Agenda

1. Welcome and Introductions
2. Agenda Overview
3. UCSF Mission Bay Hospitals Project Overview and Background
4. Helipad Operations
5. Sound Analysis
6. Residential Sound Reduction Program
7. Questions
Mission Bay Hospitals Project Overview and Background
UCSF Medical Center at Mission Bay
UCSF Mission Bay Hospitals Project

Background

- The new UCSF Medical Center at Mission Bay consists of:
  - UCSF Benioff Children’s Hospital San Francisco - A 183-bed children's hospital with primary care and pediatric emergency services
  - UCSF Bakar Cancer Hospital - A 70-bed hospital for adult cancer patients
  - UCSF Betty Irene Moore Women’s Hospital - A women’s hospital for cancer care, women’s specialty services, and a 36-bed birth center
  - Gateway Medical Building for outpatient services including radiation oncology for cancer patients
  - A helipad
  - An energy center and parking
Since 2001, UCSF has maintained an open dialogue with the community about the new hospitals and has held more than 60 community meetings.

Neighbors provided input on topics such as site selection, height/bulk/massing, design, open space, traffic, the 4th Street Public Plaza and the new helipad.

This feedback has been extremely valuable in helping shape hospital design and influencing helipad planning and operations.
UCSF Mission Bay Hospitals Project

Key Helipad Facts

- The helipad provides more immediate access for the most critically ill children and for women with serious pregnancy complications

- Patients will be transported from other hospitals, which are not able to provide the resources, level of care, and numbers of pediatric specialists available at UCSF Benioff Children’s Hospital San Francisco

- Helicopter transport/admission must first be approved by a UCSF physician

- Hovering is not a part of a routine helipad landing — unlike news and traffic helicopters

- Approximately 40 transports are projected per month
• The helipad has met all requirements and obtained approvals including:
  – Federal Aviation Administration (December 2008)
  – UC Office of the President (April 2009)
  – San Francisco Board of Supervisors (July 2009)
  – California Department of Transportation (November 2009 & September 2013)
• Located helipad at northern-most medical building away from campus perimeter

• Placed elevator shaft south of the landing pad to deflect sound away from nearest housing
UCSF Mission Bay Hospitals Project

Helicopter Test Flight 2007
Helicopter Flight Paths

Primary flight path is:
• Over San Francisco Bay to extent possible
• Away from residences

Flight path may be altered by pilot based on weather conditions.
Helipad Operations
Helipad Operations

On-Going Operations Plan

- Medical transport team based in Oakland
- Use flight paths described in the 2008 Environmental Impact Report (EIR) unless diversion necessary for safety
  - Primary approach/departure path as much as feasible
  - Alternate and secondary flight paths only if necessary for safety
- UCSF’s contracts with air medical companies require pilots to be routinely trained about flight paths
Helipad Operations

On-Going Operations Plan

- Maintain log of helicopter activity and community issues
  - Phone number and email address for community concerns will be published before hospital opens Feb. 1, 2015
- Establish a committee including community members that meets periodically to address any outstanding UCSF helicopter noise issues or concerns
  - These meetings will be quarterly but may change as needs change
Helipad Operations

**Ground and Air Transport Team**

- UCSF Benioff Children’s Hospital San Francisco has been providing critical care transport for newborns and children for nearly 50 years
- Team is comprised of two specially trained RNs, Nurse Practitioners and Specialty Physicians
- In 2014, the transport team brought over 600 children and infants to UCSF from nearly 80 referring facilities
Sound Analysis
Community Noise Equivalent Level, CNEL

- Describes noise exposure over 24-hour period
- Includes the number of noise events by time of day
  - Day (7am to 7pm)
  - Evening (7pm to 10pm) – add about 5 dB
  - Night (10pm to 7am) – add about 10 dB

Single-Event Noise Exposure Level, SENEL

- Describes noise exposure of complete single helicopter noise event (arrival or departure)
- SENEL includes the noise level and the duration of single noise events
Sound Analysis
2007 Estimate (UCSF EIR)

Federal and State Standard: 65 dB CNEL

UCSF EIR Threshold: 95 dB SENEL (estimated)

Note: Actual noise levels measured from test flight were lower than estimated
Sound Analysis

UCSF EIR Requirements

• SENEL 95 dB exterior noise level
  – UCSF EIR significance threshold
  – Corresponds to 80 dB interior noise level
    Note: Assumes residential structures minimally reduce noise by 15 dB
  – Based on potential awakening research by the Federal Interagency Committee on Aircraft Noise (FICAN)

• UCSF RSRP program goes above and beyond standards and requirements to address noise effects from single helicopter events
Sound Analysis

Sound Analysis


• Two UCSF helicopter Transports simulated
• Measured outside noise levels at six community locations
  – Noise levels ranged from less than audible to 90 dB SENEL
  – Noise levels were less than EIR significance threshold of 95 dB SENEL
Sound Analysis

