



SAN FRANCISCO PLANNING DEPARTMENT

Addendum to Environmental Impact Report

Date: December 19, 2014
Case No.: **2007.0206E**
Project Title: Sutro Tower Antenna Additions and Site and Erosion Control Improvements
EIR: Sutro Tower Digital Television Project Final EIR
Zoning: RH-1(D); 40X Height and Bulk District
Block/Lot: 2724/003
Lot Size: 224,996 square feet
Project Sponsor: Sutro Tower, Inc.
Eric Dausman – 415.681.8850 – ericd@sutrotower.com
Lead Agency: San Francisco Planning Department
Staff Contact: Tania Sheyner – 415.575.9127 – tania.sheyner@sfgov.org

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

PROJECT DESCRIPTION

Background

On October 23, 2008, the San Francisco Planning Commission certified the Sutro Tower Digital Television Project Final Environmental Impact Report (FEIR), in compliance with the California Environmental Quality Act (CEQA), and approved the conversion of television antennas on Sutro Tower from an analog/digital system to an all-digital system (hereafter referred to as the 2008 project). These improvements included:

1. replacement of the nine existing analog main antennas at the top of Sutro Tower with no more than five digital main antennas at the same location;
2. structural upgrades to the tower to meet applicable *Building Code* wind resistance requirements for an “essential facility” and accommodate the placement of new digital television equipment on the tower;
3. removal of four digital main television antennas between tower Levels 5 and 6 (see Figure 2 for tower level locations);
4. removal of nine analog auxiliary television antennas on tower Level 2 and installation of two digital auxiliary antennas extending between tower Levels 3 and 4 and one digital auxiliary antenna at tower Level 2;
5. alteration, replacement or addition of a number of small ancillary antennas and equipment on the tower, transmitter building rooftop and secured grounds; and
6. addition of auxiliary equipment and electrical, elevator and public safety improvements.

The improvements described above were completed in the summer of 2011.¹

Setting

The project site is located at 1 La Avanzada Street in San Francisco's Midtown Terrace neighborhood (see **Figure 1**, Project Location). The 5.6-acre site is owned by Sutro Tower, Inc., the project sponsor. The site contains a 977-foot tall steel communications tower (Sutro Tower), a three-story 31,000-square-foot transmission building, a one-story 1,200 square-foot garage and storage building, and a one-story guard station, emergency generators, underground storage tanks, ancillary antennas and equipment associated with radio communications, landscaping and a surface parking lot.² The facility, although not the entire parcel, is completely enclosed within a security fence. Most of the area immediately surrounding these facilities, including the great majority of the northern half of the project site, consists of open space. The tower has been in operation since 1973.

The tower is located on one of the highest points in San Francisco (834 feet above sea level) and is generally visible from most places in the City. Surrounding neighborhoods include Forest Hill and the Sunset to the west, the Castro and Noe Valley to the east, Diamond Heights and Miraloma Park to the south, and Haight Ashbury and Cole Valley to the north. La Avanzada Street forms the northern and a portion of the eastern boundary of the project site. Roughly the southmost 320 feet of La Avanzada Street is owned by the project sponsor (Sutro Tower, Inc.). Summit Reservoir, owned and operated by the San Francisco Public Utilities Commission (SFPUC), is located adjacent to and east of the Sutro Tower property. Open space exists on undeveloped land located immediately south of the project site. The closest residences to the project site are located along Dellbrook Avenue, Farview Court, and Palo Alto Avenue. Residential properties abut portions of the west side of the project site boundary; the nearest dwelling is located on Dellbrook Avenue, approximately 200 feet from the tower.

Proposed Modifications

The project sponsor proposes a number of additional improvements at the project site, hereafter referred to as the modified project. Under the modified project, proposed improvements on Sutro Tower include the addition of 50 broadcast and reception antennas, microwave dish antennas and camera mounts at various levels on the tower, and replacement and relocation of one existing auxiliary radio antenna to a higher level on the tower.³ A limited number of the newly-proposed additions would be main or auxiliary broadcasting

¹ It should be noted that in January 2011, the Planning Commission also determined that the subsequent addition to the tower of fourteen new antennas and one microwave dish for wireless data service provider Clearwire, LLC fell within the project analyzed in the 2008 FEIR and was not subject to further CEQA analysis. These subsequent improvements were completed in May 2013.

