooms	75000				75,000	83,333	166,667	116	
	56000	8430		sf		12880	1686		14,566	16,184	32,369	22	164
2	228	8720		units	41040		1744		42,784	47,538	95,076	66	84
3	236	10410		units	42480		2082		44,562	49,513	99,027	69	72
4	281	7360		units	50580		1472		52,052	57,836	115,671	80	82
5	199	10410		units	35820		2082		37,902	42,113	84,227	58	47
6	281	10410		units	50580		2082		52,662	58,513	117,027	81	74
7	281			units	50580				50,580	56,200	112,400	78	75
8				units					-	-	-	-	52
9	118	4380		units	21240		876		22,116	24,573	49,147	34	31
9a	75	2770		units	13500		554		14,054	15,616	31,231	22	19
10	237	8770		units	42660		1754		44,414	49,349	98,698	69	88
10a	123	4550		units	22140		910		23,050	25,611	51,222	36	26
11	205	7600		units	36900		1520		38,420	42,689	85,378	59	50
12	396	14650		units	71280		2930		74,210	82,456	164,911	115	113
13	340	12540		units	61200		2508		63,708	70,787	141,573	98	112
X-2									-	-	-	-	
26	321,675	4513				73,985	902.6		74,888	83,209	166,417	116	104
26A	44,544	624				10,245	124.8		10,370	11,522	23,044	16	65
27	321,675	4513				73,985	902.6		74,888	83,209	166,417	116	47
28	228,882	3211				52,643	642.2		53,285	59,206	118,411	82	64
29	407,694	9242				93,770	1848.4		95,618	106,242	212,484	148	59
30	290,090	6576				66,721	1315.2		68,036	75,595	151,191	105	59
31	406,126	9206				93,409	1841.2		95,250	105,834	211,667	147	59
32	290,090	6576				66,721	1315.2		68,036	75,595	151,191	105	59
33	263,518	3697				60,609	739.4		61,349	68,165	136,330	95	43
34	211,564	2968				48,660	593.6		49,253	54,726	109,452	76	51
X-4			250,000			57,500			57,500	63,889	127,778	89	121
36	381,039	5345				87,639	1069		88,708	98,564	197,129	137	
37	72,977	1024				16,785	204.8		16,990	18,877	37,754	26	
38	374,837	5258				86,213	1051.6		87,264	96,960	193,920	135	
39	376,085	5276				86,500	1055.2		87,555	97,283	194,566	135	
40	414,427	5814				95,318	1162.8		96,481	107,201	214,402	149	148
Hospital												543	351
41	428,040	6006				98,449	1201.2		99,650	110,723	221,445	154	
42	392,196	5502				90,205	1100.4		91,305	101,451	202,901	141	
43	331,541	4651				76,254	930.2		77,185	85,761	171,521	119	

41-43												414	218
X-3			310,000			71,300			71,300	79,222	158,444	110	
subtotals									*2,074,990*	*2,305,545*	*4,611,090*	*3,202*	*2539*

*column is used to compare new 2013 calculated demands to estimates from Hawk Engineers Memo dated 1999.

Fire Flow Scenarios

Scenario 1 **Block 8, 9, 9A**

Node	Fire Flow
J-157	3000
J-31	3000
J-30	2000

Scenario 2 **Blocks 26-28**

Node	Fire Flow
J-93	2000
J-94	2000
J-144	2000
J-142	2000

Scenario 3 **Blks 36-39, X3**

Node	Fire Flow
J-4	2000
J-6	2000
J-8	2000
J-10	2000

Scenario 4 **Blks 41-43**

Node	Fire Flow
J-8	2000
J-133	2000
J-135	2000
J-136	2000

Scenario 5 **Blks 2-7, 11, 13**

Node	Fire Flow
J-153	2000
J-154	2000
J-155	2000

J-156	2000

Scenario 6 **Block 1**

Node	Fire Flow
J-35	2000
J-36	2000
J-37	2000
J-38	2000

Scenario 7 **Fourth St. North of Sixteenth St.**

Node	Fire Flow
J-86	4000
J-87	4000

Scenario 8 **Blocks 17, 20, 23**

Node	Fire Flow
J-88	2000
J-27	2000
J-16	2000
J-90	2000

Scenario 9 **Seawall 337 (without addt'l development)**

Node	Domestic Demand	Node	Fire Flow
J-31	0	J-31	2000
J-33	11	J-33	2000
J-37	62	J-38	2000
J-38	4	J-39	2000
J-39	5		

Scenario 10 **Seawall 337 (with addt'l development)**

Node	Domestic Demand	Node	Fire Flow
J-31	102	J-31	2000
J-33	113	J-33	2000
J-37	164	J-38	2000
J-38	106	J-39	2000

J-39	107		

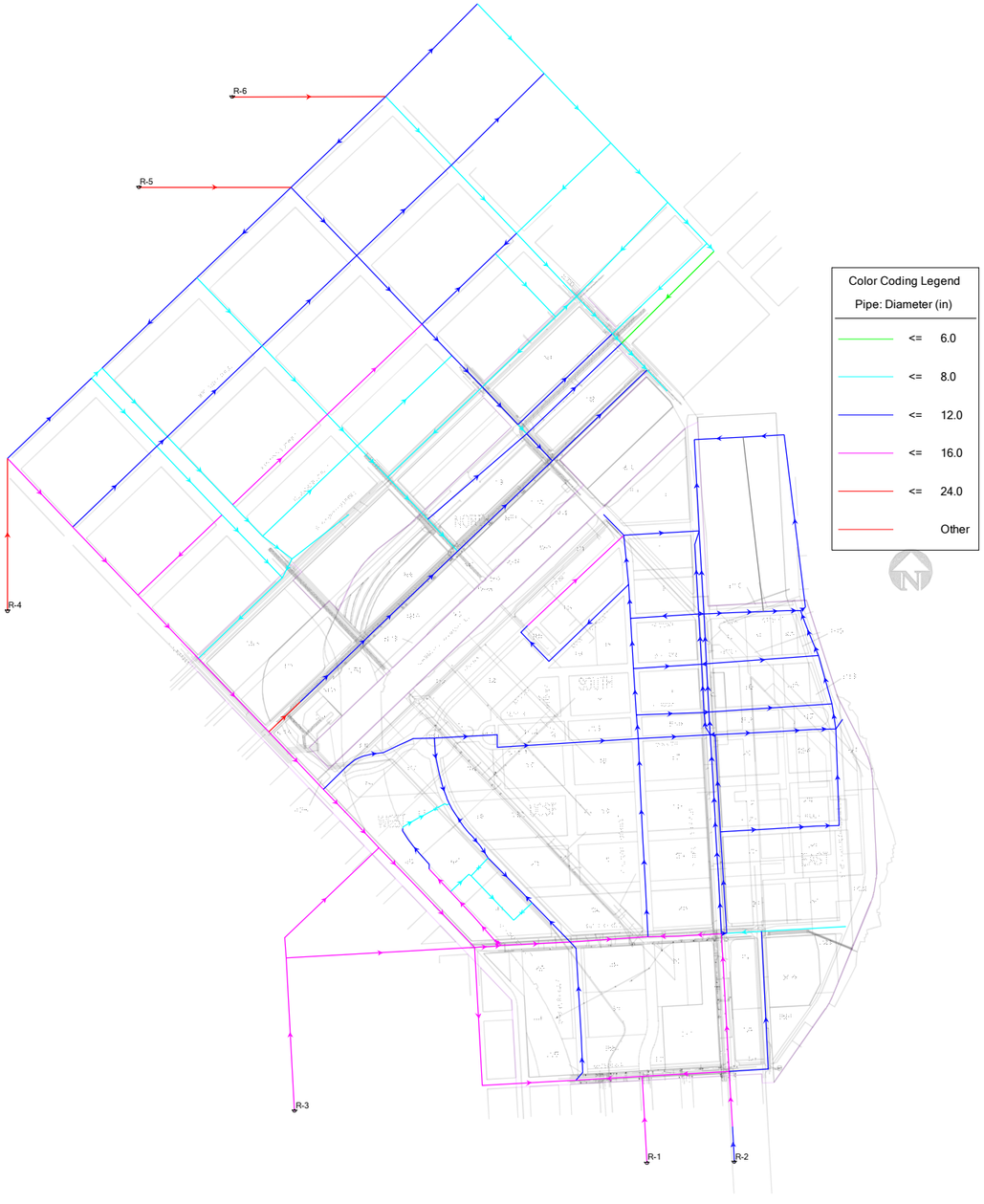
Scenario 11 **Seawall 337 with Development & Improvements**

New pipe added: Pipe P-270, 8", C=110

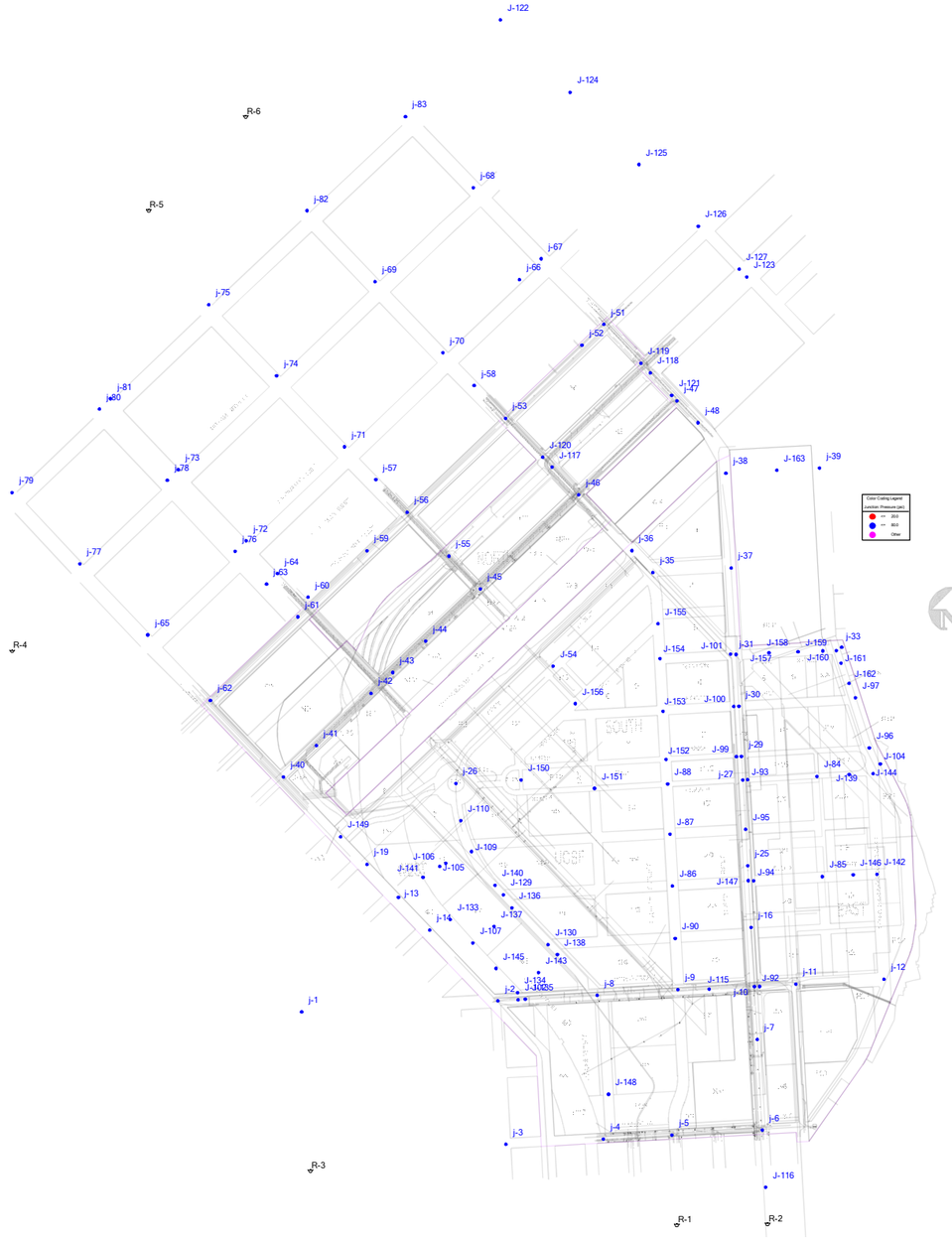
Node	Domestic Demand	Node	Fire Flow
J-31	102	J-31	2000
J-33	113	J-33	2000
J-37	164	J-38	2000
J-38	106	J-39	2000
J-39	107		

Appendix B

Water System Pipe Map - Interim Condition



Water System Node Map - Interim Condition



Appendix C

Scenario 1

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
179	j-31	99.00	Zone-1	<Collection: 1 items>	3,000	164.75	28.4	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	3,000	162.94	27.9	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	2,001	168.76	30.9	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	212.10	47.6	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.54	59.9	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	213.81	48.4	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	218.14	48.6	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	191.49	39.6	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	185.64	37.1	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	182.79	35.6	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	165.28	28.7	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	189.60	37.9	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	177.50	34.3	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	221.82	35.6	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	223.04	51.6	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	180.94	35.0	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	175.86	32.8	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	165.76	28.9	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	165.40	28.6	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	106	165.31	28.1	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	174.79	33.2	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.32	62.4	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	180.85	35.0	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	165.91	28.8	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	168.90	30.9	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	228.82	55.5	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	169.81	31.1	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	174.84	33.2	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.27	57.6	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.80	62.2	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.66	55.0	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.32	61.6	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.41	61.6	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	177.62	34.0	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	185.09	36.2	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	166.63	30.0	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	212.03	47.2	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	240.11	60.5	True	
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	226.86	53.7	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	165.95	28.6	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	165.28	28.7	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	190.81	39.7	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	166.19	29.5	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	220.30	51.2	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	220.32	50.8	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.97	61.0	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	241.05	61.0	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	220.29	50.7	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	228.69	54.8	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	174.17	32.8	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	175.79	33.2	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.58	61.3	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.51	59.9	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	196.82	40.6	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	198.96	42.8	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	220.34	50.8	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.81	58.6	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	202.79	45.4	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	206.35	45.0	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	220.32	50.8	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	245.07	62.8	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.22	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.30	59.0	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.11	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.12	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	217.17	50.3	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.93	60.5	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	221.69	50.2	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	221.82	47.3	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.93	59.4	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	187.64	37.1	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.20	58.1	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.09	62.9	True	
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.29	59.0	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	165.91	28.2	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.31	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.98	61.6	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.80	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.64	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.54	59.9	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.53	58.6	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.12	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	221.18	42.7	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.36	60.3	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.30	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	211.98	48.8	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.20	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.28	59.0	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.10	63.9	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.65	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.74	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	206.06	44.2	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.10	63.3	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.79	61.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.18	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.44	63.8	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	211.82	46.6	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.91	63.5	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	217.17	50.3	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.48	61.5	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.42	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	206.23	44.2	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	230.33	54.7	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.83	60.5	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.39	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.18	61.5	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.31	60.3	True	
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.30	59.0	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.32	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.22	61.5	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	212.04	47.6	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	220.33	51.2	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	220.34	51.2	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	220.34	51.0	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	212.06	47.6	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	212.43	47.8	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	176.20	33.4	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	181.75	35.4	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	176.65	33.2	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	182.79	35.8	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	175.86	32.8	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	228.95	55.8	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	205.57	44.4	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	169.21	30.8	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	220.81	51.0	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	211.99	47.2	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	212.01	47.2	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	220.33	50.8	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	220.33	50.8	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	166.02	29.3	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	164.17	28.3	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	165.21	28.1	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	165.79	28.5	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	166.68	29.1	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	168.16	29.8	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	165.36	28.4	True	

Appendix C

Scenario 2

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
202	J-142	100.00	Zone-1	<Collection: 1 items>	2,114	172.01	31.2	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	2,114	174.15	32.1	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	2,054	177.26	33.9	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	2,054	177.37	32.8	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	211.96	47.6	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.46	59.8	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	213.34	48.2	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	217.62	48.4	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	192.46	40.0	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	187.46	37.8	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	182.95	35.7	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	177.62	34.0	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	189.31	37.8	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	178.06	34.6	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	221.33	35.4	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	222.65	51.4	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	177.14	33.8	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	177.17	33.7	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	106	177.25	33.3	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	102	177.67	34.0	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	177.97	34.6	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.27	62.4	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	183.44	36.1	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	177.69	33.9	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	177.85	34.8	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	228.60	55.5	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	178.44	34.8	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	178.06	34.6	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.22	57.6	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.75	62.2	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.44	54.9	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.26	61.5	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.34	61.6	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	177.85	34.8	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	211.94	47.1	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	240.03	60.5	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	226.58	53.6	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	177.70	33.7	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	177.69	34.0	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	192.55	40.5	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	177.75	34.5	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	219.89	51.0	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	219.91	50.6	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.90	61.0	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	240.98	61.0	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	219.88	50.6	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	228.46	54.7	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	175.84	33.5	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	180.28	35.2	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.50	61.2	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.42	59.9	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	196.08	40.3	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	198.96	42.8	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	219.92	50.6	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.67	58.6	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	203.53	45.7	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	205.39	44.6	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	219.91	50.6	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	177.82	34.8	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	245.02	62.7	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.17	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.26	59.0	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.08	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.09	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	216.28	49.9	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.82	60.5	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	221.04	49.9	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	221.21	47.0	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.79	59.3	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	187.48	37.0	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.15	58.1	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.04	62.8	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.25	58.9	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	177.69	33.3	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.28	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.91	61.5	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.79	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.64	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.46	59.9	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.48	58.6	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.10	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	220.63	42.5	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.24	60.2	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.28	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	211.94	48.8	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.17	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.24	58.9	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.05	63.8	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.64	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.73	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	204.76	43.6	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.05	63.3	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.69	61.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.14	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.39	63.8	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	210.76	46.1	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.85	63.4	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	216.28	49.9	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.42	61.5	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.37	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	205.13	43.8	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	229.85	54.5	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.76	60.5	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.38	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.12	61.5	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.28	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.26	59.0	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.27	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.16	61.5	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	211.95	47.6	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	219.92	51.0	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	219.93	51.0	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	219.93	50.8	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	211.95	47.6	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	212.22	47.7	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	174.74	32.8	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	173.05	31.6	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	175.55	32.7	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	174.39	32.2	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	174.15	32.1	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	228.75	55.7	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	204.06	43.7	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	176.93	34.1	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	220.40	50.8	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	211.94	47.1	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	211.94	47.1	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	219.92	50.6	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	219.92	50.6	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	177.71	34.4	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	177.50	34.2	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	177.35	34.0	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	177.22	33.3	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	177.14	33.5	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	177.09	33.6	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	176.99	33.7	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	177.21	33.5	True	