Implications of the 2014 Measurements

• Less noise measured from “Day in the Life” helicopter operations than estimated in 2007
  – Hospitals’ buildings provide shielding including the elevator shaft strategically positioned south of the helipad
  – Extensive rooftops and grounds landscaping provide sound absorption (model assumed acoustic “hard” surfaces)

• If noise measurements in February 2015 show similar results
  – 95 dB SENEL may not extend into residential areas
  – If that is the case, the RSRP may not be needed
# Top-Ranked Children’s & Women’s Hospitals in Urban Areas

<table>
<thead>
<tr>
<th></th>
<th>Hospital</th>
<th>City</th>
<th>Noise Metric</th>
<th>Transports/Day</th>
<th>Limits on Hours</th>
<th>Sound Insulation Mitigation</th>
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<tbody>
<tr>
<td>1.</td>
<td>Johns Hopkins Hospital</td>
<td>Baltimore</td>
<td>No study</td>
<td>3</td>
<td>No</td>
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<td>2.</td>
<td>Stanford Hospital</td>
<td>Palo Alto</td>
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<td>3.</td>
<td>UCLA Medical Center</td>
<td>Los Angeles</td>
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<td>4.</td>
<td>Children’s Memorial Hospital</td>
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<td>5.</td>
<td>Brigham &amp; Women’s Hospital (helipad for Boston Children’s Hosp.)</td>
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<td>6.</td>
<td>Children’s Hospital</td>
<td>Philadelphia</td>
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<tr>
<td>7.</td>
<td>Methodist Hospital (helipad for Texas Children’s Hosp.)</td>
<td>Houston</td>
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<td>8.</td>
<td>Children’s Medical Center</td>
<td>Dallas</td>
<td>No study</td>
<td>Information not available</td>
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## Other Northern California Hospitals

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<tr>
<th>Hospital</th>
<th>City</th>
<th>Noise Metric</th>
<th>Transports/Day</th>
<th>Limits on Hours</th>
<th>Sound Insulation Mitigation</th>
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<tr>
<td>1. Santa Rosa Memorial</td>
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<td>2. Benioff Children’s Hospital</td>
<td>Oakland</td>
<td>CNEL &amp; EL</td>
<td>1.5</td>
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<td>1 house</td>
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<td>3. John Muir Medical Center</td>
<td>Concord</td>
<td>CNEL</td>
<td>0.5</td>
<td>No</td>
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<td>4. UC Davis Medical Center</td>
<td>Sacramento</td>
<td>CNEL</td>
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<td>No</td>
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<td>5. Sutter Hospital</td>
<td>Sacramento</td>
<td>SEL</td>
<td>Information not available</td>
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<td>No</td>
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<td>6. Kaiser Permanente Medical Center</td>
<td>Santa Clara</td>
<td>SEL</td>
<td>0.04</td>
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<td>7. Santa Clara Valley Medical Center</td>
<td>San Jose</td>
<td>No study</td>
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UCSF Residential Sound Reduction Program (RSRP)
UCSF Residential Sound Reduction Program

Goal

- To reduce noise level from UCSF helicopters in interior sleeping areas of qualifying properties
UCSF Residential Sound Reduction Program

Next Steps

- During the start-up period (8-12 weeks after opening), UCSF will measure the noise from helicopter operations for about two weeks.
- Sound consultant will determine when we have acquired enough data for validation of sound model.
- Sound data will be collected in six locations.
- The 95 dB SENEL (single-event) RSRP noise contour will be redrawn to reflect the noise environment as measured (contour might not extend into residential areas).
UCSF Residential Sound Reduction Program

Qualifications

• Property is located in the blocks within or touched by the 2015 RSRP contour
  – Final contour will be drawn after start-up period

• Property is a legal residential or live/work unit

• Noise level in interior sleeping area at or greater than 80 dB SENEL with windows closed
  – Note: If unit is loft with no separate sleeping area, entire unit will be considered for sound mitigation
UCSF Residential Sound Reduction Program

Implementation

- Applications will be available June 2015
- Property owners have 12 months after notification to apply (June 2015-2016)
  - UCSF will send a reminder 3 months before the end of the application period
- Qualified UCSF consultant recommends sound reduction measures that may include:
  - standard acoustical windows
  - standard acoustical doors
  - weather stripping around doors and other openings
  - insulate or double pane skylights
  - ventilation improvements
UCSF will provide the legal owner(s) with the details of a recommended sound reduction package with the goal of reducing noise levels by at least 5-dB, which is a noticeable improvement.

- San Francisco Planning Code regarding historic district or historic structures will apply. Wood windows may be required. Related costs will be included.

Legal owner(s) will submit to UCSF three bids from pre-approved contractors to install the recommended sound reduction measures.

Bids will be reviewed for accuracy and appropriateness.
UCSF Residential Sound Reduction Program

Agreement

• UCSF pays the property owner in the amount of the lowest of the three bids

• Property owner is responsible for making sound reduction improvements

• Property owner releases UCSF from future claims for UCSF helicopter noise at the property
  
  Release shall be in the form of an easement, which is recorded with the City and County of San Francisco
Questions