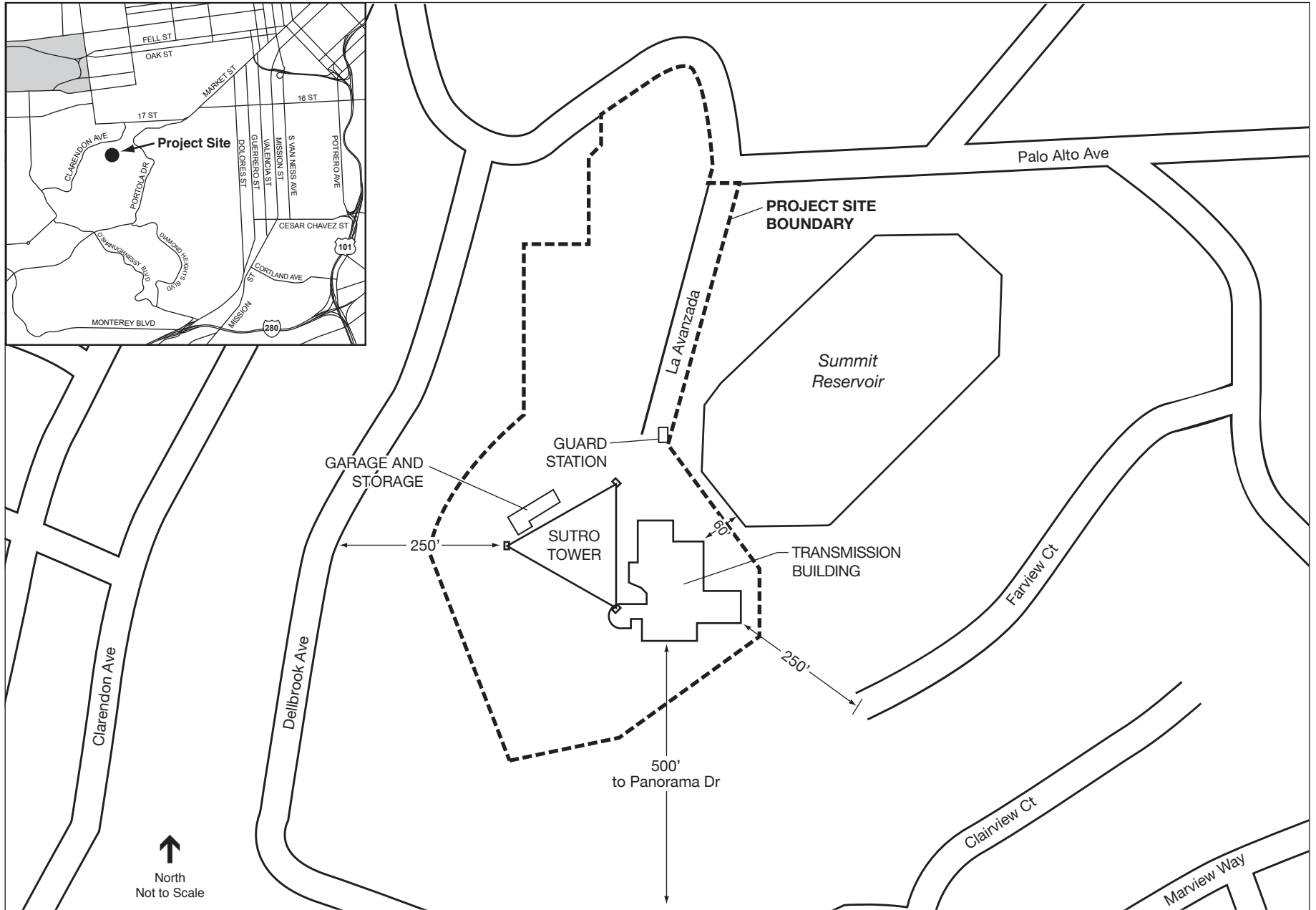
² The three-story transmission building is three stories (approximately 40 feet high) on the reservoir side and two stories (approximately 28 feet high) on the parking lot side. The garage and storage building is approximately 16 feet high. The guard shack is approximately nine feet high.