Appendix C

Scenario 3

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
174	j-8	102.00	Zone-1	<Collection: 1 items>	2,345	215.47	49.1	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	2,000	218.75	48.9	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	2,000	217.34	41.1	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	2,000	214.06	47.6	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	215.47	49.1	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	240.10	60.1	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	216.37	47.9	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	213.43	49.1	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	213.33	49.0	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	213.01	48.7	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	212.76	49.2	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	213.18	48.1	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	213.00	49.7	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	219.40	34.5	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	222.88	51.5	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	213.03	48.9	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	212.94	48.9	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	212.80	49.2	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	212.72	49.1	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	106	212.72	48.7	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	102	212.81	49.2	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	212.96	49.7	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.76	62.6	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	213.32	49.0	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	212.76	49.0	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	212.88	50.0	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	230.15	56.1	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	212.89	49.7	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	212.97	49.7	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.66	57.8	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	244.22	62.4	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	233.16	55.2	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.79	61.8	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.88	61.8	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	213.01	49.3	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	213.22	48.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	212.81	49.9	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	216.94	49.3	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	240.69	60.8	True	
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	227.56	54.0	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	212.76	48.8	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	212.81	49.2	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	215.15	50.3	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	212.78	49.6	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	220.66	51.3	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	220.68	50.9	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	241.51	61.2	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	241.58	61.3	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	220.65	50.9	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	229.79	55.3	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	212.93	49.6	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	213.07	49.4	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	240.23	61.5	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	242.19	60.2	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	213.55	47.8	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	213.88	49.3	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	220.70	50.9	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	236.86	59.1	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	217.44	51.7	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	214.34	48.4	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	220.68	50.9	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	212.88	50.0	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	245.44	62.9	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.66	64.1	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.62	59.1	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.32	60.3	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.33	60.3	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	217.44	50.4	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	238.76	60.9	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	218.74	46.0	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	236.96	59.8	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	213.13	48.1	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.52	58.3	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.46	63.0	True	
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.61	59.1	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	212.76	48.5	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.49	60.4	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	241.52	61.8	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.86	61.4	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.66	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	240.10	60.2	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.96	58.8	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.33	60.3	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	238.24	60.7	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.48	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	219.22	51.9	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.40	60.3	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.60	59.1	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.52	64.0	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.72	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.81	61.4	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.52	63.5	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	239.52	61.7	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.50	58.7	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.82	64.0	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	215.79	48.3	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.90	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	245.35	63.7	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	217.44	50.4	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.91	61.7	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.81	58.4	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	214.22	47.7	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	228.20	53.7	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	240.39	60.7	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.42	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.62	61.7	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.49	60.4	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.61	59.1	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.71	58.3	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.66	61.7	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	216.70	49.6	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	220.69	51.4	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	220.70	51.4	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	220.70	51.1	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	216.42	49.5	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	215.47	49.1	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	212.96	49.3	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	213.06	48.9	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	212.97	48.9	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	213.11	48.9	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	212.94	48.9	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	230.50	56.5	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	214.06	48.0	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	212.88	49.7	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	221.08	51.1	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	218.45	50.0	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	217.79	49.7	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	220.69	50.9	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	220.69	50.9	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	212.77	49.6	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	212.81	49.5	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	212.81	49.3	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	212.81	48.7	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	212.81	48.9	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	212.82	49.1	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	212.86	49.2	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	212.72	48.9	True	

Appendix C

Scenario 4

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
174	j-8	102.00	Zone-1	<Collection: 1 items>	2,345	212.33	47.7	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	2,000	211.26	47.3	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	2,000	213.41	48.0	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	2,000	208.45	46.1	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	208.96	46.3	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.17	59.7	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	216.74	48.0	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	212.86	48.8	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	212.83	48.8	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	213.00	48.7	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	212.51	49.1	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	213.54	48.3	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	212.81	49.6	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	219.60	34.6	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	219.43	50.1	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	213.06	48.9	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	212.77	48.8	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	212.55	49.1	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	212.47	49.0	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	106	212.47	48.6	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	102	212.56	49.1	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	212.73	49.6	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.04	62.3	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	212.83	48.8	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	212.52	48.9	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	212.64	49.9	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	227.55	55.0	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	212.64	49.6	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	212.73	49.6	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.01	57.5	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.53	62.1	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	230.90	54.3	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.01	61.4	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.10	61.5	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	212.82	49.2	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	213.47	48.4	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	212.56	49.8	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	209.61	46.1	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	239.72	60.4	True	
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	224.65	52.7	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	212.52	48.7	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	212.56	49.1	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	213.48	49.5	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	212.53	49.5	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	211.83	47.5	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	211.32	46.9	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.62	60.8	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	240.70	60.9	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	211.82	47.1	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	227.15	54.1	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	212.73	49.5	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	212.74	49.2	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.16	61.1	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.06	59.7	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	214.38	48.2	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	213.15	49.0	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	212.55	47.4	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.12	58.3	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	214.34	50.4	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	213.46	48.1	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	211.31	46.9	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	212.64	49.9	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	244.83	62.7	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	244.94	63.8	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.09	58.9	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	248.97	60.1	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	248.98	60.1	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	221.31	52.1	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.39	60.3	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	223.57	51.0	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	222.79	47.7	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.25	59.1	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	213.38	48.2	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	245.99	58.0	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	244.84	62.7	True	
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.08	58.9	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	212.52	48.4	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.19	60.2	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.62	61.4	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.76	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.63	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.17	59.8	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.25	58.5	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	248.99	60.1	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	219.81	42.2	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	236.78	60.0	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.18	60.2	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	215.01	50.1	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.07	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.07	58.9	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	244.83	63.7	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.60	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.70	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	215.49	48.2	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	244.83	63.2	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.31	61.1	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	245.97	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.19	63.7	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	218.47	49.4	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.62	63.3	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	221.31	52.1	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.19	61.4	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.16	58.1	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	214.29	47.7	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	231.69	55.2	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.47	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.37	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	242.89	61.4	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.19	60.2	True	
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.09	58.9	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.06	58.0	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	242.93	61.4	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	209.09	46.3	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	213.20	48.1	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	209.61	46.6	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	212.78	49.2	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	213.14	48.9	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	212.79	48.8	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	213.24	49.0	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	212.77	48.8	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	227.93	55.3	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	215.48	48.7	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	212.64	49.6	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	214.45	48.2	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	213.09	47.6	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	211.42	46.9	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	211.86	47.1	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	211.27	46.8	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	212.52	49.5	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	212.56	49.4	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	212.56	49.2	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	212.56	48.6	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	212.56	48.8	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	212.58	49.0	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	212.62	49.1	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	212.47	48.8	True	

Appendix C

Scenario 5

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
239	J-153	98.00	Zone-1	<Collection: 1 items>	2,066	165.43	29.2	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	2,053	159.67	27.0	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	2,039	156.28	25.2	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	2,000	154.32	24.3	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	211.50	47.4	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.41	59.8	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	213.23	48.1	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	217.64	48.4	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	190.43	39.1	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	184.41	36.5	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	181.80	35.2	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	163.23	27.8	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	188.70	37.5	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	176.43	33.9	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	221.37	35.4	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	222.61	51.4	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	180.06	34.6	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	175.00	32.4	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	166.51	29.2	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	164.80	28.3	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	106	164.10	27.6	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	102	165.23	28.7	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	173.73	32.8	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.23	62.3	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	179.47	34.4	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	156.91	24.9	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	168.34	30.7	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	228.47	55.4	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	173.75	32.8	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.18	57.5	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.71	62.2	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.37	54.9	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.21	61.5	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.30	61.6	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	176.57	33.6	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	184.19	35.8	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	211.41	46.9	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	239.98	60.5	True	
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	226.48	53.5	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	155.85	24.2	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	165.01	28.6	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	189.67	39.2	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	219.83	51.0	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	219.85	50.6	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.85	60.9	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	240.93	61.0	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	219.82	50.5	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	228.34	54.6	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	173.40	32.4	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	173.99	32.4	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.44	61.2	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.36	59.9	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	196.01	40.3	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	198.08	42.4	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	219.87	50.6	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.58	58.5	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	201.94	45.0	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	205.65	44.7	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	219.85	50.6	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	168.46	30.7	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	244.99	62.7	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.13	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.23	58.9	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.06	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.07	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	216.65	50.0	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.75	60.5	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	221.23	50.0	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	221.37	47.1	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.70	59.3	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	186.71	36.7	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.13	58.1	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.00	62.8	True	
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.22	58.9	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	156.91	24.3	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.27	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.86	61.5	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.79	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.64	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.41	59.9	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.44	58.6	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.08	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	220.72	42.5	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.16	60.2	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.26	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	211.35	48.5	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.16	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.21	58.9	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.01	63.8	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.63	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.73	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	205.37	43.9	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.01	63.2	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.63	61.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.11	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.36	63.8	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	211.21	46.3	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.81	63.4	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	216.65	50.0	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.38	61.4	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.33	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	205.53	43.9	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	230.00	54.5	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.71	60.4	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.38	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.08	61.5	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.27	60.3	True	
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.23	58.9	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.23	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.12	61.5	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	211.43	47.3	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	219.86	51.0	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	219.87	51.0	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	219.87	50.8	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	211.44	47.4	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	211.83	47.5	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	175.30	33.0	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	180.86	35.0	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	175.70	32.8	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	181.89	35.4	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	175.00	32.4	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	228.61	55.6	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	204.87	44.1	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	169.14	30.8	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	220.35	50.8	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	211.37	46.9	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	211.39	46.9	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	219.86	50.6	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	219.86	50.6	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	165.68	29.1	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	166.08	29.1	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	166.41	28.6	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	166.60	28.9	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	167.26	29.4	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	168.36	29.9	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	164.48	28.0	True	

Appendix C

Scenario 6

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
151	j-35	99.42	Zone-1	<Collection: 1 items>	2,075	153.83	23.5	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	2,063	156.13	24.7	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	2,005	154.33	23.4	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	2,000	149.34	21.0	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	212.68	47.9	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.66	59.9	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	214.37	48.6	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	218.64	48.9	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	192.43	40.0	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	186.68	37.5	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	183.95	36.1	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	190.62	38.3	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	178.78	34.9	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	222.27	35.8	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	223.46	51.8	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	182.15	35.5	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	177.18	33.4	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	165.47	28.8	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	158.05	25.4	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	102	164.94	28.5	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	176.16	33.8	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.41	62.4	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	181.98	35.5	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	170.62	31.7	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	229.15	55.7	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	170.62	31.4	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	176.20	33.8	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.35	57.6	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.89	62.3	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.94	55.2	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.42	61.6	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.51	61.7	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	178.90	34.6	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	186.22	36.7	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	164.26	28.9	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	212.61	47.4	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	240.23	60.6	True	
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	227.22	53.8	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	154.50	23.6	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	164.90	28.5	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	191.76	40.1	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	158.11	26.0	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	220.77	51.4	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	220.78	51.0	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	241.08	61.0	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	241.16	61.1	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	220.75	50.9	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	229.03	54.9	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	175.52	33.4	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	176.96	33.7	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.72	61.3	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.65	60.0	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	197.71	41.0	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	199.78	43.2	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	220.80	51.0	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	236.03	58.7	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	203.54	45.7	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	207.05	45.3	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	220.79	51.0	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	170.62	31.7	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	245.14	62.8	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.31	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.37	59.0	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.16	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.16	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	217.71	50.5	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	238.11	60.6	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	222.15	50.4	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	222.27	47.5	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	236.15	59.5	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	188.70	37.5	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.26	58.2	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.16	62.9	True	
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.36	59.0	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.35	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	241.09	61.6	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.81	61.4	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.65	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.66	60.0	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.63	58.7	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.17	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	221.64	42.9	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.55	60.4	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.34	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	212.56	49.1	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.24	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.35	59.0	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.19	63.9	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.66	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.76	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	206.78	44.5	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.19	63.3	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.95	61.4	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.25	58.6	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.52	63.9	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	212.44	46.8	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	245.00	63.5	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	217.71	50.5	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.57	61.5	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.50	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	206.94	44.5	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	230.66	54.8	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.95	60.6	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.39	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.27	61.6	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.35	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.36	59.0	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.40	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.31	61.6	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	212.62	47.9	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	220.80	51.4	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	220.80	51.4	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	220.81	51.2	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	212.64	47.9	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	213.01	48.0	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	177.50	34.0	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	182.94	35.9	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	177.95	33.7	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	183.96	36.3	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	177.18	33.4	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	229.28	55.9	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	206.30	44.7	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	170.62	31.4	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	221.27	51.2	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	212.58	47.4	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	212.59	47.4	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	220.80	51.0	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	220.79	51.0	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	155.63	24.8	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	165.23	28.9	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	165.48	28.8	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	165.69	28.3	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	165.80	28.6	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	167.07	29.3	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	169.14	30.3	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	156.36	24.5	True	

Appendix C

Scenario 7

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
212	J-86	100.00	Zone-1	<Collection: 3 items>	4,316	169.42	30.0	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	4,205	169.42	30.0	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	212.04	47.6	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.46	59.8	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	213.13	48.1	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	217.53	48.4	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	190.64	39.0	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	186.84	38.0	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	194.68	40.1	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	187.74	38.7	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	221.29	35.4	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	222.58	51.4	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	190.37	39.1	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	187.87	38.0	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	186.95	38.1	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	186.83	37.9	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	106	186.82	37.5	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	102	186.93	38.0	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	187.37	38.7	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.26	62.3	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	186.11	37.3	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	186.83	37.8	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	187.06	38.8	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	228.59	55.4	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	186.82	38.4	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	187.34	38.7	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.21	57.6	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.75	62.2	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.41	54.9	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.25	61.5	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.34	61.6	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	187.92	38.5	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	192.58	39.4	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	186.83	38.7	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	212.05	47.2	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	240.03	60.5	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	226.54	53.5	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	186.83	37.6	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	186.92	38.0	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	194.40	41.3	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	186.83	38.4	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	219.78	51.0	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	219.80	50.5	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.90	61.0	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	240.98	61.0	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	219.77	50.5	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	228.44	54.7	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	187.52	38.6	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	186.65	37.9	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.50	61.2	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.42	59.9	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	199.16	41.6	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	187.09	37.7	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	219.82	50.5	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.67	58.6	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	204.41	46.1	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	204.48	44.2	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	219.80	50.5	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	187.07	38.8	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	245.02	62.7	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.16	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.26	59.0	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.08	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.09	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	216.49	50.0	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.82	60.5	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	221.08	49.9	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	221.23	47.0	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.79	59.3	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	193.52	39.6	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.15	58.1	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.04	62.8	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.25	58.9	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	186.83	37.2	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.28	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.90	61.5	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.79	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.64	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.46	59.9	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.48	58.6	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.10	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	220.61	42.5	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.24	60.2	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.27	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	212.08	48.8	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.17	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.24	58.9	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.05	63.8	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.64	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.73	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	204.92	43.7	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.05	63.3	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.69	61.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.14	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.39	63.8	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	210.87	46.2	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.85	63.4	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	216.49	50.0	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.42	61.5	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.37	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	204.66	43.6	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	229.88	54.5	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.76	60.5	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.38	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.12	61.5	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.28	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.25	59.0	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.27	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.16	61.5	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	212.05	47.6	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	219.81	51.0	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	219.82	51.0	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	219.82	50.8	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	212.05	47.6	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	212.25	47.7	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	187.88	38.5	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	190.79	39.3	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	187.89	38.0	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	191.35	39.5	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	187.87	38.0	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	228.74	55.7	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	204.71	44.0	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	187.15	38.6	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	220.30	50.7	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	212.07	47.2	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	212.06	47.2	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	219.81	50.5	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	219.81	50.5	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	186.83	38.3	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	186.94	38.3	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	186.95	38.1	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	186.96	37.5	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	186.96	37.7	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	187.01	37.9	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	187.10	38.0	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	186.83	37.7	True	

Appendix C

Scenario 8

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
159	j-27	98.18	Zone-1	<Collection: 2 items>	2,121	188.13	38.9	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	2,076	188.49	38.3	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	2,017	189.63	37.5	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	2,017	193.01	40.2	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	212.35	47.7	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.50	59.9	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	213.25	48.1	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	217.53	48.4	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	190.77	39.3	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	189.40	38.7	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	188.30	38.0	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	187.96	38.5	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	188.82	37.6	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	221.27	35.4	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	222.62	51.4	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	190.70	39.2	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	188.40	38.2	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	113	188.00	38.5	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	107	187.92	38.3	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	106	187.92	37.9	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	102	188.01	38.5	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	188.12	39.0	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.29	62.4	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	187.96	38.3	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	188.08	39.2	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	228.68	55.5	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	188.09	39.0	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	188.12	39.0	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.24	57.6	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.78	62.2	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.46	54.9	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.29	61.6	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.37	61.6	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	188.35	38.7	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	192.76	39.5	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	188.01	39.2	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	212.38	47.3	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	240.07	60.5	True	
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	226.61	53.6	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	187.96	38.1	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	188.01	38.5	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	196.14	42.0	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	187.98	38.9	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	219.85	51.0	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	219.86	50.6	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.93	61.0	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	241.01	61.0	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	219.83	50.5	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	228.53	54.7	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	188.23	38.9	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	188.25	38.6	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.54	61.2	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.46	59.9	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	219.88	50.6	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.74	58.6	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	205.39	46.5	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	204.41	44.2	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	219.87	50.6	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	188.08	39.2	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	245.04	62.8	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.19	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.28	59.0	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.10	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.10	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	216.24	49.9	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.88	60.5	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	220.92	49.8	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	221.11	47.0	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.86	59.4	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	188.67	37.5	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.17	58.1	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.06	62.8	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.27	59.0	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	187.96	37.7	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.29	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.94	61.5	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.80	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.64	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.50	59.9	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.51	58.6	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.11	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	220.54	42.5	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.30	60.3	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.29	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	212.48	49.0	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.19	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.26	59.0	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.07	63.8	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.64	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.74	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	204.38	43.4	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.07	63.3	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.74	61.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.16	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.41	63.8	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	210.47	46.0	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.88	63.5	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	216.24	49.9	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.45	61.5	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.39	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	204.40	43.4	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	229.77	54.4	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.80	60.5	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.38	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.15	61.5	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.29	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.28	59.0	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.29	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.19	61.5	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	212.38	47.8	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	219.88	51.0	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	219.88	51.0	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	219.89	50.8	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	212.37	47.8	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	212.52	47.8	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	188.39	38.7	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	191.10	39.4	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	188.38	38.2	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	191.62	39.6	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	188.40	38.2	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	228.85	55.7	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	204.19	43.8	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	188.09	39.0	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	220.36	50.8	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	212.45	47.4	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	212.42	47.3	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	219.88	50.6	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	219.87	50.6	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	187.97	38.8	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	188.01	38.8	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	188.01	38.6	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	188.01	38.0	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	188.01	38.2	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	188.03	38.3	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	188.07	38.4	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	187.92	38.2	True	