³ *Broadcast antennas* – These types of antennas radiate energy from an oscillating electric current in conjunction with the transmission of radio/television signals on specific frequencies. They are the primary source of radio frequency radiation ("RFR") associated with tower operations. Such antennas are generally the largest on the tower and located at the higher levels to allow for a broader range of coverage, as well as to minimize ground level RFR exposure.

Reception antennas – These types of antennas receive radio/television signals sent on specific frequencies. They are not a source of RFR and are generally smaller than broadcast antennas.

Auxiliary antennas – These types of antennas are used as back-up by radio/television broadcasters in limited situations when main antennas are non-operational, typically due to repair, replacement, testing or in emergency situations.

Microwave dish antennas – These types of antennas receive and transmit radio signals for a variety of communications uses and require an unobstructed line of site with other transmitting sources. They are found in numerous locations on the tower in a wide range of sizes, but are typically much smaller than broadcast/reception antennas. Since the antennas concentrate the energy into a beam towards a distant point, their contribution to radio frequency radiation associated with tower operation is minimal.



SOURCE: ESA, 2014

2007.0206E: Sutro Tower Antenna Additions and Site and Erosion Control Improvements

Figure 1
Project Location

antennas. In part, such proposed antennas are intended to ensure accessibility to public broadcasting in an emergency, and for certain television station tenants, to provide increased access to diverse groups of foreign language viewers, including in Spanish and several Asian languages. Most of the newly-proposed additions are smaller-scale antennas and equipment, including 15 antennas for San Francisco's Community Broadband Network which provides Internet access for the San Francisco Housing Authority's developments and several San Francisco Public Library branches among other facilities,⁴ and six dish antennas requested by the BayWEB emergency response communication system that would provide region-wide interoperable communications for law enforcement and first responders.

In addition, under the modified project, a number of proposed improvements would occur elsewhere on the project site. This includes the installation of an approximately 6-foot-tall, 62-foot long retaining wall southeast of the transmission building; implementation of a number of on-site erosion control and drainage improvements on the site's southern hillside; installation of several exterior stairways and walkways; repair, replacement, and widening of a portion of the existing 16-foot-wide driveway; and installation of an at-grade receive-only satellite dish antenna and foundation to replace an existing smaller ground-level antenna serving a similar purpose.

These improvements are described in detail, below, grouped as Antennas/Equipment Additions and Other Site Improvements.

Antennas/Equipment Additions

The antennas/equipment improvements proposed under the modified project include the following:

- 2 additional TV main broadcast antennas
- 1 additional FM radio main broadcast antenna
- 1 relocated existing FM auxiliary antenna
- 1 additional standby FM auxiliary antenna
- 1 additional TV auxiliary antenna
- 1 FM radio translator antenna
- 15 community broadband antennas
- 16 point-to-point microwave antennas (of which 3 are receive-only)
- 11 other receive-only antennas
- 2 camera mounts
- 1 ground-level satellite receive-only dish

In total, 50 new broadcast and reception antennas, microwave dish antennas and camera mounts would be installed at various levels on the tower, one existing auxiliary radio antenna would be replaced and relocated to a higher level on the tower, and one ground-level satellite dish antenna would be installed approximately 30 feet west of, and replacing, an existing smaller antenna.

⁴ Other facilities include the Literacy for Environmental Justice EcoCenter; the Sunset Neighborhood Beacon Center; and certain sites across the City that will enable the San Francisco Department of Technology to expand computer access and training for seniors and those with disabilities.

Figure 2 illustrates the existing and proposed configuration of antennas on Sutro Tower under the modified project. **Table 1** provides detail of the proposed tower and ground-level antennas/equipment improvements, including the type of proposed antenna/equipment; customer; height above ground, weight, and power of the antenna/equipment; and the purpose of each proposed antenna/equipment.

Under the modified project, five of the proposed antennas to be installed on the tower (see Table 1, Reference Nos. 1 through 5) and the antenna proposed to be replaced and relocated from the tower second level to fifth level (Table 1, Reference No. 51) would consist of main or auxiliary/emergency broadcasting antennas for various television and radio stations. The remaining antennas/equipment additions proposed under the modified project would be comparatively smaller-scale, with all but two weighing 200 pounds or less. Six antennas (see Table 1, Reference Nos. 20 through 25) are proposed at the request of the San Francisco Department of Emergency Management to support the City's participation in the Bay Area Wireless Enhanced Broadband (BayWEB) network, a new region-wide interoperable high-speed communications network under development for use by law enforcement personnel and first responders. Fifteen of the new antennas (see Table 1, Reference Nos. 26 through 40) are proposed at the request of the San Francisco Department of Technology to support the City's Community Broadband Network, which provides WiFi internet access to numerous community organizations, certain San Francisco Public Library branches, and all San Francisco Housing Authority developments. The remaining new antennas would provide additional communications capabilities for existing television station and other users of Sutro Tower. All tower antenna/equipment proposed under the modified project would be composed of non-reflective metal (unpainted) or painted the same color as the existing antennas (white) or structure (in approved colors of aviation red or white) depending on placement and location on the tower.

The proposed at-grade, receive-only satellite dish antenna would replace an existing 10-foot diameter circular ground-level antenna near the same location, which serves a similar purpose. This proposed rectangular antenna would measure approximately 42 feet by 22 feet and have a stock white color. The proposed satellite dish antenna would be installed approximately 30 feet west of the existing satellite dish antenna being replaced (see also description of proposed satellite dish antenna foundation, below).

Other Site Improvements

A number of other site improvements would occur on the property. As illustrated in **Figure 3**, this includes the installation of a retaining wall southeast of the transmission building; implementation of a number of on-site erosion control and drainage improvements on the site's southern hillside; installation of several exterior stairways and walkways; installation of a foundation to accommodate the proposed replacement ground-level satellite dish antenna; and, as illustrated in **Figure 4**, repair, replacement, and widening of a portion of the existing driveway. Each of these improvements is described in detail below.

Retaining Wall

As shown in Figure 3, a concrete retaining wall is proposed just southeast of the transmission building to provide slope stabilization and address soil erosion that has occurred at this location over time. The retaining wall would measure approximately 62 feet in length, one-foot in width, and would vary in height with a maximum of approximately six feet above grade. Thirteen 24-inch diameter concrete piers would be installed along the length of the retaining wall to provide structural support. The piers would be drilled between 8 and 12 feet into underlying bedrock. A perforated drain pipe embedded in drain rock would be installed along the length of the retaining wall to facilitate drainage away from the wall.