Appendix C

Scenario 9

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
169	j-38	100.25	Zone-1	<Collection: 1 items>	2,004	152.94	22.8	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	152.92	23.0	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	2,005	152.90	23.2	True	
127	j-33	99.00	Zone-1	<Collection: 1 items>	2,011	164.92	28.5	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	166.72	29.0	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	167.14	29.0	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	167.90	29.9	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	168.65	30.0	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	170.03	30.0	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	62	168.72	30.2	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	170.10	30.4	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	168.80	30.5	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	170.03	30.5	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	2,000	169.83	30.6	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	170.17	30.8	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	170.24	31.2	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	170.55	31.4	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	171.84	31.4	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	171.34	32.0	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	174.11	32.9	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	175.27	33.4	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	174.89	33.5	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	174.91	33.5	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	179.17	34.9	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	180.79	35.0	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	180.79	35.0	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	181.57	35.3	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	180.86	35.4	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	179.99	35.5	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	180.04	35.5	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	181.12	35.5	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	182.54	36.1	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	223.60	36.4	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	182.43	36.5	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	185.51	37.0	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	185.53	37.0	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	186.28	37.3	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	187.28	37.5	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	187.26	37.8	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	189.42	38.0	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	191.76	38.8	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	189.90	38.9	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	193.58	39.6	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	195.31	41.2	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	194.73	41.4	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	200.30	42.1	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	223.00	43.5	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	202.27	44.2	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	208.90	45.4	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	209.05	45.5	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	208.45	45.6	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	209.16	46.2	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	205.82	46.7	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	214.29	47.6	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	223.63	48.1	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	214.35	48.2	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	214.36	48.2	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	214.37	48.2	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	214.38	48.6	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	214.39	48.6	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	214.43	48.6	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	214.74	48.8	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	216.06	49.3	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	220.12	49.5	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	214.33	49.8	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	223.52	51.0	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	219.30	51.2	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	219.30	51.2	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	222.14	51.5	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	222.17	51.6	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	222.17	51.6	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	222.18	51.6	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	222.19	51.6	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	222.19	51.6	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	222.63	51.8	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	222.19	51.8	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	222.16	52.0	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	222.19	52.0	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	222.19	52.0	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	224.73	52.4	True	
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	228.31	54.3	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	231.65	55.2	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	230.03	55.4	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	233.79	55.5	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	230.15	56.1	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	230.28	56.4	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.60	57.7	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.47	58.2	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.65	58.3	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.75	58.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.45	58.7	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.90	58.8	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	236.70	59.0	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.56	59.1	True	
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.56	59.1	True	
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.57	59.1	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.57	59.1	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	236.81	59.8	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	240.02	60.1	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	240.02	60.1	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	242.09	60.2	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.29	60.3	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.30	60.3	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.30	60.3	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.37	60.3	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.46	60.3	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.46	60.3	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.46	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

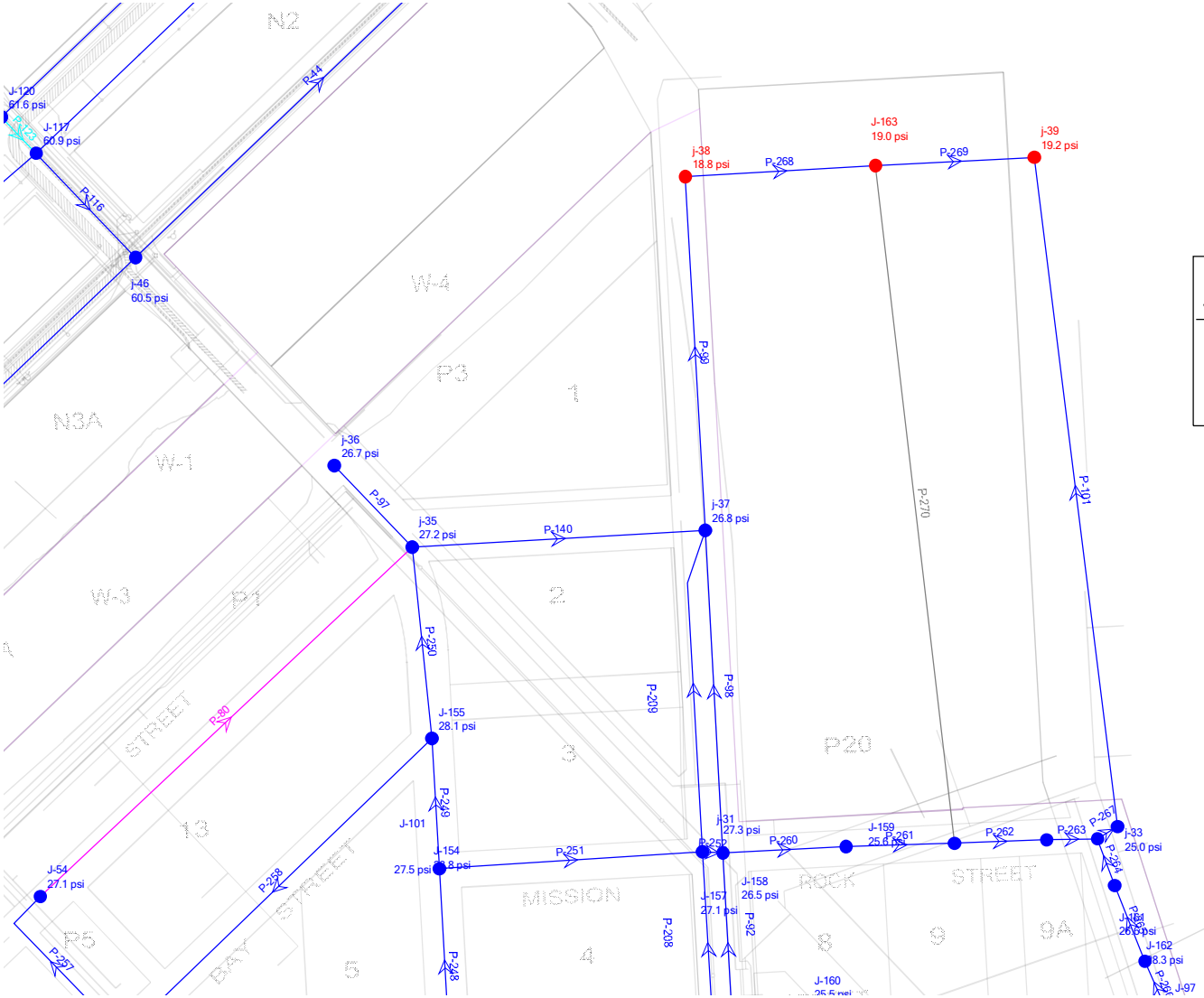
Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	238.11	60.6	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	240.31	60.7	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	240.61	60.8	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	238.64	60.8	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	241.43	61.2	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	241.50	61.2	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.71	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.80	61.4	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.85	61.4	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	240.14	61.5	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.41	61.6	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	239.42	61.6	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.85	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.55	61.7	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.59	61.7	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.66	61.7	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.72	61.8	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	241.44	61.8	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.81	61.8	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.90	61.8	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	244.16	62.4	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.69	62.5	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	245.38	62.9	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.40	63.0	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.46	63.4	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	245.29	63.6	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.76	64.0	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.46	64.0	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.59	64.1	True	

Appendix C

Scenario 10

Scenario: Fire Flow Scenario 10



Color Coding Legend
Junction: Pressure (psi)

	<=	20.0
	<=	80.0
		Other

Color Coding Legend
Pipe: Diameter (in)

	<=	6.0
	<=	8.0
	<=	12.0
	<=	16.0
	<=	24.0
		Other

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
127	j-33	99.00	Zone-1	<Collection: 1 items>	2,113	156.86	25.0	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	2,107	143.62	19.2	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	2,106	143.66	18.8	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	2,102	162.20	27.3	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	211.52	47.4	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.42	59.8	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	213.24	48.1	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	217.64	48.4	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	190.53	39.2	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	184.57	36.6	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	181.67	35.1	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	160.87	26.8	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	188.60	37.5	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	176.27	33.8	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	221.37	35.4	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	222.61	51.4	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	179.70	34.5	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	174.45	32.2	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	173.56	32.7	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.23	62.3	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	179.68	34.5	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	162.39	27.2	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	167.90	30.5	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	228.48	55.4	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	168.29	30.4	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	173.61	32.7	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.18	57.5	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.71	62.2	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.38	54.9	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.22	61.5	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.30	61.6	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	176.39	33.5	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	183.97	35.7	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	163.89	28.8	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	211.44	46.9	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	239.98	60.5	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	226.49	53.5	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	162.47	27.1	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	162.58	27.5	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	189.83	39.3	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	162.98	28.1	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	219.84	51.0	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	219.85	50.6	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.85	60.9	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	240.94	61.0	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	219.82	50.5	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	228.35	54.6	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	172.66	32.1	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	174.52	32.7	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.44	61.2	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.36	59.9	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	195.94	40.2	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	198.13	42.5	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	219.87	50.6	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.58	58.5	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	202.03	45.0	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	205.63	44.7	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	219.85	50.6	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	167.87	30.5	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	244.99	62.7	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.13	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.23	58.9	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.07	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.07	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	216.64	50.0	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.75	60.5	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	221.22	50.0	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	221.36	47.1	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.70	59.3	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	186.61	36.6	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.13	58.1	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.01	62.8	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.22	58.9	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	162.39	26.7	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.27	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.86	61.5	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.79	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.64	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.42	59.9	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.44	58.6	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.08	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	220.71	42.5	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.17	60.2	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.26	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	211.38	48.5	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.16	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.21	58.9	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.01	63.8	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.63	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.73	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	205.34	43.8	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.01	63.2	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.63	61.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.11	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.36	63.8	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	211.19	46.3	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.81	63.4	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	216.64	50.0	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.38	61.4	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.33	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	205.51	43.9	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	229.99	54.5	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.71	60.4	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.38	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.08	61.5	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.27	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

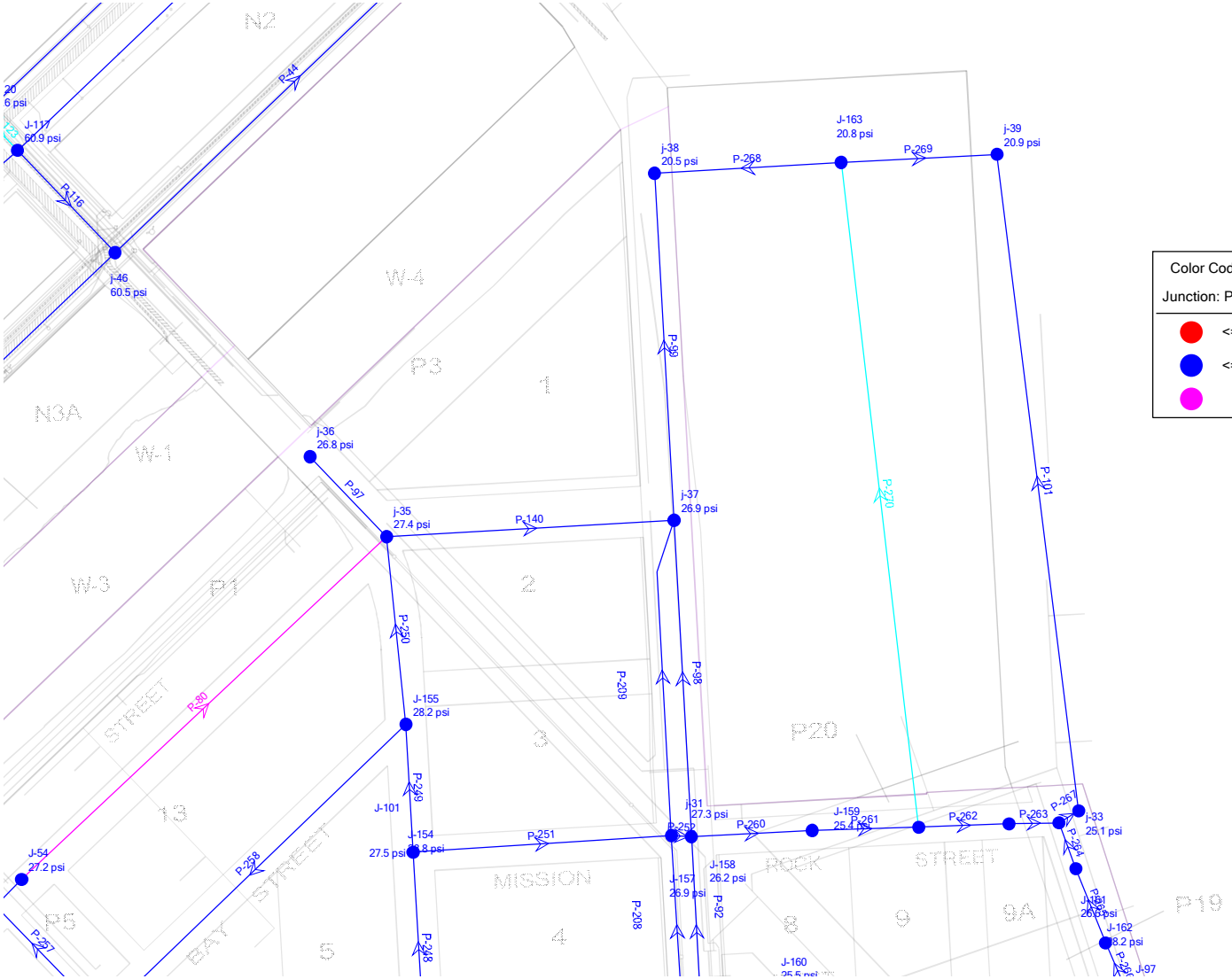
Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.23	58.9	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.23	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.13	61.5	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	211.45	47.4	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	219.87	51.0	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	219.87	51.0	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	219.87	50.8	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	211.47	47.4	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	211.85	47.5	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	174.82	32.8	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	180.52	34.8	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	175.32	32.6	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	181.59	35.3	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	174.45	32.2	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	228.62	55.6	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	204.84	44.1	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	167.02	29.9	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	220.35	50.8	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	211.40	46.9	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	211.42	46.9	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	219.87	50.6	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	219.86	50.6	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	162.63	27.9	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	161.09	27.1	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	160.12	26.5	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	159.30	25.6	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	158.84	25.5	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	160.98	26.6	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	164.51	28.3	True	

Appendix C

Scenario 11

Scenario: FF Scenario 11- Seawall Impt 1



Color Coding Legend
Junction: Pressure (psi)

	<=	20.0
	<=	80.0
		Other

Color Coding Legend
Pipe: Diameter (in)

	<=	6.0
	<=	8.0
	<=	12.0
	<=	16.0
	<=	24.0
		Other

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
127	j-33	99.00	Zone-1	<Collection: 1 items>	2,113	156.95	25.1	True	
163	j-39	99.29	Zone-1	<Collection: 1 items>	2,107	147.49	20.9	True	
169	j-38	100.25	Zone-1	<Collection: 1 items>	2,106	147.68	20.5	True	
179	j-31	99.00	Zone-1	<Collection: 1 items>	2,102	162.21	27.3	True	
195	J-130	102.00	Zone-1	<Collection: 2 items>	851	211.52	47.4	True	
158	j-47	101.16	Zone-1	<Collection: 1 items>	752	239.42	59.8	True	
174	j-8	102.00	Zone-1	<Collection: 1 items>	345	213.24	48.1	True	
235	J-148	105.70	Zone-1	<Collection: 1 items>	345	217.64	48.4	True	
212	J-86	100.00	Zone-1	<Collection: 3 items>	316	190.54	39.2	True	
213	J-87	100.00	Zone-1	<Collection: 2 items>	205	184.57	36.6	True	
219	J-95	100.50	Zone-1	<Collection: 2 items>	205	181.67	35.1	True	
141	j-37	99.00	Zone-1	<Collection: 1 items>	164	161.27	26.9	True	
206	J-147	102.00	Zone-1	<Collection: 3 items>	155	188.60	37.5	True	
159	j-27	98.18	Zone-1	<Collection: 2 items>	121	176.27	33.8	True	
126	j-3	139.55	Zone-1	<Collection: 1 items>	115	221.37	35.4	True	
130	j-2	103.73	Zone-1	<Collection: 1 items>	115	222.61	51.4	True	
202	J-142	100.00	Zone-1	<Collection: 1 items>	114	179.69	34.5	True	
204	J-144	100.00	Zone-1	<Collection: 1 items>	114	174.44	32.2	True	
116	j-29	98.00	Zone-1	<Collection: 1 items>	95	173.56	32.7	True	
137	j-56	99.15	Zone-1	<Collection: 1 items>	92	243.23	62.3	True	
214	J-88	100.00	Zone-1	<Collection: 1 items>	76	179.68	34.5	True	
151	j-35	99.42	Zone-1	<Collection: 1 items>	75	162.64	27.4	True	
224	J-100	97.39	Zone-1	<Collection: 1 items>	74	167.90	30.5	True	
153	j-19	100.43	Zone-1	<Collection: 1 items>	69	228.48	55.4	True	
239	J-153	98.00	Zone-1	<Collection: 1 items>	66	168.32	30.4	True	
223	J-99	98.00	Zone-1	<Collection: 1 items>	61	173.61	32.7	True	
119	j-51	111.18	Zone-1	<Collection: 1 items>	57	244.18	57.5	True	
170	j-53	100.00	Zone-1	<Collection: 1 items>	57	243.71	62.2	True	
172	j-1	105.47	Zone-1	<Collection: 1 items>	57	232.38	54.9	True	
185	J-119	100.00	Zone-1	<Collection: 1 items>	57	242.22	61.5	True	
186	J-120	100.00	Zone-1	<Collection: 1 items>	57	242.30	61.6	True	
217	J-93	99.00	Zone-1	<Collection: 1 items>	54	176.39	33.5	True	
218	J-94	101.50	Zone-1	<Collection: 1 items>	54	183.96	35.7	True	
240	J-154	97.38	Zone-1	<Collection: 1 items>	53	164.01	28.8	True	
231	J-140	103.00	Zone-1	<Collection: 2 items>	52	211.44	46.9	True	
128	j-46	100.18	Zone-1	<Collection: 1 items>	46	239.98	60.5	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
132	j-14	102.78	Zone-1	<Collection: 1 items>	44	226.49	53.5	True	
207	J-54	99.88	Zone-1	<Collection: 1 items>	42	162.71	27.2	True	
225	J-101	99.00	Zone-1	<Collection: 1 items>	40	162.62	27.5	True	
237	J-151	98.98	Zone-1	<Collection: 1 items>	39	189.83	39.3	True	
241	J-155	98.03	Zone-1	<Collection: 1 items>	39	163.18	28.2	True	
200	J-137	102.00	Zone-1	<Collection: 2 items>	35	219.84	51.0	True	
230	J-105	103.00	Zone-1	<Collection: 2 items>	35	219.85	50.6	True	
183	J-117	100.00	Zone-1	<Collection: 1 items>	35	240.85	60.9	True	
184	J-118	100.00	Zone-1	<Collection: 1 items>	35	240.94	61.0	True	
233	J-143	103.00	Zone-1	<Collection: 2 items>	30	219.82	50.5	True	
152	j-13	102.06	Zone-1	<Collection: 1 items>	29	228.35	54.6	True	
221	J-96	98.40	Zone-1	<Collection: 1 items>	28	172.64	32.1	True	
238	J-152	99.01	Zone-1	<Collection: 1 items>	28	174.53	32.7	True	
123	j-45	97.99	Zone-1	<Collection: 1 items>	18	239.44	61.2	True	
175	j-62	103.00	Zone-1	<Collection: 1 items>	18	241.36	59.9	True	
156	j-16	102.96	Zone-1	<Collection: 1 items>	17	195.94	40.2	True	
215	J-90	100.00	Zone-1	<Collection: 1 items>	17	198.13	42.5	True	
234	J-145	103.00	Zone-1	<Collection: 1 items>	12	219.87	50.6	True	
134	j-40	100.26	Zone-1	<Collection: 1 items>	12	235.58	58.5	True	
236	J-150	97.92	Zone-1	<Collection: 1 items>	11	202.03	45.0	True	
140	j-9	102.35	Zone-1	<Collection: 1 items>	8	205.63	44.7	True	
220	J-106	103.00	Zone-1	<Collection: 2 items>	5	219.85	50.6	True	
155	j-30	97.39	Zone-1	<Collection: 1 items>	1	167.87	30.5	True	
112	j-58	100.00	Zone-1	<Collection: 1 items>	0	244.99	62.7	True	
113	j-63	97.54	Zone-1	<Collection: 1 items>	0	245.13	63.9	True	
114	j-72	110.00	Zone-1	<Collection: 1 items>	0	246.23	58.9	True	
115	j-77	110.00	Zone-1	<Collection: 1 items>	0	249.07	60.2	True	
117	j-78	110.00	Zone-1	<Collection: 1 items>	0	249.07	60.2	True	
118	j-11	101.00	Zone-1	<Collection: 1 items>	0	216.64	50.0	True	
120	j-43	98.00	Zone-1	<Collection: 1 items>	0	237.75	60.5	True	
121	j-6	105.73	Zone-1	<Collection: 1 items>	0	221.22	50.0	True	
122	j-5	112.52	Zone-1	<Collection: 1 items>	0	221.36	47.1	True	
124	j-41	98.67	Zone-1	<Collection: 1 items>	0	235.70	59.3	True	
125	j-25	102.00	Zone-1	<Collection: 1 items>	0	186.60	36.6	True	
129	j-67	111.86	Zone-1	<Collection: 1 items>	0	246.13	58.1	True	
131	j-57	99.81	Zone-1	<Collection: 1 items>	0	245.01	62.8	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
133	j-71	110.00	Zone-1	<Collection: 1 items>	0	246.23	58.9	True	
135	j-36	100.76	Zone-1	<Collection: 1 items>	0	162.64	26.8	True	
136	j-68	110.00	Zone-1	<Collection: 1 items>	0	249.27	60.3	True	
138	j-55	98.72	Zone-1	<Collection: 1 items>	0	240.86	61.5	True	
139	j-75	110.00	Zone-1	<Collection: 1 items>	0	251.79	61.3	True	
142	j-79	110.00	Zone-1	<Collection: 1 items>	0	252.64	61.7	True	
143	j-48	101.00	Zone-1	<Collection: 1 items>	0	239.42	59.9	True	
144	j-76	110.00	Zone-1	<Collection: 1 items>	0	245.44	58.6	True	
145	j-73	110.00	Zone-1	<Collection: 1 items>	0	249.08	60.2	True	
146	j-4	122.39	Zone-1	<Collection: 1 items>	0	220.71	42.5	True	
147	j-42	98.00	Zone-1	<Collection: 1 items>	0	237.17	60.2	True	
148	j-69	110.00	Zone-1	<Collection: 1 items>	0	249.26	60.3	True	
149	j-26	99.18	Zone-1	<Collection: 1 items>	0	211.38	48.5	True	
150	j-74	110.00	Zone-1	<Collection: 1 items>	0	249.16	60.2	True	
154	j-70	110.00	Zone-1	<Collection: 1 items>	0	246.21	58.9	True	
157	j-59	97.51	Zone-1	<Collection: 1 items>	0	245.01	63.8	True	
160	j-81	110.00	Zone-1	<Collection: 1 items>	0	251.63	61.3	True	
161	j-80	110.00	Zone-1	<Collection: 1 items>	0	251.73	61.3	True	
162	j-10	104.00	Zone-1	<Collection: 1 items>	0	205.34	43.8	True	
164	j-83	110.00	Zone-1	<Collection: 1 items>	0	252.96	61.9	True	
165	j-60	98.83	Zone-1	<Collection: 1 items>	0	245.01	63.2	True	
166	j-44	97.00	Zone-1	<Collection: 1 items>	0	238.63	61.3	True	
167	j-66	110.86	Zone-1	<Collection: 1 items>	0	246.11	58.5	True	
168	j-64	97.94	Zone-1	<Collection: 1 items>	0	245.36	63.8	True	
171	j-7	104.20	Zone-1	<Collection: 1 items>	0	211.19	46.3	True	
173	j-82	110.00	Zone-1	<Collection: 1 items>	0	252.89	61.8	True	
176	j-61	98.21	Zone-1	<Collection: 1 items>	0	244.81	63.4	True	
177	j-12	101.00	Zone-1	<Collection: 1 items>	0	216.64	50.0	True	
178	j-65	103.38	Zone-1	<Collection: 1 items>	0	245.38	61.4	True	
180	j-52	109.91	Zone-1	<Collection: 1 items>	0	244.33	58.2	True	
181	J-115	104.00	Zone-1	<Collection: 1 items>	0	205.51	43.9	True	
182	J-116	104.00	Zone-1	<Collection: 1 items>	0	229.99	54.5	True	
187	J-121	100.00	Zone-1	<Collection: 1 items>	0	239.71	60.4	True	
188	J-122	110.00	Zone-1	<Collection: 1 items>	0	252.38	61.6	True	
189	J-123	101.00	Zone-1	<Collection: 1 items>	0	243.08	61.5	True	
190	J-124	110.00	Zone-1	<Collection: 1 items>	0	249.27	60.3	True	

FlexTable: Junction Table (MB Model Interim 2013.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Is Active?	Description
191	J-125	110.00	Zone-1	<Collection: 1 items>	0	246.23	58.9	True	
192	J-126	110.00	Zone-1	<Collection: 1 items>	0	244.23	58.1	True	
193	J-127	101.00	Zone-1	<Collection: 1 items>	0	243.13	61.5	True	
194	J-129	102.00	Zone-1	<Collection: 1 items>	0	211.45	47.4	True	
196	J-133	102.00	Zone-1	<Collection: 2 items>	0	219.87	51.0	True	
197	J-134	102.00	Zone-1	<Collection: 2 items>	0	219.87	51.0	True	
198	J-135	102.50	Zone-1	<Collection: 1 items>	0	219.87	50.8	True	
199	J-136	102.00	Zone-1	<Collection: 2 items>	0	211.47	47.4	True	
201	J-138	102.00	Zone-1	<Collection: 2 items>	0	211.85	47.5	True	
203	J-139	99.00	Zone-1	<Collection: 1 items>	0	174.81	32.8	True	
205	J-146	100.00	Zone-1	<Collection: 1 items>	0	180.52	34.8	True	
208	J-84	100.00	Zone-1	<Collection: 1 items>	0	175.31	32.6	True	
209	J-85	100.00	Zone-1	<Collection: 1 items>	0	181.59	35.3	True	
210	J-104	100.00	Zone-1	<Collection: 1 items>	0	174.44	32.2	True	
211	J-149	100.00	Zone-1	<Collection: 1 items>	0	228.62	55.6	True	
216	J-92	103.00	Zone-1	<Collection: 1 items>	0	204.84	44.1	True	
222	J-97	98.00	Zone-1	<Collection: 1 items>	0	166.97	29.8	True	
226	J-102	103.00	Zone-1	<Collection: 1 items>	0	220.35	50.8	True	
227	J-110	103.00	Zone-1	<Collection: 2 items>	0	211.40	46.9	True	
228	J-109	103.00	Zone-1	<Collection: 2 items>	0	211.42	46.9	True	
229	J-107	103.00	Zone-1	<Collection: 2 items>	0	219.87	50.6	True	
232	J-141	103.00	Zone-1	<Collection: 2 items>	0	219.86	50.6	True	
242	J-156	98.21	Zone-1	<Collection: 1 items>	0	162.86	28.0	True	
243	J-157	98.40	Zone-1	<Collection: 1 items>	0	160.67	26.9	True	
244	J-158	98.80	Zone-1	<Collection: 1 items>	0	159.32	26.2	True	
245	J-159	100.20	Zone-1	<Collection: 1 items>	0	158.88	25.4	True	
246	J-160	99.80	Zone-1	<Collection: 1 items>	0	158.64	25.5	True	
247	J-161	99.40	Zone-1	<Collection: 1 items>	0	160.82	26.6	True	
248	J-162	99.20	Zone-1	<Collection: 1 items>	0	164.41	28.2	True	
476	J-163	99.73	<None>	<Collection: 0 items>	0	147.71	20.8	True	

UCSF Parnassus Campus
Water Efficiency Survey

FINAL REPORT

April 2013

Prepared By

Maddaus Water Management Inc.

and

University of California San Francisco

UCSF
University of California
San Francisco

MADDAUS
WATER
MANAGEMENT INC.

Water Efficiency Survey of
UCSF Parnassus Campus, San Francisco, CA

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WATER EFFICIENCY SURVEY OF
UCSF PARNASSUS CAMPUS, SAN FRANCISCO, CA

1.0 EXECUTIVE SUMMARY

1.1 Project Summary

Maddaus Water Management Inc. (MWM) was retained in September 2011 by the UCSF Parnassus Campus to perform a water efficiency survey (survey) of the medical school and make water conservation recommendations for uses throughout the campus. This water survey focused on the administrative, educational and research facilities of the UCSF Parnassus Campus. There are a total of twenty-five buildings on the Parnassus campus, fifteen of which were surveyed for this report.

Based on review of the UCSF Parnassus Campus's historical billing data provided by the UCSF Facilities Management staff, the campus used an average of 515,000 gallons per day (gpd) of potable water in the year 2011, all of which is purchased from San Francisco Public Utilities Commission (SFPUC). This amounted to about 188 million gallons per year (MGY). This includes the hospitals, clinic and power plant water use. The buildings surveyed use a little less than half of this amount. The campus water use is almost entirely indoor use (e.g., laboratories, restrooms and kitchens). There is very little outdoor use for landscape irrigation. Based on the campus's water and sewer billing data, the entire UCSF Parnassus Campus currently spends approximately $3.2 million annually on its water and sewer bills.

Implementation of the recommended water conservation projects is estimated to result in a 20% savings in the annual water use (approximately 17.4 million gallons per year) of the fifteen buildings surveyed. These projects would save approximately $266,000 per year after all the recommended projects are completed as a result of lower water, sewer, and energy bills (using 2011 price rates). MWM estimates that the UCSF Parnassus Campus's payback from implementation of the recommended water conservation projects will occur in approximately one year.

1.2 Recommended Water Conservation Program

From November 2011 to February 2012, MWM and UCSF Parnassus Campus staff conducted a detailed survey of the administrative, educational, and research facilities involving fifteen of the UCSF Parnassus Campus buildings to identify uses of water and potential water conservation options. MWM and UCSF staff measured over 2,000 fixtures including faucet and shower flow rates, toilet flush volumes, looked for leaks, checked for missing faucet aerators and inspected the kitchens and characterized water use for over 2.6 million square feet of buildings which included laboratories, restrooms, exam rooms, kitchens, cooling tower and gymnasium. This data was placed in an electronic database and was used for the analysis of this report. The database was provided to staff for future implementation and reference purposes. The summary results of the fixtures included in this survey are presented below.

Table 1 - Summary UCSF Parnassus Campus Main Campus Surveyed Water Using Areas

Fixture	Number Surveyed
Buildings Surveyed	15
Rooms Surveyed	919
Restrooms Surveyed	168
Showers	28
Kitchens Surveyed	108
Cooling Towers Surveyed	1
Swimming Pools (Indoor) Surveyed	1
Cold Rooms	22
Laboratory Steam Sterilizers	47
Laboratories Surveyed	486

Following the campus survey, MWM estimated the water savings, costs, and paybacks associated with implementation of various water conservation projects. Based on MWM's analysis, the following water conservation projects were identified to provide significant water savings and a quick payback for the UCSF Parnassus Campus.

For payback analysis, we are using the average water and sewer rates for 2011. The average water and sewer rate for the campus as of January 1, 2012 is $13.34 per 1,000 gallons. If the rates continue to increase faster than inflation after 2011, the water conservation projects evaluated in this report will become even more attractive.

The recommended water conservation projects are shown in

Table 2 below.

Table 2 shows the estimated annual cost and estimated annual savings for each project.

Table 2 also shows the payback period for each project. The payback period is the annual project cost divided by the annual project savings. The payback period calculation yields the number of years it takes for the initial project costs to be recouperated from lower water bills. The recommended projects shown below all have an expected payback period of a few months to less than three years. All of the projects together have an average payback period of one year.

Table 2 - Recommended Conservation Projects for UCSF Parnassus Campus

	Measure	Estimated Project Cost, $/Year	Estimated Project Savings, $/Year	Payback Years
1	Reduce pressure on all laboratory distilled faucets	$4,798	$3,445	1.4
2	Install low flow faucet aerators in all industrial faucets (2.2 gpm)	$1,815	$631	2.9
3	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	$7,260	$12,182	0.6
4	Install low flow aerators in all laboratory faucets (2.2 gpm)	$11,160	$42,992	0.3
5	Install low flow shower heads in locker rooms	$400	$2,210	0.2
6	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$5,535	$33,452	0.2
7	Retrofit older low use urinals with DualFlush handles	$7,455	$2,844	2.6
8	Retrofit older toilet handles with DualFlush handles	$27,510	$18,890	1.5
9	Replace diaphragm in 1.6 gpf toilets in public restrooms	$3,850	$10,971	0.4
10	Employee Training	$3,000	$44,916	0.1
11	Cold room solenoid valves	$11,000	$12,010	0.9
12	Public outreach to detect leaks	N/A	N/A	N/A
13	Pursue LEED building certification	N/A	N/A	N/A
14	Maintain 1.6gpd toilet valve	N/A	N/A	N/A
15	Install water efficient fixtures in new construction projects	N/A	N/A	N/A
16	Install water mizers on autoclaves	$132,343	$55,995	2.4
17	Replace high use older urinals with low water use urinals	$9,375	$4,209	2.2
18	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$28,000	$20,835	1.3
	Total Recommended Projects	**$253,501**	**$265,582**	**1.0**

Note: The payback calculations are simple paybacks and by definition do not take time of actual implementation into account.

Each of the above listed projects is described in the Conservation Opportunities Section 5.

UCSF Parnassus Campus has completed several projects in previous years to improve water efficiency including replacing about one-third of 3.5 or 5.0 gallon per flush toilets with 1.6 gallon per flush toilets, installing waterless urinals and installing 0.5 gpm faucets in renovated restrooms. In addition to these changes, MWM recommends the above list of water conservation projects be considered for implementation.

Implementation of the recommended water conservation projects is estimated to result in a 20 percent savings in total medical school water use and a savings of approximately $266,000 per year (2011 rates). Savings will be higher when utility rates increase.

2.0 INTRODUCTION

2.1 Project Objectives

Maddaus Water Management Inc. was retained in September 2011 by the UCSF Parnassus Campus to perform a water efficiency survey (survey) and make water conservation recommendations for uses throughout the campus. The survey described in this report was conducted at the UCSF Parnassus Campus located in San Francisco, California. The water conservation recommendations included in this report are based on a payback analysis that identified the most cost-effective water conservation projects for UCSF Parnassus Campus.

2.2 Scope of the Investigation

MWM worked closely with the campus staff to complete the water efficiency study of fifteen of the buildings on the UCSF Parnassus campus. The project including the following steps:

1. Gather background data on the fifteen buildings.
2. Assess the efficiency of plumbing fixtures in campus facilities, existing conservation efforts, and the campus distilled water system.
3. Identify options to reduce water consumption including operations and retrofits.
4. Conduct an analysis of cost effectiveness for the various water conservation measures.
5. Develop a prioritization of potential options for implementation over the next 5 years.