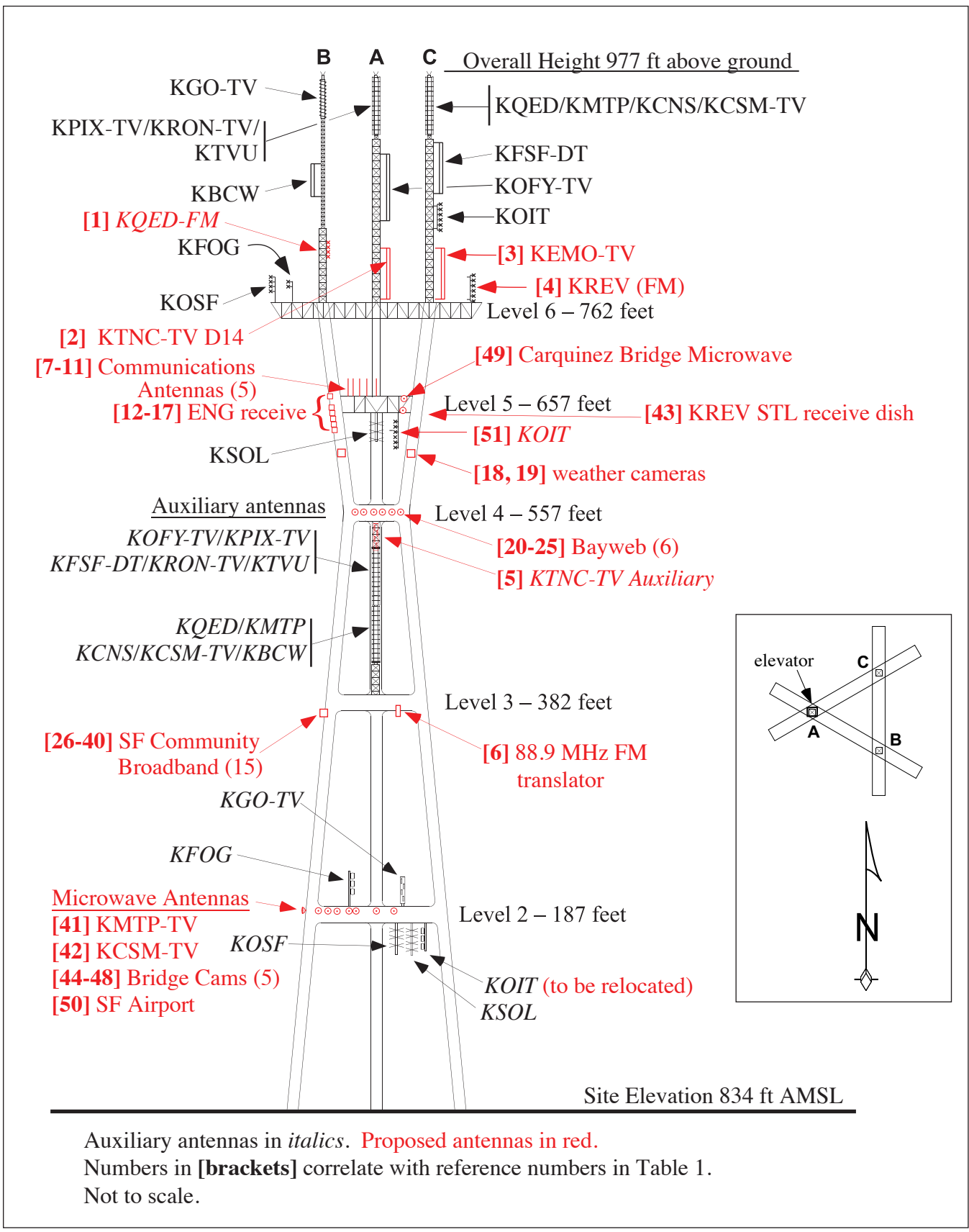


Figure 2
 Summary of Proposed Additions to
 Sutro Tower (View from East)