The water survey was conducted on a total of fifteen buildings that are mainly used for medical research, administration, dining and teaching. These buildings where selected by UCSF staff as offering the best opportunities to save water. The buildings that were not surveyed included the medical clinic building, hospitals, and the power plant. The list of buildings surveyed is shown below in

Table 3. The Ambulatory Care Center (ACC) was made available for a walkthrough, however, extensive measurements of the water using fixtures was not possible due to the nature of the center's work with its patients.

Table 3 - List of Buildings Surveyed

	Building Name	Average Annual Water Use (gpd)	Square Feet (sq.ft.)	Average gpd per sq.ft.	Building Use
1	Clinical Sciences	1,475	107,647	0.01	L, A, C
2	School of Dentistry	12,889	128,403	0.10	L, A, C
3	Environmental Health & Safety	355	6,232	0.06	A
4	Health Sciences East & West	38,884	439,821	0.09	L, C
5	Kalmanovitz Library	27,550	120,000	0.23	A, C
6	Koret Vision Research Laboratory	3,909	40,000	0.10	L, H
7	Laboratory of Radiobiology	3,707	17,218	0.22	L
8	Medical Sciences	34,387	392,649	0.09	L, A, C
9	Millberry Union	13,738	422,974	0.03	A, O
10	Parnassus Services	77,422	20,000	3.87	L
11	Regeneration Medicine	2,860	68,631	0.04	L
12	School of Nursing	4,515	88,668	0.05	L, A, C
13	Surge	98	11,378	0.01	L
14	UC Hall	2,928	200,000	0.01	L, C
15	Woods	1,108	3,850	0.29	L
	Total	**242,145**	**2,664,370**	**0.09**	

Abbreviations: L = LAB; A = ADMINISTRATIVE; C = CLASSROOM; H = HOSPITAL/MEDICAL; O = OTHER

During the site survey, MWM and campus staff identified all significant uses of water in the buildings surveyed. They measured the flow rates and volumes of representative fixtures. MWM interviewed staff responsible for each significant end use. Based on this information, MWM prepared a breakdown of daily water use at the UCSF Parnassus campus into major categories and identified potential water conservation projects for payback evaluation. As described in detail below, water conservation project recommendations were developed and prioritized based on the estimated payback from each water conservation project, the total cost and amount of effort involved in completing the conservation project.

MWM identified and focused water conservation efforts on the major uses of potable water, listed below, at the surveyed buildings on UCSF Parnassus campus:

Potable Water

- Domestic (sanitary) use by students and employees
  - Toilets
  - Urinals
  - Faucets
  - Showers
- Laboratories
  - Faucets
  - Steam Sterilizers
  - Ice Machines
  - Bottle Washers
  - Cage Washers
- Kitchen / Restaurant
  - Faucets
  - Dishwashers

    - Spray valves
    - Ice machines
- Other
    - Cooling Towers
    - Swimming Pools
    - Cold Rooms

2.3 Goals and Objectives for the UCSF Parnassus Water Efficiency Survey

During a meeting with UCSF and Maddaus Water Management Inc. on October 26, 2011, a list of goals and objectives for the water efficiency survey were identified.

The goals of the study were:

- Identify improvements that could be made to campus facilities and operations to reduce campus water consumption.
- Analyze the cost-effectiveness of these potential improvements (when possible).
- Create a fixture database so UCSF staff can benefit from a detailed building fixture list.
- Recommend top priority water conservation measures to be carried out within the next few years.
- Create a detailed list of water using fixtures in the Kalamanovitz Library and School of Nursing to help with the LEED certification for these buildings.

3.0 DESCRIPTION OF EXISTING UCSF PARNASSUS CAMPUS

The first building of the University of California San Francisco Parnassus Campus was constructed in the mid-1890s and was first occupied in 1898 as an addition to the existing UCSF facilities in Berkeley. It was constructed to help alleviate the problem of the teaching facilities being scattered throughout the city. The Parnassus Campus has grown over the years adding a medical center, and ambulatory care center, academic and support buildings that include kitchens, a fitness center with an indoor swimming pool, cooling towers, and many laboratories which are used by about 3,000 students, 14,000 staff and faculty, 1,600 residents and 1,000 postdoctoral scholars. There are a total of twenty-five buildings on the Parnassus campus, only fifteen of which were surveyed for this report.

3.1 Description of Existing Campus Water Systems

Currently, the UCSF Parnassus Campus uses three types of water: potable (tap), distilled and industrial (reclaimed). The potable water is obtained from the San Francisco Public Utility Commission through multiple meters spread through the campus. SFPUC also handles all waste water generated by the campus. The campus maintains and monitors submeters for each building on campus. An analysis of the historical domestic water use is shown in section 4 below.

Most of the buildings surveyed use distilled water in their research laboratories. The distilled water is mainly created at the power plant and pumped around campus to other buildings as needed. Distilled water is mainly used to clean laboratory glassware and for use in experiments. The campus also supports an industrial water system where water is reclaimed from boiler blowdown and is pumped into the Health Sciences East and West buildings for use in cleaning of laboratory glassware and experiments.

Domestic (Sanitary) Use

Approximately 168 restrooms (for public, student and employee use) are maintained around campus. Approximately 257 toilets, 384 restroom sinks and 65 urinals were surveyed in those restrooms throughout the UCSF Parnassus Campus. The number of fixtures shown in Table 4, represent only the number of fixtures that were physically surveyed which is only a portion of the total number on campus. Although this was a very comprehensive survey, it did not include the hospital facilities, Ambulatory Care Center (ACC), power plant, irrigated areas or areas that do not use any water. In summary, Table 4 lists only the items that were physically surveyed. A brief discussion of findings from the UCSF Parnassus Campus survey is presented below:

- 257 flush valve toilets tested at an average of 3.11 gpf.
- Majority of campus had low flow shower heads, with an average flow rate of 1.54 gallons per minute (gpm).
- Measured flow rates of faucets as follows:
  - Restrooms: 2.58 gpm
  - Laboratories: 3.66 gpm
- All of the kitchen spray rinse valves were low flow valves and had an average of 1.27 gpm.

Table 4 - Summary UCSF Parnassus Campus Main Campus Surveyed Water Fixtures

Fixture	Number Surveyed
Buildings Surveyed	15
Restrooms Surveyed	168
Restroom Faucets Surveyed	384
Toilets Surveyed	268
Urinals – Flush	98
Urinals – Waterless	23
Showers	28
Kitchen Faucets	108
Kitchen Spray Valves	4
Kitchen Ice Machines	5
Cooling Towers	1
Cold Rooms	22
Swimming Pools (Indoor)	1
Laboratory Steam Sterilizers	47
Laboratory Faucets	923
Laboratory Cage Washer	5
Laboratory Spray Valves	8
Laboratory Ice Machines	46
Total Fixtures Surveyed	**2,154**

Laboratories

MWM conducted a water survey of many of the laboratories. The main use of water in the laboratories was for washing and sterilization of laboratory equipment. Most of the laboratories had distilled water (DI) faucets. The campus has a main distilled water (DI) system originating at the power plant and smaller systems in several buildings around campus. The power plant has the

largest DI system, which is maintained by the campus Facilities Management department. The DI faucets where tested in each of the laboratories in each building.

MWM identified the following major water using equipment:

- 5 Cage washers for animal research area
- 42 Wall mounted steam sterilizers used to clean and sterilize glassware
- 12 Kitchen spray valves to pre-rinse glassware
- 51 Ice machines
- Water cooled vacuum pumps and compressors

Kitchen / Restaurants

The UCSF Parnassus Campus has multiple dining areas on campus, but only those at the Millberry Union were surveyed as part of this project. The main cafeteria was not surveyed as it was located in the hospital which was not included in the survey. The restaurants in the Millberry Union building are independently owned and operated. The Millberry Union restaurants are open for breakfast, lunch and dinner. The number of meals served will greatly fluctuate depending on the UCSF Parnassus Campus occupancy which is lower in the summer and during school holiday breaks. The summer term does continue to have dining services for summer school attendees and employees. During food preparation and cleanup the kitchens use a variety of water-using equipment including dishwashers, spray valves, ice machines, and kitchen faucets.

During cleanup, typically the dishes are sprayed with a spray rinse valves, washed in small dishwashers or cleaned with kitchen faucets. Dishwashers use a large volume of water to wash dishes. Therefore, MWM recommends that the dishwashers be loaded as efficiently as possible as determined by the manufacturer (e.g., running full racks instead of partially full racks) to avoid any unnecessary water use.

Spray rinse valves are used in commercial kitchens to rinse dishes before they are placed in the dishwasher. Conventional spray valves use about two to three gallons per minute or more and new low flow models required by the current plumbing regulations only use about 1.6 gallons/minute at 80 psi, or 1.0 gallons/minute at 60 psi. There are even lower flow models available that function well and flow at rates of 1.15 gpm. Valves rated at lower than 1.15 gpm have been showing difficulty in the field with generally unacceptable cleaning performance. Low flow models can save on energy, water and sewer as the fixtures typically use hot water.

The flow rates of the 12 spray rinse valves located at USCF that were measured during the survey had an average flow rate of 1.27 gpm. These are all high efficiency valves so no other action is required. However, it is recommended that new spray valves that are installed be the low flow models as they are used frequently by kitchen staff.

Information about these pre-rinse spray valves and savings can be found at: http://www.fishnick.com/equipment/sprayvalves/.

Other

UCSF Parnassus Campus has 51 air-cooled ice machines for laboratory and kitchen use. The ice machines are made by a variety of manufactures including Manitowoc,

Hoshizaki and Scotsman. Air-cooled ice machines are more water efficient than water-cooled machines. Air-cooled machines typically use less than 18 gallons per 100 pounds of ice. Water-cooled machines typically use 150 to 200 gallons per 100 pounds of ice produced.

It is recommended that when it is time for new installations or replacements, UCSF should select air cooled machines and look for possible rebates. Air cooled machines can be more efficient (for both energy and water) but do not typically cost any more than water cooled machines.

For more information and an example of possible future rebates see the following website:

http://www.energystar.gov/index.cfm?fuseaction=CFSrebate.CFSrebate_locator

Cleaning (Custodial)

The UCSF Parnassus Campus has a custodial staff that cleans different parts of campus daily. The staff is responsible for cleaning the sinks, toilets, faucets, and showers. It is recommended that the staff be trained in water and chemical efficiency to ensure that water is not wasted.

Cooling Tower

UCSF Parnassus Campus has multiple evaporative (water) cooling towers however this survey only covers the cooling tower on the roof of the library building. The library cooling tower has 320 tons of cooling capacity that is used for air conditioning in the library. The cooling tower is separately metered and is well maintained. The cooling tower runs as needed. During the site visit and testing of total dissolved solids (TDS) shown in Table 5, the tower was not running but would have been running at approximately 13 cycles when last in operation. For water efficiency the goal is a minimum of 5 cycles.

Table 5 - Cooling Tower Description

Cooling Tower	Cooling Tower Manufacturer and Type	Tonnage	Read Date	TDS Incoming Water	TDS Measured in Tower	Approx .# of Cycles
Library	Ceramic Towers Inc.	320	Nov 9, 2011	43	550	12.79

Swimming Pool

The UCSF Parnassus Campus has one large indoor swimming pool in the fitness club in the Millberry Union building. The pool is approximately 65 feet by 50 feet in size with a depth range of 3.5 to 10 feet deep. The approximate volume of the pool is 163,000 gallons and is in use all year. The staff did not know how often the pool filters are backwashed but typically this is done once per month.

Cold Rooms

There are 22 cold rooms on the medical school campus used for low temperature laboratory experiments. Currently existing water cooled cold rooms rely on a pressure controlled valve which determines flow rate. Total water use of each cold room is estimated by Mr. Bruce Shapiro

to be 133,736 gallons per year. Of this use, 40,880 gallons per year is flow during the period when the unit is supposed to be cycled off. This use occurs because the control valve is adjustable and can drift from its setting and allow water to flow needlessly. A solenoid valve installation would ensure zero water flow when the system is cycled off. Several water conservation projects based on the above listed items are evaluated in the Conservation Opportunities Section 5.0.

4.0 HISTORICAL WATER USE AT UCSF PARNASSUS CAMPUS

SFPUC reads the city owned UCSF Parnassus Campus water meters every month for billing purposes. Figure 1 indicates that overall annual water use at the UCSF Parnassus Campus has been decreasing over the last three years. This trend of decreased water use is a common trend in the Bay Area and all throughout California recently due to the irregular economy (in a campus environment the change in the economy can impact things such as number of employees and total hours worked on campus, student enrollment, research funds for experiments, etc.). The peak water usage occurs during the school year when students are on campus for classes. Figure 2 shows a declining trend in monthly data on the order of 10-15 percent since 2007.

Water usage at the fifteen buildings evaluated varies seasonally (see Figure 3). This seasonal variance is due to the increase of water use while school is in session and generally drops off as students leave for the summer. In this report, water usage is reported in gallons per day (GPD). The following water use characteristics were derived based on review of the UCSF Parnassus Campus's water sub meter data as provided by the campus Facilities Management department:

- The highest water use occurs during the school months of June and November.
- The average total daily usage in 2010 of the fifteen buildings is approximately 242,000 gallons per day (GPD).

Figure 1 - Annual Water Consumption History for the entire UCSF Parnassus Campus

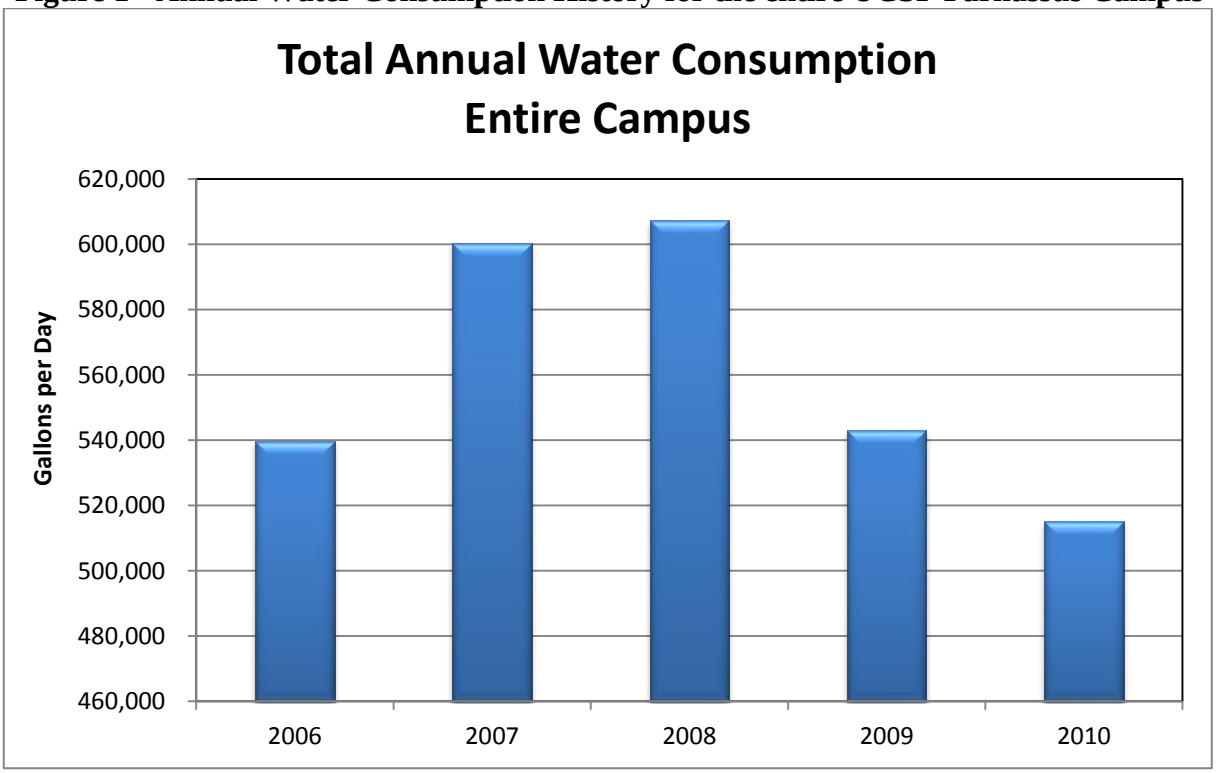


Figure 2 - Monthly Water Consumption History for the entire UCSF Parnassus Campus