**TABLE 1
PROPOSED ANTENNAS/EQUIPMENT IMPROVEMENTS**

Reference No.	Description	Customer	Height Above Ground (ft.)	Dimensions (ft.)	Weight (lbs)	Power/Polarization ^a	Purpose
<i>Sutro Tower</i>							
1	Emergency FM Antenna	KQED FM Radio	815	40 feet in height, rototiller style	700	20 kW/C	Adds emergency capability for KQED Radio
2	TV (Channel 14) Main Broadcast Antenna	KTNC Television	800	56.1 feet in height, 1.5 feet in diameter	2,000	1,000 kW/E	Improve Bay Area coverage
3	TV (Channel 32) Main Broadcast Antenna	KEMO Television	800	48 feet in height, 3 feet in diameter	2,000	200 kW/H	Booster to improve San Francisco coverage
4	FM Radio Main Broadcast Antenna	KREV FM Radio	762	30 feet in height, mounted on a 30-foot pipe, rototiller style	1,000	0.27 kW/C	Moves main antenna to higher location
5	TV (Channel 14) Broadcast Auxiliary Antenna	KTNC Television	525	27 feet in height, 1.5 feet in diameter	1,000	250 kW/E	Improve Bay Area coverage
6	FM Translator Antenna	KLOVE (Educational Media Foundation)	375	2 multi-element antennas, each approximately 6 feet in height and 7.5 feet in length, plus pipe	200	0.070 kW/C	Translator on 88.9 MHz to improve coverage in San Francisco
7	Communications Receive Antenna (136-174 MHz)	Sutro Tower Level 3 and 4 customers	657	11.5 feet in height, 3 inches in diameter	32	none-receive only	Technology change - splits receivers on tower Levels 3 and 4
8	Communications Receive Antenna (330-420 MHz)	Sutro Tower Level 3 and 4 customers	657	6.9 feet in height, 3 inches in diameter	11	none-receive only	Technology change - splits receivers on tower Levels 3 and 4
9	Communications Receive Antenna (400-520 MHz)	Sutro Tower Level 3 and 4 customers	657	16.4 feet in height, 3 inches in diameter	18	none-receive only	Technology change - splits receivers on tower Levels 3 and 4
10	Communications Receive Antenna (746-806 MHz)	Sutro Tower Level 3 and 4 customers	657	11.8 feet in height, 3 inches in diameter	8	none-receive only	Technology change - splits receivers on tower Levels 3 and 4
11	Communications Receive Antenna (806-860 MHz)	Sutro Tower Level 3 and 4 customers	657	6 feet in height, 3 inches in diameter	5	none-receive only	Technology change - splits receivers on tower Levels 3 and 4
12	Second ENG Receive Antenna	KTVU TV	670	5.3 feet in height, 4.7 feet in diameter	200	none-receive only	Add southeast news truck coverage
13	Second ENG Receive Antenna	KRON TV	650	5.3 feet in height, 4.7 feet in diameter	200	none-receive only	Add southeast news truck coverage
14	Second ENG Receive Antenna	KPIX TV	640	5.3 feet in height, 4.7 feet in diameter	200	none-receive only	Add southeast news truck coverage
15	Second ENG Receive Antenna	KGO TV	630	5.3 feet in height, 4.7 feet in diameter	200	none-receive only	Add southeast news truck coverage
16	Second ENG Receive Antenna	KNTV TV	620	5.3 feet in height, 4.7 feet in diameter	200	none-receive only	Add southeast news truck coverage

TABLE 1 (Continued)
PROPOSED ANTENNAS/EQUIPMENT IMPROVEMENTS

Reference No.	Description	Customer	Height Above Ground (ft.)	Dimensions (ft.)	Weight (lbs)	Power/Polarization ^a	Purpose
<i>Sutro Tower (cont.)</i>							
17	Second ENG Receive Antenna	KFSF TV	610	5.3 feet in height, 4.7 feet in diameter	200	none-receive only	Add southeast news truck coverage
18	Camera mount	All 6 Local TV news stations	595	Five (5) cameras, each approximately 1.3 feet in height and 1.0 feet in width, mounted on a pipe 10 feet in height and 4 inches in diameter	40	none	Adds mounts for weather coverage to tower south leg
19	Camera mount	All 6 Local TV news stations	590	Five (5) cameras, each approximately 1.3 feet in height and 1.0 feet in width, mounted on a pipe 10 feet in height and 4 inches in diameter	40	none	Adds mounts for weather coverage to tower north leg
20-25	6 Microwave Dish Antennas	BayWEB	550	6.4 feet in diameter, 4.9 feet in depth	200 (each)	~66 dBm	Technology change – public safety agency request
26-40	15 San Francisco Community Broadband Antennas	Department of Technology, City and County of SF	375	1.5 feet in height, 1.4 feet in depth	50 (each)	~47 dBm/H&V	WiFi for low income San Francisco residents
41	Microwave Dish Antenna	KMTP	187	6.5 feet in diameter, 4.4 feet in depth	400	none-receive only	Adds microwave STL receiver for KMTP
42	Microwave Dish Antenna	KCSM	187	6.5 feet in diameter, 4.4 feet in depth	400	none-receive only	Adds microwave STL receiver for KCSM
43	Microwave Dish Antenna	KREV FM	650	4 feet in diameter, 4 feet in depth	50	none-receive only	Studio to transmitter relay
44	Microwave Dish Antenna for San Francisco-Oakland Bay Bridge camera feed	All 6 TV news stations	187	6.4 feet in diameter, 4.9 feet in depth	200	~62.4 dBm	Technology change – new bridge camera feed for all stations to share
45	Microwave Dish Antenna for San Mateo Bridge camera feed	All 6 TV news stations	187	6.4 feet in diameter, 4.9 feet in depth	200	~62.4 dBm	Technology change – new bridge camera feed for all stations to share
46	Microwave Dish Antenna for Golden Gate Bridge camera feed	All 6 TV news stations	187	3.3 feet in diameter, 1.9 feet in depth	50	~66 dBm	Technology change – new bridge camera feed for all stations to share
47	Microwave Dish Antenna for Richmond-San Rafael Bridge camera feed	All 6 TV news stations	187	6.4 feet in diameter, 4.9 feet in depth	200	~54 dBm	Technology change – new bridge camera feed for all stations to share
48	Microwave Dish Antenna for Dumbarton Bridge camera feed	All 6 TV news stations	187	6.4 feet in diameter, 4.9 feet in depth	200	~66 dBm	Technology change – new bridge camera feed for all stations to share

TABLE 1 (Continued)
PROPOSED ANTENNAS/EQUIPMENT IMPROVEMENTS

Reference No.	Description	Customer	Height Above Ground (ft.)	Dimensions (ft.)	Weight (lbs)	Power/Polarization ^a	Purpose
<i>Sutro Tower (cont.)</i>							
49	Microwave Dish Antenna for Carquinez Bridge camera feed	All 6 TV news stations	657	6.4 feet in diameter, 4.9 feet in depth	200	~66 dBm	Technology change – new bridge camera feed for all stations to share
50	Microwave Dish Antenna for San Francisco International Airport camera feed	All 6 TV news stations	187	6.4 feet in diameter, 4.9 feet in depth	200	~66 dBm	Technology change – new bridge camera feed for all stations to share
51	Auxiliary FM Antenna (Replacement)	KOIT FM	621	30 feet in height, mounted on a new 30-foot pipe, rototiller style	2,500	35.5 KW/C	Relocate from the tower second level to fifth level for better coverage
<i>Ground Installation</i>							
52	Satellite Dish Antenna (Replacement)	All 11 TV Stations	Ground	42 feet by 22 feet	n/a ^b	none-receive only	New technology – feeds all TV stations for daily and emergency use

NOTE:

^a For broadcast service, indicated power is effective radiated power (ERP) in kilowatts (kW). For microwave antennas, indicated power is equivalent isotropic radiated power (EIRP) in decibel-milliwatts (dBm). C = circular polarization; E= Elliptical polarization; H = horizontal polarization; V = vertical polarization

^b Weight not applicable as this antenna would be installed at ground level, and not on Sutro Tower.

SOURCE: Simpson, Gumpertz & Heger, 2013

Hillside Erosion Control and Drainage Improvements

As shown in Figure 3, a number of erosion control improvements would be implemented on the site's southern hillside under the modified project to provide slope stabilization and address soil erosion that has occurred at this location over time. The portion of the southern hillside within the erosion control improvement zone would first be cleared, grubbed and groomed; existing concrete walkways, pads, and base materials within the zone would be removed; and certain heating, ventilation and air conditioning (HVAC), electrical and drainage utilities would either be removed or relocated, as needed. Fifteen existing trees located within the erosion control improvement zone would be retained, and nine blue gum eucalyptus trees (*Eucalyptus globulus*) would be removed (and replaced, as discussed below). The westmost section of the hillside within the erosion control improvement zone (approximately 120 feet in length, and 15 to 20 feet in width) would be re-graded at a ratio of no greater than 2H:1V (horizontal:vertical).

The erosion control improvement zone would then be hydroseeded using a native grass mix, and temporarily irrigated. Fiber rolls and jute netting would be temporarily placed over the planting area for erosion control during this interim period. Upon establishment of vegetation within the erosion control zone, the temporary erosion control features would be removed and a permanent turf reinforcement mat would be installed on the southern hillside. The turf reinforcement mat would consist of a mesh design that would provide erosion control and allow vegetation to grow through the mat. In addition, nine Coast Live oak trees would be planted on the southern hillside. These trees would be staked and hand watered weekly until the trees are established after approximately two years.