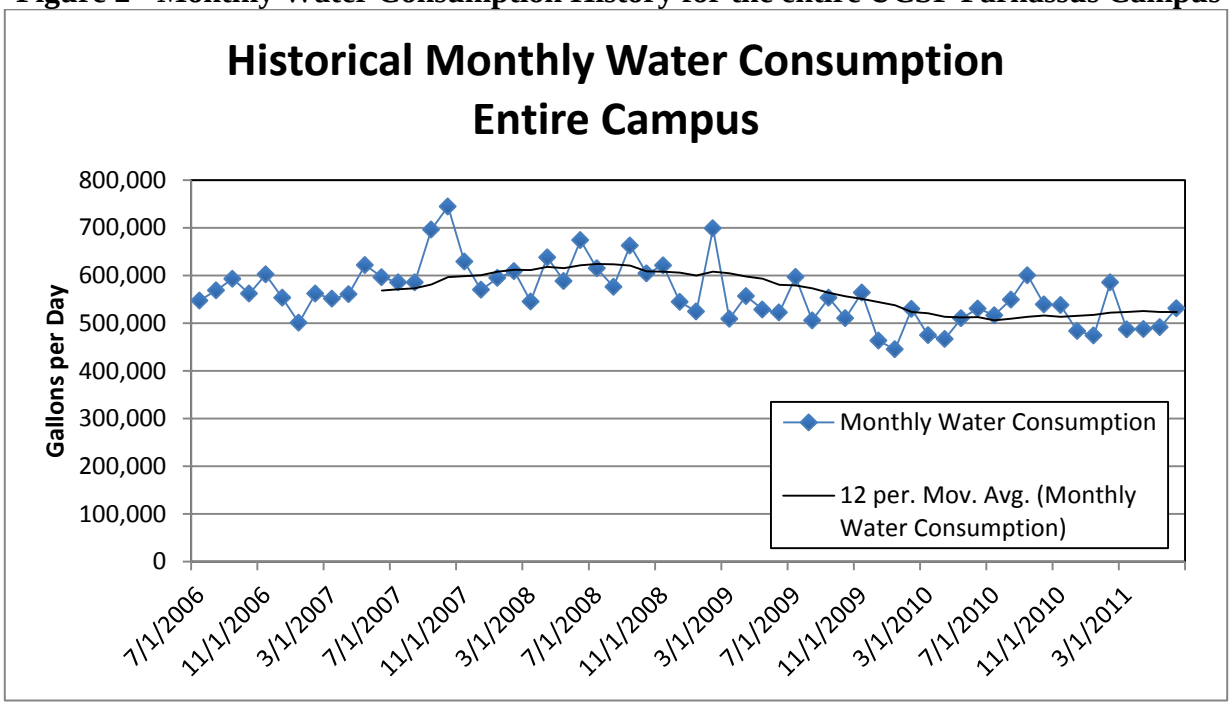
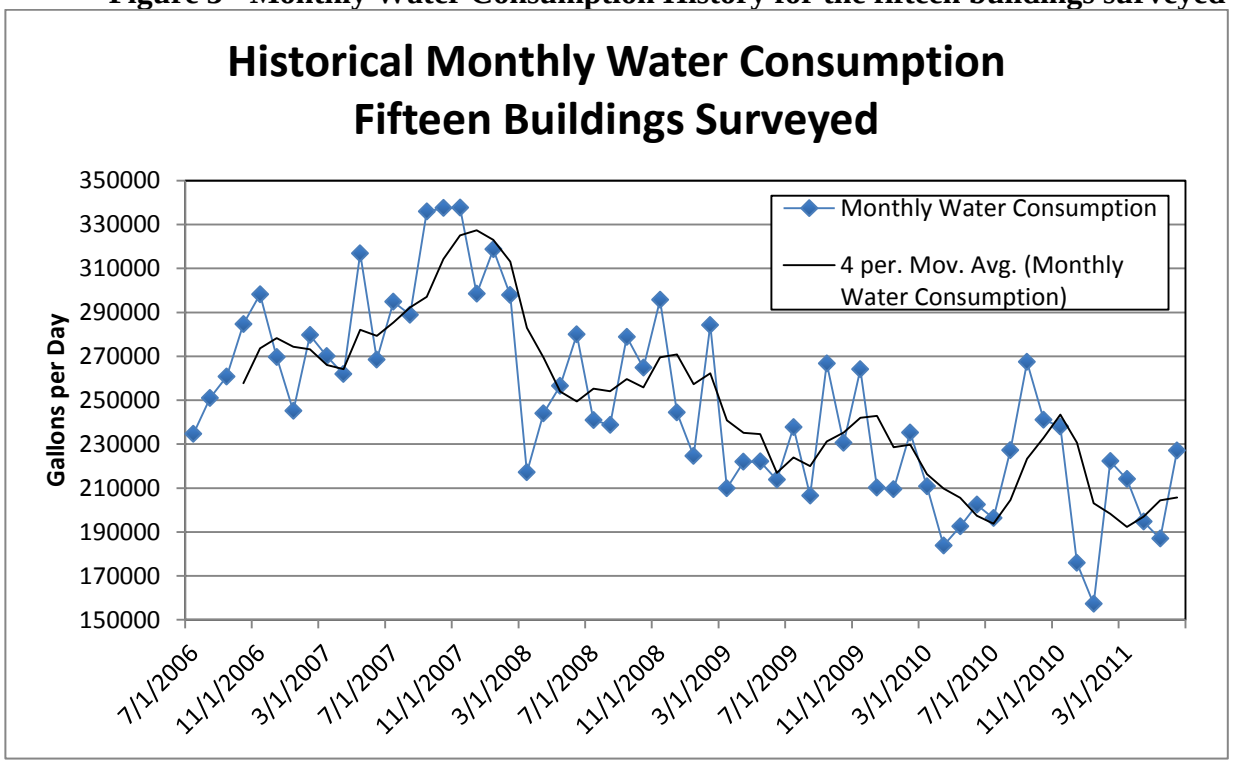


Figure 3 - Monthly Water Consumption History for the fifteen buildings surveyed



4.1 Water Use Composition

In order to accurately account for water conservation benefits from water conservation program savings, it is necessary to establish a baseline water use from historical data. The evaluation of

historical water consumption for UCSF Parnassus Campus involved the analysis of available submetering data between 2005 and 2011. Data shows that the 12-month moving average from 2005 to 2011 for the submetered system is decreasing slightly and was at approximately 515,000 gallons per day for calendar year 2010. This submeter total does not include water system loss or unmetered areas. This report focuses specifically on water conservation for the domestic water supply system and the distilled water system. The historical water use was further broken down into a water system profile to establish water demands for the major categories.

The respective percent of total annual average domestic water demand based on 5 years of metered data for each use category in the medical school is illustrated in Figure 4. This does not include system losses.

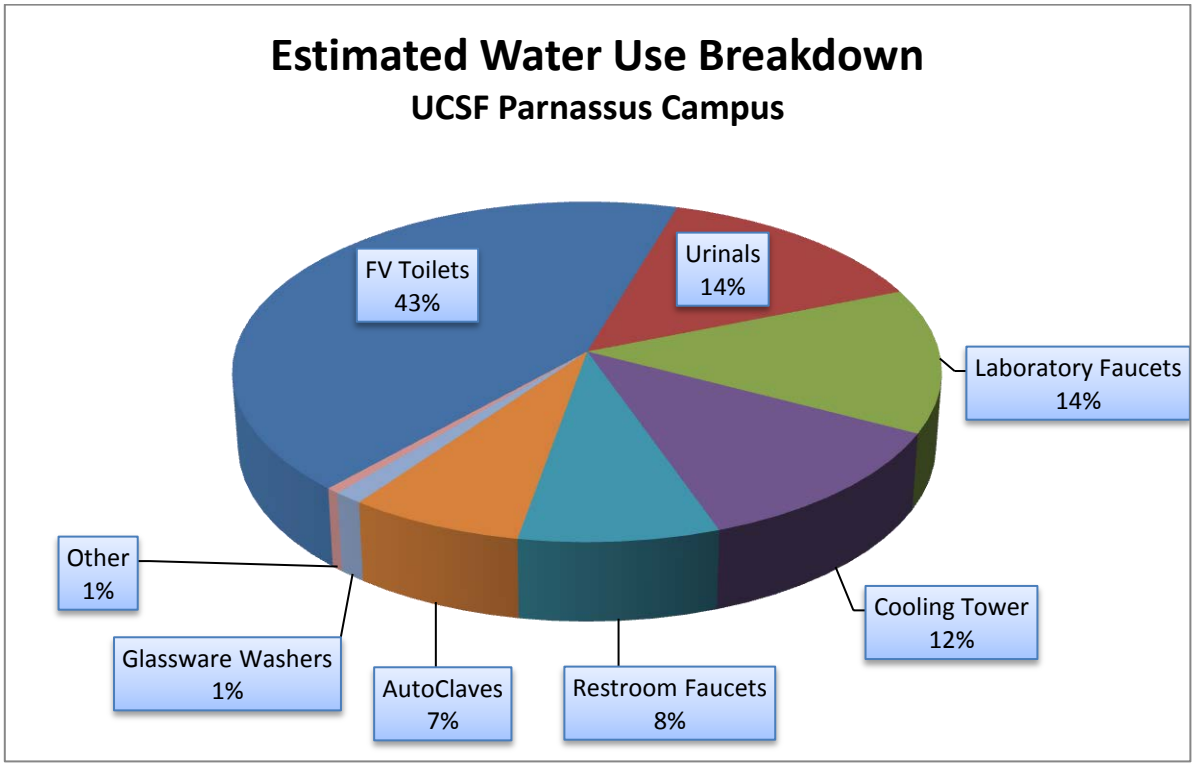


Figure 4 - Estimated Water Use Breakdown

MWM recommends that the focus for water conservation efforts should target the larger end uses of water so as to provide the most cost effective conservation investment returns.

4.2 Billing Rates for the UCSF Parnassus Campus

The current average cost of water and sewer (as of January 1, 2012) for UCSF Parnassus Campus is $13.34 per 1000 gallons for the main building meter. The total combined sewer and water bill for UCSF Parnassus Campus is approximately $3.2 million annually as of 2011. The campus (educational, research and administrative) portion would be a little less than half of this amount. In accordance with the City's policies, the water and sewer rates are revised every year. Historically, water rates change on January 1 and Sewer rates change on July 1 every year. A rate of $0.74/therm (2007 natural gas rate) was used to estimate energy savings from lower hot water use.

UCSF Parnassus Campus does not have a separate meter or separate bill for irrigation use as the irrigation use is very small. All the water used on campus for domestic, irrigation or other type of use is charged the same at a uniform rate. Indoor uses thus get billed both for water and sewer charges (including cooling tower drain down water), while outdoor use also gets charged for the sewer but the amount of landscaping is nominal and does not warrant the installation of a separate meter.

Water rates have increased steadily over the past few years for the campus and if water rates continue to increase faster than inflation after 2011, the water conservation projects evaluated in this report will become even more attractive.

4.3 Historical Water Conservation Efforts UCSF Parnassus Campus

The UCSF Parnassus Campus has a long tradition of trying to be resource efficient. This attitude toward sustainable resource management was seen on multiple occasions when talking to staff around campus that water and energy efficiency is very important in their project planning and daily operation procedures. All across campus MWM discovered water and energy efficiency practices including:

- Use of reclaimed industrial water
- LEED certification of buildings
- Submeters installed per building
- Installation of water efficient fixtures as older fixtures break including waterless urinals and low water use toilets
- Dual flush toilet handles

5.0 WATER CONSERVATION OPPORTUNITIES

5.1 Water Conservation Project Descriptions

The following table provides a description of the projects that were identified during the UCSF Campus water efficiency survey.

Table 6 - UCSF Parnassus Campus Water Efficiency Project Descriptions

Project Number	Name	Description
1	Reduce waste of DI water due to high pressure at DI water faucets.	Reduce the pressure in distilled water system where water was seen to be splashing in the laboratory faucets. Reduce the pressure at the faucet shut off valve or with a pressure reducer for each floor.
2	Install low flow faucet aerators in all industrial faucets. (2.2 gpm)	Reduce flow rate for industrial faucets by installing lower-water-use aerators.
3	Install low flow faucet aerators in all exam room faucets. (1.5 gpm)	Reduce flow rate for exam room faucets by installing lower-water-use aerators.
4	Install low flow faucet aerators in all laboratory faucets (2.2 gpm)	Reduce flow rate for laboratory faucets by installing lower-water-use aerators.

Project Number	Name	Description
5	Replace older, inefficient showerheads with newer, more efficient models.	Remove old high flow showerheads and replace them with efficient models using 1.5 gpm or less.
6	Install low flow faucet aerators in all bathroom faucets. (0.5 gpm)	Reduce flow rate for restroom faucets by installing lower-water-use aerators. The campus seems to be installing 0.5 gpm aerators on some new faucets but these were only found in a few buildings.
7	Retrofit low traffic restroom urinals with Dual Flush handles.	In all restrooms with low traffic and high water use urinals retrofit each urinal handle with the Dual Flush handle to help save water without incurring the high cost of installing the entire fixture.
8	Retrofit low traffic restroom toilet handles with Dual Flush handles.	In all restrooms with low traffic and 3.5 gpf type toilets retrofit each toilet handle with a Dual Flush handle to help save water without incurring the high cost of replacing the entire fixture.
9	Retrofit 1.6 gpf toilet flush valves in public restrooms where a flush indicates more than 1.6 gpf is being used.	Replace existing 1.6 gpf flush valve toilet diaphragms with new ones to improve performance of existing efficient toilets.
10	Employee Water Education Training and Increase water conservation awareness among students.	Conduct training for employees and educational campaign for students arriving on campus in September.
11	Retrofit all water cooled cold rooms with a solenoid valve to prevent continuous flow when unit is cycled off	Install a solenoid valve on the cooling water line that closes when unit is cycled off. Currently (2013) a pilot project is being conducted on campus at one cold room to measure savings.
12	Public outreach to help detect and repair leaks more quickly.	Post signs in restrooms encouraging people to report leaks.
13	Continue to pursue water efficiency when doing LEED building certifications.	Install the most water efficient fixtures possible during LEED certifications.
14	Maintain 1.6 gpf toilet models so that they function as designed.	Monitor and replace existing 1.6 gpf flush valve toilets by installing new 1.6 gpf flush valves as needed.
15	Install more water-efficient fixtures in existing buildings as they are remodeled.	Update water efficiency requirements for remodels in campus standards. This may include toilets, showers, faucets, urinals, dishwashers, steam sterilizers and more.
16	Increase water efficiency of autoclaves (steam sterilizers).	Add Water Mizer or solenoid sensors to all steam sterilizers. This will create a significant water use reduction.

Project Number	Name	Description
17	Replace all older urinals with high efficiency quart or pint urinals.	Remove older urinals in high use bathrooms and replace them with high efficiency urinals. The urinal selected should be found on the SFPUC rebate list in order to help offset the cost of the fixture.
18	Replace all older 3.5 gpf toilets in public restrooms with 1.28 gpf type toilets.	Remove older toilets and replace with high efficiency 1.28 gpf toilets. The toilet selected should be found on the SFPUC rebate list in order to help offset the cost of the fixture.

5.1 Rebate Opportunities from SFPUC

SFPUC is currently offering commercial rebate programs to customers which UCSF can utilize to offset the costs of installing water efficient fixtures. MWM contacted Julie Ortiz JNOrtiz@sfwater.org who answered our questions and would be a good contact for UCSF to discuss rebate opportunities with.

Three of SFPUC's commercial programs could currently be used by UCSF Parnassus Campus. The first program is the Commercial High-Efficiency Toilet Rebate program which contains a $300 rebate for each 1.28 gpf toilet that is installed and replaces an existing 3.5 gpf type toilet. The second program is the Commercial High Efficiency Urinal Rebate program which contains a $300 rebate for each 1.5 gpf urinal that is replaced with a 0.5 gpf or less use urinal. The last program is the Grant Assistance for Water Efficient Retrofits which can cover medical steam sterilizers, commercial laundry machines, x-ray film processors, ice machines, connectionless food steamers, dry vacuum pumps, and cooling tower pH controllers. The efficient retrofit program has a variable rebate about of 50% of the equipment costs with limits as shown in Table 7 below.

Table 7 - Eligible Projects for the Grant Assistance for Water Efficient Retrofits Program

Equipment Type	Estimated Annual Water Savings (1 ccf = 748 gallons)	Grant Amount
Cooling Tower pH Controllers	1,734 ccf	50% of the equipment cost, up to $8,000
X-Ray Film Processor Retrofits	1,119 ccf	50% of the equipment cost, up to $5,000
Medical Equipment Steam Sterilizers	670 ccf	50% of the equipment cost, up to $2,500
Water Efficient Ice Machines	364 ccf	50% of the equipment cost, up to $1,800
Commercial Laundry Retrofits	344 ccf	50% of the equipment cost, up to $1,700
Dry Vacuum Pumps	279 ccf	50% of the equipment cost, up to $1,000
Connectionless Food Steamers	109 ccf per compartment	50% of the equipment cost, up to $545 per compartment

5.2 Recommended Fixtures

Urinals

Table 8 below shows a list of recommended urinals for installation. These fixtures have been recommended by other universities that have tested and installed these fixtures and have knowledge of their use. These recommendations do not guarantee that the fixtures will work well at UCSF. Therefore, it is strongly recommended that UCSF test each fixture conducting a pilot test of each fixture by installing a few of the devices and testing that they are functioning as expected and that water savings are occurring. Then after the pilot test, the fixtures should be ready for a full installation).

There are multiple approaches that can be taken to improve the efficiency of the existing urinals. The options are for the urinal to either be replaced with a new one pint flush fixture or retrofitted with the Dual Flush handle as shown in Table 8 below. This type of handle is designed to be up for full flush and down for a reduced flush, causing the user to act differently to get a full flush. In order to obtain the best benefit to cost ratio MWM recommends that the decision to replace versus retrofit a urinal be decided on whether the restroom is in a high or lower traffic area. If the restroom is a high traffic restroom then replace the urinal with one from Table 8 below. If the restroom is in a low traffic area then it is recommended to retrofit the urinal handle with the Dual Flush handle to save water. As SFPUC is currently offering a $300 rebate on the installation of one pint urinals, a rebate form will need to be submitted to the SFPUC for all of the urinals installed. The form can be found at:
http://www.sfwater.org/modules/showdocument.aspx?documentid=223
The SFPUC may want to inspect the newly installed urinals to verify proper installation.

Table 8 - Recommended Urinals

Manufacturer	Model Number	Flush Valve Type	Flush Volume	SFPUC $300 Rebate	Notes
Zurn	Z5798	Automatic Battery	1 pint	Yes	This model was recommended by multiple other California universities and the only comment was that the model Z5738 was noted to have a better wash-down than this mode.
Zurn	Z5758	Automatic Battery	1 pint	Yes	Works well. No issues noted. Recommend model (Z5738) "small pint" for better wash-down.
Zurn	Z5738 (Small Pint)	Automatic Battery or Automatic Hardwired	1 pint	Yes	This model was noted to work well. It was also noted that in the battery life of the automatic flush valve depended on the amount of use. It was recommended, if possible, to get the hard-wired model (Z5738.206.0).
Kohler	4904-ET (bowl) and K-13520-YY (flush valve)	Manual	1 pint	Yes	This model bowl was noted to work well.

Toilets

Table 9 below shows a list of recommended toilets for installation. These fixtures have been recommended by other universities that have tested and installed these fixtures and have knowledge of their use. These recommendations do not guarantee that the fixtures will work well at UCSF. Therefore it is strongly recommended that UCSF test each fixture conducting a pilot test of each fixture by installing a few of the devices and testing that they are functioning as expected and that water savings are occurring. Then after the pilot test the fixtures should be ready for a full installation.

The toilet flush valve and bowl selected should be high efficiency using 1.28 gpf and used to replace an older 3.5 gpf toilet in order to qualify for the SFPUC rebate. MWM is recommending a similar strategy to that used with urinals, that all of the high traffic toilets be replaced with 1.28 gpf toilets selected from Table 9 below. If a restroom is in a high traffic area it should be considered higher priority for replacement. If the bathroom is in a lower use area, it is recommended to install the Dual Flush handle to help save water without the large cost of a new fixture.

It should be noted, when selecting a flush valve, multiple studies have shown that automatic flush valves use more water than manual flush valves. This appears to be due to unnecessary flushes triggered by false sensor readings that a flush is necessary. Based on the industry research and direct field observations MWM recommends that when appropriate that manual flush valves be chosen for installation.

The SFPUC rebate form for these toilets can be found at:
http://www.sfwater.org/modules/showdocument.aspx?documentid=1103

Table 9 - Recommended Toilets

Manufacturer	Model Number	Flush Volume	MAP Score	Type	SFPUC Rebate	Notes
Zurn	Z5615 (bowl) and AquaSense AV ZER6000AV-HET-CPM (flush valve)	1.28 gpf	800	Wall Mount, Automatic, Battery Powered	Yes	Tested in dual-flush, sensor, and single flush models. Toilet works well, but must be sure the valve is adjusted correctly to avoid double flushing or spitting.
Toto	CT705ELN (bowl) and Toto TET 1LN-32	1.28 gpf	1000	Floor Mount,	Yes	
American Standard	Madera 3461.001 (bowl) and 6065121.002 (flush valve)	1.28 gpf	1000	Floor Mount, Automatic, Battery Powered	Yes	

Urinal and Toilet Handle Retrofit

If a high water use toilet or urinal is in a less visited restroom, then the toilet should be retrofitted with a Dual Flush handle in order to save water without incurring the cost of a new toilet. Dual Flush handles are simple to install, only requiring a few minutes for a plumber to unscrew the old handle and then screw in this new one. By simply replacing the handle, the toilet or urinal can be used as a dual flush device where pressing down uses a reduced flush while pressing up will use a full flush of water. This device manufactured by AMTC and can save up to 30% per flush. Signage is also sent with the handle to be mounted near the toilet or urinal so as to

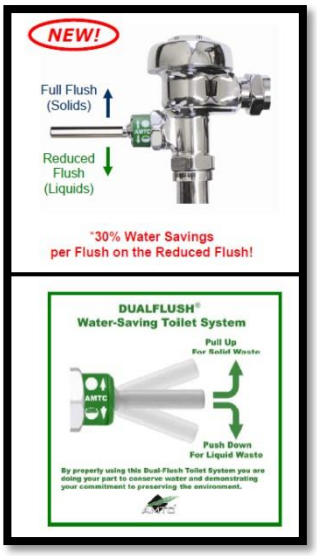
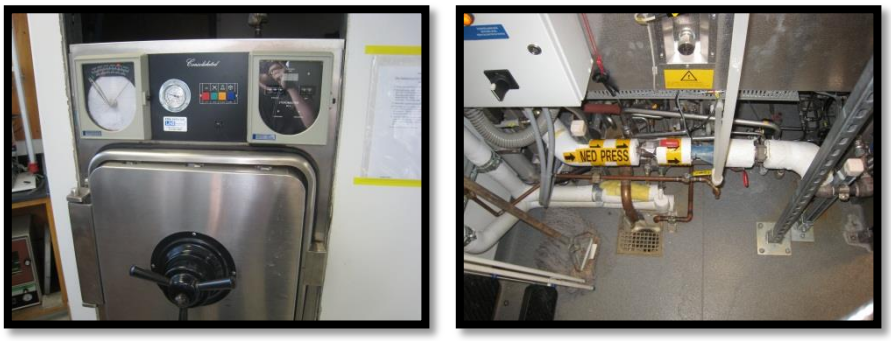


Table 10 - Recommended Retrofit Dual Flush Handles for High Use Urinals and Toilets

Manufacturer	Retrofitted Fixture	Model Number	Flush Volume (gpf)
AMTC	1.6 gpf toilet	ADH-100-16	1.5/1.2
AMTC	3.5 gpf toilet	ADH-100-35	3.5/1.75
AMTC	Urinal	ADH-101	0.5

Steam Sterilizers (Autoclaves)



There are a total of 42 large sterilizers that were surveyed. These large wall mounted sterilizer units are used to sterilize equipment and glassware for experiment and research purposes that need high temperature sterilization. The hot water discharge must be cooled before discharging to the building drain to prevent damage to the plumbing.

MWM is recommending installing Water Mizers on the 42 large sterilizers on campus when the sterilizer appears to be in regular use and water is being discharged continuously (even when the sterilizer is not in use). The Water Mizers have a solenoid valve which senses when the machine needs cool water (only while in use and during the very end of the clean cycle) instead of running a large volume of water down the drain 24 hours a day (often with potable water). Since these facilities are mainly focused on research, it assumed

Figure 5 - Water Mizer

there can be a very large overall savings potential. Other local Bay Area campuses have installed Water Mizers successfully and showed very significant savings.

The campus departments that have sterilizers should decide whether to replace existing units with new units equipped to save water or install water mizers depending upon criteria including:

- Age of unit
- Relative water efficiency of existing unit
- Frequency of repair
- Consequences of a unit being down for repairs
- Estimated remaining useful life
- Availability of SFPUC rebates
- Cost analysis of Water Mizer vs. Replace Unit vs. Doing nothing

The following table shows information to consider when purchasing a new machine. The water efficient options do cost more when the unit is purchased, but can save significant water and sewer costs for many years.

Table 11 - Water Efficient Features of Steam Sterilizers

Unit	Option	Cost $	Peak Water usage (gpm)	Water usage full (gal/cycle)	Water savings (gals/cycle)	Water saving %
Steris Lab 250	Standard Unit with water ejector	-	6	126	-	-
Steris Lab 250	Vacuum pump upgrade	$1,500	3	48	78	62%
Century	Standard Unit with vacuum pump	-	15	94	-	-
Century	Chilled water vacuum & drain	$3,500	0.5	1.4	93	99%
Getinge 733LS	Standard Unit with water ejector	-	11	340	-	-
Getinge 733LS	Vacuum pump	$5,500		70	270	71%
Getinge 733LS	Chilled loop Chilled water (vac & drain)					
Getinge 733LS	MP-129 (Stand-alone unit)	$15,000		110	230	68%

There are additional small bench top sterilizer units which are thought to be used infrequently based on discussion with UCSF personnel. These units are often manually filled by the user. Based on the infrequency of use and type of unit it is not recommended to install Water Mizers for these units.

Faucet Aerators

There is a large potential for water savings on the Parnassus Campus from water faucets in restrooms, laboratories, kitchens and exam rooms. During the survey many faucets where found to have broken or missing aerators. Replacing an aerator is a quick and cheap fix that will help save money for the campus. For this reason we are recommending the following types of aerators be installed and regularly checked in the following areas.

Room Type	Recommended Aerator Flow Rate
Restrooms	0.5 gpm
Laboratories	2.2 gpm
Kitchens	2.2 gpm
Exam Rooms	1.5 gpm

Aerators can get clogged over time with sought from the water lines and this can cause faucet users to get frustrated if water pressure isn't sufficient. This can lead to aerator removal and a loss of water savings. It is recommended to periodically check and cleaning the aerator screens as needed to prevent problems.

Distilled Water System Improvements

Updates to the distilled water system could be made in one of two ways to help improve efficiency. MWM observed relatively high pressure in all instances. Steps should be taken to reduce pressure and save water. MWM can suggest three possible methods:

(1) One way to address the issue of high pressure would be to install pressure reducers on each floor.
(2) The second method would be to check the pressure at each distilled faucet and lower the pressure at the sink by adjusting the valves under the sink so as to obtain a decent flow rate of water without excessive splashing.
(3) The third approach would be to install 1.5 gpm aerators on each of the faucets that do not have a nozzle to ensure that water is not being wasted.

5.3 Water Conservation Technology Overview and Definitions

The description of the UCSF Parnassus Campus water using fixtures (shown in Table 4) outlines the possible future improvements that can be made for the toilets, washing machines, ice machines, dishwashers, spray valves, urinals and faucets (see Section 3 for comments by individual area). It is recommended the UCSF Parnassus Campus purchase water and energy efficiency equipment now and in the future as technology continues to advance. Often the cost for the more energy and water efficient devices is the same as the less efficient models. One simply needs to be aware and read or ask the manufacturers for the energy and water using specifications and compare among different models and manufacturers to ensure that the most efficient and economical model is purchased. The selection of an efficient model can greatly reduce the energy and water costs as much as 70 percent, which is highly desirable.

Sanitary Plumbing Fixture Standards and Definitions

National Plumbing Code

National law requires that for new construction after January 1, 1992 only fixtures meeting the following standards can be installed in new buildings:

- Toilet – 1.6 gal/flush maximum
- Urinals – 1.0 gal/flush maximum

- Showerhead - 2.5 gal/min at 80 psi
- Residential Faucets – 2.2 gal/min at 60 psi
- Public Restroom Faucets - 0.5 gal/min at 60 psi (2005 amendment)

Replacement of fixtures in existing buildings is governed by the Federal Energy Policy Act that requires only devices with the specified level of efficiency (shown above) can be sold after January 1, 1994 for residential use and January 1, 1997 for commercial toilets. Only efficient models can be legally sold by manufacturers to be placed in new structures or used as replacement parts for existing fixtures. The net result of the plumbing regulations is that new buildings will be more efficient and old inefficient fixtures will slowly be replaced with new more efficient models. The national and state plumbing legislation and regulations are carefully taken into consideration when analyzing the overall water efficiency of a service area.

State Plumbing Code

The Plumbing Code includes a California State Law requiring High Efficiency Toilets (HET) and High Efficiency Urinals (HEU) be exclusively sold in the state by 2014. Recently, this was augmented by a new state plumbing code called Cal Green (See Table 12). This code will require only HETs and HEUs be used in permitted new construction after July 2011. Non High Efficiency Fixtures can still be sold for replacement up until 2014.

Table 12 - Cal Green Building Code

Cal Green Building Code						
Building Class	**Component**	**Effective Date[I]**	**Indoor Fixtures Included**	**Indoor Requirement**	**Landscaping & Irrigation Requirements**	**Are the Requirements Mandatory?**
Residential	Indoor	1/1/2011	Toilets, Showers, Lavatory & Kitchen Faucets, Urinals	Achieve 20% savings overall below baseline		Yes
	Outdoor	1/1/2011			Provide weather adjusting controllers	Yes
Non Residential	Indoor	1/1/2011	Submeter leased spaces	Only if building >50,000 sq. ft. & if leased space use >100 gpd		Yes

			Toilets, Showers, Lavatory & Kitchen Faucets, Wash Fountains, Metering Faucets, Urinals	Achieve 20% savings overall below baseline		Yes
	Outdoor	1/1/2011			Provide water budget	> 1,000 sq. ft. landscaped area
					Separate meter	As per Local or DWR ordinance
					Prescriptive landscaping requirements	> 1,000 sq. ft. landscaped area
					Weather adjusting irrigation controller	Yes
[I] Effective date is 7/1/2011 for toilets						

Starting in 2014 the fixtures that will be the only ones sold are listed below along with suggestions for a campus standard of even higher efficient fixtures where appropriate.

Table 13 - Plumbing Fixture Legislation and Regulations

Plumbing Fixture	Required by Plumbing Legislation and Regulations	Proposed Future Replacement Fixtures
Urinals	0.5 gpf by 2014 in California	One Pint
Lavatory Faucets	2.5 gpm	1.5 gpm
Toilets	1.6 gpf	1.28 gpf
High Efficiency Toilets	1.28 gpf Required by 2014 in California	1.28 gpf

gpf = gallons per flush gpm = gallons per minute

5.4 Water Conservation Project Costs

A summary matrix of the recommended projects and rough estimates of costs, assuming contractor labor and retail prices, is shown in Table 15. The labor rate for all plumbing projects is assumed to be $98 per hour as provided by Facilities Management staff. The project costs quoted in this report include labor costs. The time estimate to for each project varies and is shown in Table 14 below. However, UCSF can mitigate these costs by using in-house staff to complete the projects. UCSF should decide whether to replace fixtures quicker with contractors in order to save

water and money sooner or schedule the replacement into the normal workload, taking longer but lowering the installation cost. The availability of SFPUC rebates should also enter into the decision. SFPUC does not reimburse labor costs and the rebates may not continue indefinitely.

Table 14 - Water Using Fixture Replacement Times

Fixture Project	Estimated Fixture Install Time
Faucet Aerator Retrofit	6 min
Showerhead Retrofit	15 min
Dual Flush Toilet/Urinal Handle Retrofit	15 min
Toilet Flush Value Diaphragm Replacement	15 min
Toilet Bowl and Flush Valve Replacement	2 hours
Urinal Bowl and Flush Valve Replacement	2 hours

Table 15 - Estimated Water Conservation Project Costs by Building

UCSF Parnassus Campus Conservation Projects and Paybacks					
	End Use	Measure	Estimated Fixture Costs, $	Estimated Number of Fixtures to be Replaced	Estimated Total Cost, $
Ambulatory Care Center (Estimates not based on measurement but on interview and brief walk through)					
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	110	$1,650
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	$15	250	$3,750
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	10	$4,000
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	80	$8,400
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	10	$700
	Urinals	Replace high use older urinals with low water use urinals	$625	3	$1,875
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	10	$700
	Autoclaves	Install water mizers on autoclaves	$5,294	1	$5,294
	Showers	Install low flow shower heads in locker rooms	$50	4	$200
		Subtotal		478	$26,569
Clinical Sciences					
	Faucets	Reduce pressure on all laboratory distilled faucets	$24	2	$49
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	37	$555
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	15	$225
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	2	$800
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	6	$630
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	1	$70
	Urinals	Replace high use older urinals with low water use urinals	$625	1	$625
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	3	$210
		Subtotal		64	$2,954
Dental Clinics					
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	26	$390
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	23	$345
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	$15	200	$3,000
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	8	$3,200
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	16	$1,680
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	1	$70

UCSF Parnassus Campus Conservation Projects and Paybacks					
	End Use	Measure	Estimated Fixture Costs, $	Estimated Number of Fixtures to be Replaced	Estimated Total Cost, $
	Urinals	Replace high use older urinals with low water use urinals	$625	3	$1,875
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	10	$700
	Autoclaves	Install water mizers on autoclaves	$5,294	5	$26,469
		Subtotal		292	$37,729
Environmental Health & Safety					
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	3	$45
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	3	$1,200
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	3	$315
	Urinals	Replace high use older urinals with low water use urinals	$625	1	$625
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	1	$70
		Subtotal		10	$2,185
Health Sciences East & West					
	Faucets	Reduce pressure on all laboratory distilled faucets	$24	107	$2,619
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	333	$4,995
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	58	$870
	Faucets	Install low flow faucet aerators in all industrial faucets (2.2 gpm)	$15	121	$1,815
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	26	$10,400
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	60	$6,300
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	20	$1,400
	Urinals	Replace high use older urinals with low water use urinals	$625	4	$2,500
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	10	$700
	Autoclaves	Install water mizers on autoclaves	$5,294	8	$42,350
		Subtotal		747	$73,949
Kalmanovitz Library					
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	16	$240
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	19	$1,995
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	8	$560
		Subtotal		35	$2,235
Koret Vision Research Laboratory					

UCSF Parnassus Campus Conservation Projects and Paybacks					
	End Use	Measure	Estimated Fixture Costs, $	Estimated Number of Fixtures to be Replaced	Estimated Total Cost, $
	Faucets	Reduce pressure on all laboratory distilled faucets	$24	19	$465
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	37	$555
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	10	$150
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	2	$800
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	6	$630
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	2	$140
	Autoclaves	Install water mizers on autoclaves	$5,294	1	$5,294
		Subtotal		77	$8,034
Laboratory of Radiobiology					
	Faucets	Reduce pressure on all laboratory distilled faucets	$24	15	$367
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	20	$300
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	5	$75
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	3	$315
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	2	$140
	Autoclaves	Install water mizers on autoclaves	$5,294	1	$5,294
		Subtotal		46	$6,491
Medical Sciences					
	Faucets	Reduce pressure on all laboratory distilled faucets	$24	28	$685
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	241	$3,615
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	32	$480
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	$15	5	$75
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	4	$1,600
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	25	$2,625
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	2	$140
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	14	$980
	Autoclaves	Install water mizers on autoclaves	$5,294	4	$21,175
		Subtotal		355	$31,375
Millberry Union					
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	35	$525

UCSF Parnassus Campus Conservation Projects and Paybacks					
	End Use	Measure	Estimated Fixture Costs, $	Estimated Number of Fixtures to be Replaced	Estimated Total Cost, $
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	10	$4,000
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	16	$1,680
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	10	$700
	Urinals	Replace high use older urinals with low water use urinals	$625	2	$1,250
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	4	$280
		Subtotal		73	$8,155
Parnassus Services					
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	10	$150
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	4	$280
	Urinals	Retrofit older low use urinals with DualFlush handles	$70	7	$490
	Autoclaves	Install water mizers on autoclaves	$5,294	3	$15,881
	Showers	Install low flow shower heads in locker rooms	$50	4	$200.00
		Subtotal		28	$17,001
Regeneration Medicine					
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	13	$195
	Autoclaves	Install water mizers on autoclaves	$5,294	2	$10,587
		Subtotal		15	$10,782
School of Nursing					
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	9	$135
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	15	$225
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	2	$800
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	14	$1,470
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	7	$490
		Subtotal		47	$3,120
Surge					
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	11	$165
		Subtotal		11	$165
UC Hall					
	Faucets	Reduce pressure on all laboratory distilled faucets	$24	25	$611.94

UCSF Parnassus Campus Conservation Projects and Paybacks					
	End Use	Measure	Estimated Fixture Costs, $	Estimated Number of Fixtures to be Replaced	Estimated Total Cost, $
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	29	$435
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	21	$315
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	$15	29	$435
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	3	$1,200
	Toilets	Retrofit older toilet handles with DualFlush handles	$105	14	$1,470
	Urinals	Replace high use older urinals with low water use urinals	$625	1	$625
		Subtotal		122	$5,092
Woods					
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	1	$15
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	3	$45
		Subtotal		4	$60
General					
	General	Employee Training	$5,000	1	$5,000
	General	Cold room solenoid valve	$500	22	$11,000
		Subtotal		1	$16,000
Totals					
1	Faucets	Reduce pressure on all laboratory distilled faucets	$24	196	$4,798
2	Faucets	Install low flow faucet aerators in all industrial faucets (2.2 gpm)	$15	121	$1,815
3	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	$15	484	$7,260
4	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	$15	744	$11,160
5	Showers	Install low flow shower heads in locker rooms	$50	8	$400
6	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$15	369	$5,535
7	Urinals	Retrofit older low use urinals with DualFlush handles	$105	71	$7,455
8	Toilets	Retrofit older toilet handles with DualFlush handles	$105	262	$27,510
9	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	$70	55	$3,850
10	General	Employee Training	$3,000	1	$3,000
11	General	Cold room solenoid valves	$500	22	$11,000
12	General	Public outreach to detect leaks			
13	General	Pursue LEED building certification			

UCSF Parnassus Campus Conservation Projects and Paybacks					
	End Use	Measure	Estimated Fixture Costs, $	Estimated Number of Fixtures to be Replaced	Estimated Total Cost, $
14	General	Maintain 1.6gpd toilet valve			
15	General	Install water efficient fixtures in new construction projects			
16	Autoclaves	Install water mizers on autoclaves	$5,294	25	$132,343
17	Urinals	Replace high use older urinals with low water use urinals	$625	15	$9,375
18	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$400	70	$28,000
		Total All Projects			$253,501
		Total Recommended Projects			$253,501
		Percentage Reduction of Total Use for Recommended Projects			

5.5 Estimated Water, Sewer, and Energy Savings and Paybacks

Table 16 shows the projected water savings and the associated paybacks for all the projects. Projects were identified to be recommended if they had a payback of less than four years. Payback is defined as the number of years for UCSF to recover its investment in a given water conservation project based on the projected water and sewer bill savings associated with implementation of that project. In this case, seventeen water conservation projects identified for the UCSF Parnassus Campus have paybacks which are equal to or less than four years and are recommended.

The value of the saved water for all recommended water conservation projects is an estimated reduction in water, sewer, and energy costs of $266,000 per year (2011 rates). Savings will increase when water, sewer and energy rates increase in the future.

Table 16 shows the estimated annual savings achieved by the completion of the recommended water conservation projects. In terms of priorities, projects should be implemented in the order of increasing payback. The total cost to implement the recommended water conservation projects is estimated to be approximately $254,000. The overall payback for these projects is estimated to be one year. The cost estimates presented in this report are planning level costs, sufficiently accurate to identify projects with attractive paybacks. The exact costs to the UCSF Parnassus Campus to implement these water conservation projects will depend on the specific number and type of fixtures. In addition, MWM recommends that the UCSF Parnassus Campus adjust the estimates contained herein based on estimates provided by plumbing contractors and engineering staff.

Table 16 - Water Conservation Project Savings

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
Ambulatory Care Center (Estimates not based on measurement but on interview and brief walk through)								
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	594 gpd	$2,892	$0	$0	$781	$3,673
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	1,350 gpd	$6,573	$0	$0	$1,774	$8,347
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	360 gpd	$1,753	$0	$0	$0	$1,753
	Toilets	Retrofit older toilet handles with DualFlush handles	345 gpd	$1,680	$0	$0	$0	$1,680
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	90 gpd	$438	$0	$0	$0	$438
	Urinals	Replace high use older urinals with low water use urinals	180 gpd	$876	$0	$0	$0	$876
	Urinals	Retrofit older low use urinals with DualFlush handles	107 gpd	$519	$0	$0	$0	$519
	Autoclaves	Install water mizers on autoclaves	500 gpd	$2,435	$0	$0	$0	$2,435
	Showers	Install low flow shower heads in locker rooms	60 gpd	$292	$0	$0	$0	$292
		Subtotal	3,586 gpd	$17,458	$0	$0	$2,554	$20,013
Clinical Sciences								
	Faucets	Reduce pressure on all laboratory distilled faucets	4 gpd	$0	$40	$0	$0	$40
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	81 gpd	$394	$0	$0	$106	$501
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	150 gpd	$731	$0	$0	$197	$928
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	43 gpd	$210	$0	$0	$0	$210
	Toilets	Retrofit older toilet handles with DualFlush handles	33 gpd	$161	$0	$0	$0	$161
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	16 gpd	$80	$0	$0	$0	$80
	Urinals	Replace high use older urinals with low water use urinals	18 gpd	$88	$0	$0	$0	$88
	Urinals	Retrofit older low use urinals with DualFlush	11 gpd	$51	$0	$0	$0	$51

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
		handles						
		Subtotal	346 gpd	$1,663	$40	$0	$304	$2,007
Dental Clinics								
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	60 gpd	$292	$0	$0	$79	$371
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	589 gpd	$2,865	$0	$0	$773	$3,639
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	478 gpd	$2,325	$0	$0	$627	$2,952
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	215 gpd	$1,049	$0	$0	$0	$1,049
	Toilets	Retrofit older toilet handles with DualFlush handles	156 gpd	$761	$0	$0	$0	$761
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	35 gpd	$169	$0	$0	$0	$169
	Urinals	Replace high use older urinals with low water use urinals	279 gpd	$1,358	$0	$0	$0	$1,358
	Urinals	Retrofit older low use urinals with DualFlush handles	38 gpd	$186	$0	$0	$0	$186
	Autoclaves	Install water mizers on autoclaves	1,500 gpd	$7,304	$0	$0	$0	$7,304
		Subtotal	3,350 gpd	$16,309	$0	$0	$1,480	$17,789
Environmental Health & Safety								
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	76 gpd	$368	$0	$0	$99	$467
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	21 gpd	$104	$0	$0	$0	$104
	Toilets	Retrofit older toilet handles with DualFlush handles	15 gpd	$74	$0	$0	$0	$74
	Urinals	Replace high use older urinals with low water use urinals	54 gpd	$263	$0	$0	$0	$263
	Urinals	Retrofit older low use urinals with DualFlush handles	9 gpd	$44	$0	$0	$0	$44
		Subtotal	166 gpd	$810	$0	$0	$99	$909
Health Sciences East & West								

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
	Faucets	Reduce pressure on all laboratory distilled faucets	270 gpd	$0	$2,437	$0	$0	$2,437
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	2,106 gpd	$10,252	$0	$0	$2,767	$13,019
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	1,171 gpd	$5,700	$0	$0	$1,538	$7,239
	Faucets	Install low flow faucet aerators in all industrial faucets (2.2 gpm)	576 gpd	$0	$0	$631	$757	$757
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	1,008 gpd	$4,908	$0	$0	$0	$4,908
	Toilets	Retrofit older toilet handles with DualFlush handles	1,313 gpd	$6,395	$0	$0	$0	$6,395
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	427 gpd	$2,079	$0	$0	$0	$2,079
	Urinals	Replace high use older urinals with low water use urinals	140 gpd	$684	$0	$0	$0	$684
	Urinals	Retrofit older low use urinals with DualFlush handles	18 gpd	$90	$0	$0	$0	$90
	Autoclaves	Install water mizers on autoclaves	4,000 gpd	$19,476	$0	$0	$0	$19,476
		Subtotal	11,030 gpd	$49,585	$2,437	$631	$5,062	$57,084
Kalmanovitz Library								
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	199 gpd	$970	$0	$0	$262	$1,232
	Toilets	Retrofit older toilet handles with DualFlush handles	187 gpd	$909	$0	$0	$0	$909
	Urinals	Retrofit older low use urinals with DualFlush handles	107 gpd	$523	$0	$0	$0	$523
		Subtotal	386 gpd	$1,878	$0	$0	$262	$2,140
Koret Vision Research Laboratory								
	Faucets	Reduce pressure on all laboratory distilled faucets	20 gpd	$0	$183	$0	$0	$183
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	111 gpd	$540	$0	$0	$146	$686
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	24 gpd	$118	$0	$0	$32	$150
	Toilets	Replace all high use older toilets in public	9 gpd	$43	$0	$0	$0	$43

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
		restrooms with 1.28 gpf type toilets						
	Toilets	Retrofit older toilet handles with DualFlush handles	12 gpd	$58	$0	$0	$0	$58
	Urinals	Retrofit older low use urinals with DualFlush handles	12 gpd	$57	$0	$0	$0	$57
	Autoclaves	Install water mizers on autoclaves	500 gpd	$2,435	$0	$0	$0	$2,435
		Subtotal	688 gpd	$3,250	$183	$0	$177	$3,611
Laboratory of Radiobiology								
	Faucets	Reduce pressure on all laboratory distilled faucets	5 gpd	$0	$49	$0	$0	$49
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	246 gpd	$1,198	$0	$0	$323	$1,521
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	84 gpd	$409	$0	$0	$110	$519
	Toilets	Retrofit older toilet handles with DualFlush handles	24 gpd	$116	$0	$0	$0	$116
	Urinals	Retrofit older low use urinals with DualFlush handles	150 gpd	$730	$0	$0	$0	$730
	Autoclaves	Install water mizers on autoclaves	500 gpd	$2,435	$0	$0	$0	$2,435
		Subtotal	1,009 gpd	$4,888	$49	$0	$434	$5,370
Medical Sciences								
	Faucets	Reduce pressure on all laboratory distilled faucets	98 gpd	$0	$886	$0	$0	$886
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	5,407 gpd	$26,328	$0	$0	$7,105	$33,433
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	1,149 gpd	$5,597	$0	$0	$1,510	$7,107
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	12 gpd	$57	$0	$0	$15	$73
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	1,770 gpd	$8,620	$0	$0	$0	$8,620
	Toilets	Retrofit older toilet handles with DualFlush handles	596 gpd	$2,900	$0	$0	$0	$2,900
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	376 gpd	$1,829	$0	$0	$0	$1,829
	Urinals	Retrofit older low use urinals with DualFlush handles	100 gpd	$485	$0	$0	$0	$485

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
	Autoclaves	Install water mizers on autoclaves	2,000 gpd	$9,738	$0	$0	$0	$9,738
		Subtotal	11,508 gpd	$55,554	$886	$0	$8,631	$65,071
Millberry Union								
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	276 gpd	$1,346	$0	$0	$363	$1,710
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	728 gpd	$3,545	$0	$0	$0	$3,545
	Toilets	Retrofit older toilet handles with DualFlush handles	92 gpd	$447	$0	$0	$0	$447
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	544 gpd	$2,649	$0	$0	$0	$2,649
	Urinals	Replace high use older urinals with low water use urinals	102 gpd	$497	$0	$0	$0	$497
	Urinals	Retrofit older low use urinals with DualFlush handles	15 gpd	$75	$0	$0	$0	$75
		Subtotal	1,742 gpd	$8,483	$0	$0	$363	$8,847
Parnassus Services								
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	500 gpd	$2,435	$0	$0	$657	$3,092
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	250 gpd	$1,217	$0	$0	$0	$1,217
	Urinals	Retrofit older low use urinals with DualFlush handles	38 gpd	$183	$0	$0	$0	$183
	Autoclaves	Install water mizers on autoclaves	1,500 gpd	$7,304	$0	$0	$0	$7,304
	Showers	Install low flow shower heads in locker rooms	350 gpd	$1,704	$0	$0	$0	$1,704
		Subtotal	2,638 gpd	$12,842	$0	$0	$657	$13,499
Regeneration Medicine								
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	61 gpd	$295	$0	$0	$80	$375
	Autoclaves	Install water mizers on autoclaves	1,000 gpd	$4,869	$0	$0	$0	$4,869
		Subtotal	1,061 gpd	$5,164	$0	$0	$80	$5,244
School of Nursing								

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	13 gpd	$61	$0	$0	$16	$78
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	203 gpd	$987	$0	$0	$266	$1,254
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	359 gpd	$1,748	$0	$0	$0	$1,748
	Toilets	Retrofit older toilet handles with DualFlush handles	145 gpd	$707	$0	$0	$0	$707
	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	936 gpd	$4,555	$0	$0	$0	$4,555
		Subtotal	1,655 gpd	$8,059	$0	$0	$283	$8,342
Surge								
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	53 gpd	$258	$0	$0	$70	$328
		Subtotal	53 gpd	$258	$0	$0	$70	$328
UC Hall								
	Faucets	Reduce pressure on all laboratory distilled faucets	25 gpd	$0	$224	$0	$0	$224
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	19 gpd	$92	$0	$0	$25	$116
	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	281 gpd	$1,370	$0	$0	$370	$1,740
	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	54 gpd	$261	$0	$0	$70	$331
	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	257 gpd	$1,252	$0	$0	$0	$1,252
	Toilets	Retrofit older toilet handles with DualFlush handles	137 gpd	$668	$0	$0	$0	$668
	Urinals	Replace high use older urinals with low water use urinals	86 gpd	$421	$0	$0	$0	$421
		Subtotal	859 gpd	$4,063	$224	$0	$465	$4,752
Woods								
	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	45 gpd	$221	$0	$0	$60	$280
	Faucets	Install low flow faucet aerators in all bathroom	6 gpd	$29	$0	$0	$8	$37

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
		faucets (0.5 gpm)						
		Subtotal	51 gpd	$250	$0	$0	$67	$317
General								
	General	Employee Training	7,264 gpd	$35,371	$0	$0	$0	$35,371
	General	Cold room solenoid valve	2,467 gpd	$12,010	$0	$0	$0	$12,010
		Subtotal	7,264 gpd	$47,381	$0	$0	$0	$47,381
Totals								
1	Faucets	Reduce pressure on all laboratory distilled faucets	382 gpd	$0	$3,445	$0	$0	$3,445
2	Faucets	Install low flow faucet aerators in all industrial faucets (2.2 gpm)	576 gpd	$0	$0	$631	$0	$631
3	Faucets	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	1,970 gpd	$9,593	$0	$0	$2,589	$12,182
4	Faucets	Install low flow aerators in all laboratory faucets (2.2 gpm)	6,953 gpd	$33,855	$0	$0	$9,136	$42,992
5	Showers	Install low flow shower heads in locker rooms	358 gpd	$1,741	$0	$0	$470	$2,210
6	Faucets	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	5,410 gpd	$26,343	$0	$0	$7,109	$33,452
7	Urinals	Retrofit older low use urinals with DualFlush handles	460 gpd	$2,239	$0	$0	$604	$2,844
8	Toilets	Retrofit older toilet handles with DualFlush handles	3,055 gpd	$14,875	$0	$0	$4,014	$18,890
9	Toilets	Replace diaphragm in 1.6 gpf toilets in public restrooms	2,253 gpd	$10,971	$0	$0	$0	$10,971
10	General	Employee Training	7,264 gpd	$35,371	$0	$0	$9,545	$44,916
11	General	Cold room solenoid valves	2,467 gpd	$12,010	$0	$0	$0	$12,010
12	General	Public outreach to detect leaks						
13	General	Pursue LEED building certification						
14	General	Maintain 1.6gpd toilet valve						
15	General	Install water efficient fixtures in new construction projects						
16	Autoclaves	Install water mizers on autoclaves	11,500 gpd	$55,995	$0	$0	$0	$55,995
17	Urinals	Replace high use older urinals with low water use	864 gpd	$4,209	$0	$0	$0	$4,209

UCSF Parnassus Campus Conservation Projects and Paybacks								
	End Use	Measure	Estimated Savings, gpd	Value of Water and Sewer Savings, $/Year	Value of Distilled Water Savings, $/Year	Value of Industrial Water Savings, $/Year	Value of Energy Savings, $/Year	Total Savings $/Year
		urinals						
18	Toilets	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	4,279 gpd	$20,835	$0	$0	$0	$20,835
		Total All Projects	47,791 gpd					$265,582
		Total Recommended Projects	47,791 gpd					$265,582
		Percentage Reduction of Total Use for Recommended Projects	20%					

6.0 RECOMMENDATIONS

UCSF Parnassus Campus has a history of improving water efficiency, and MWM has identified a number of projects that the campus can fund to improve their water efficiency even further. MWM recommends that the UCSF Parnassus Campus implement the water conservation programs that are cost effective and within available resources.

Implementation of all of the recommended projects is estimated to result in a 20% percent savings in medical school water use and a savings of approximately $266,000 per year (2011 rates). Savings will be higher when utility rates increase. The recommended projects, when combined, have a payback of approximately one year. This is a very favorable return on investment and shows that implementing these projects could lead to large water savings within the year.

Table 17 - Recommended Conservation Projects for UCSF Parnassus Campus

	Measure	Total Project Cost, $	Total Annual Savings, $	Payback Years	Number of Devices
1	Reduce pressure on all laboratory distilled faucets	$4,798	$3,445	1.4	196
2	Install low flow faucet aerators in all industrial faucets (2.2 gpm)	$1,815	$631	2.9	121
3	Install low flow faucet aerators in all exam room faucets (1.5 gpm)	$7,260	$12,182	0.6	484
4	Install low flow aerators in all laboratory faucets (2.2 gpm)	$11,160	$42,992	0.3	744
5	Install low flow shower heads in locker rooms	$400	$2,210	0.2	8
6	Install low flow faucet aerators in all bathroom faucets (0.5 gpm)	$5,535	$33,452	0.2	369
7	Retrofit older low use urinals with DualFlush handles	$7,455	$2,844	2.6	71
8	Retrofit older toilet handles with DualFlush handles	$27,510	$18,890	1.5	262
9	Replace diaphragm in 1.6 gpf toilets in public restrooms	$3,850	$10,971	0.4	55
10	Employee Training	$3,000	$44,916	0.1	1
11	Cold room solenoid valves	$11,000	$12,010	0.9	22
12	Public outreach to detect leaks	N/A	N/A	N/A	N/A
13	Pursue LEED building certification	N/A	N/A	N/A	N/A
14	Maintain 1.6gpd toilet valve	N/A	N/A	N/A	N/A
15	Install water efficient fixtures in new construction projects	N/A	N/A	N/A	N/A
16	Install water mizers on autoclaves	$132,343	$55,995	2.4	25
17	Replace high use older urinals with low water use urinals	$9,375	$4,209	2.2	15
18	Replace all high use older toilets in public restrooms with 1.28 gpf type toilets	$28,000	$20,835	1.3	70
	Total Recommended Projects	$253,501	$265,582		

The number of fixtures to be replaced is shown in Table 17 above. The small and medium projects are intended for UCSF Facilities Management staff to replace these fixtures over time. The large projects may require outside help to complete. The fixture replacement costs include labor but this can be mitigated by using current staff. If it will take many months for staff to implement these

projects, then replacement could be done quicker using outside contractors at a higher replacement cost.

MWM can suggest the following next steps for the project:

1. Meet with SFPUC to maximize rebate/financial incentives.
2. Prioritize and select projects for UCSF to implement.
3. Decide if projects will be implemented by in house staff or by a contractor.
4. Finalize the individual project costs and set aside funds in the budget.
5. Assign a project manager to be in charge of implementation.
6. Record individual item costs (i.e. cost of each toilet or urinal installation) and note the installation dates of new equipment.