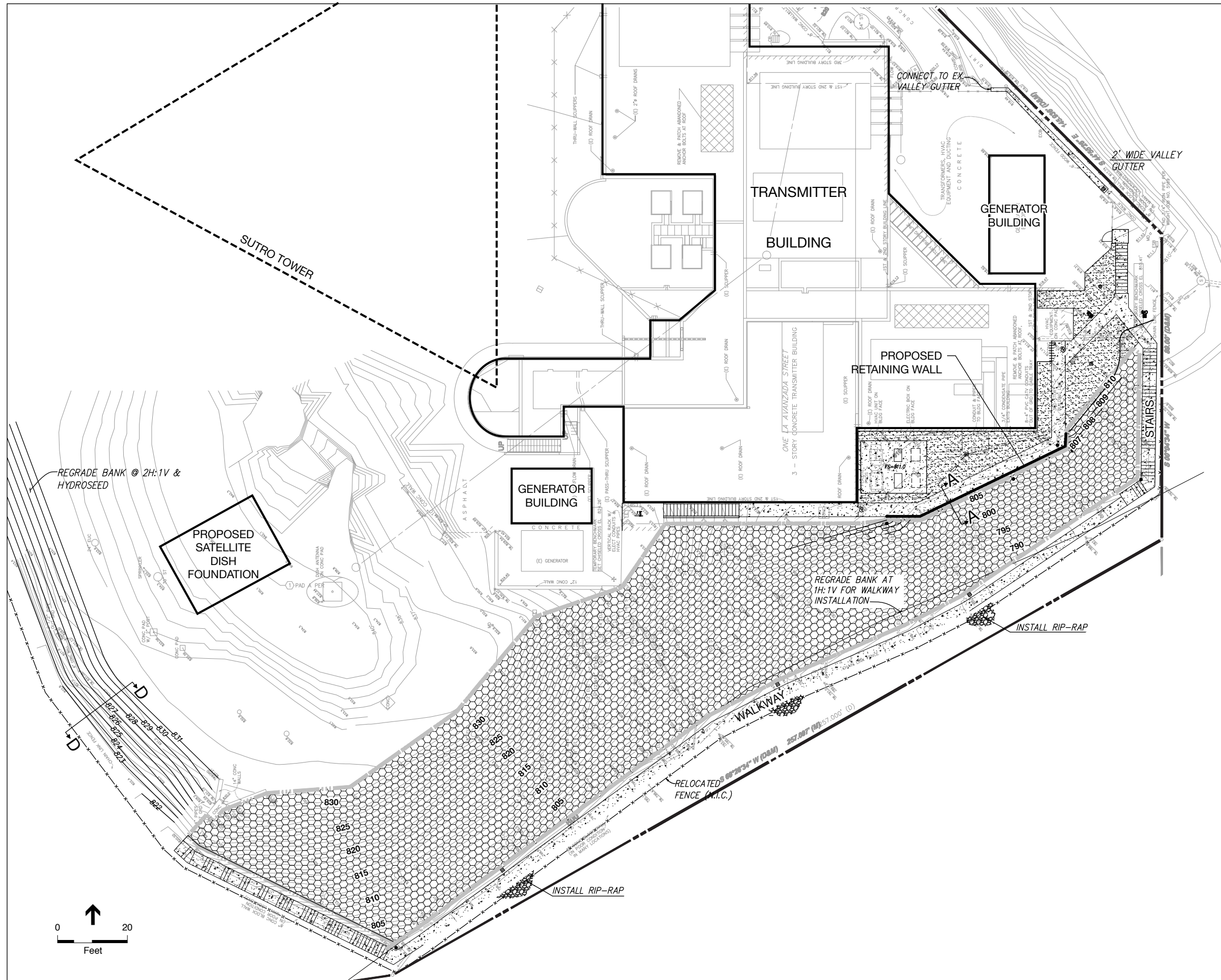
Stormwater runoff that would occur on the southern hillside would, depending on location, either drain overland downslope (as at present) or be routed to existing and proposed new 4-inch diameter stormdrains, and hence to 6-inch diameter stormdrains that would discharge to rip-rap lined areas (used for velocity dissipation) located at the property fenceline.

Fenceline Stairway and Walkways

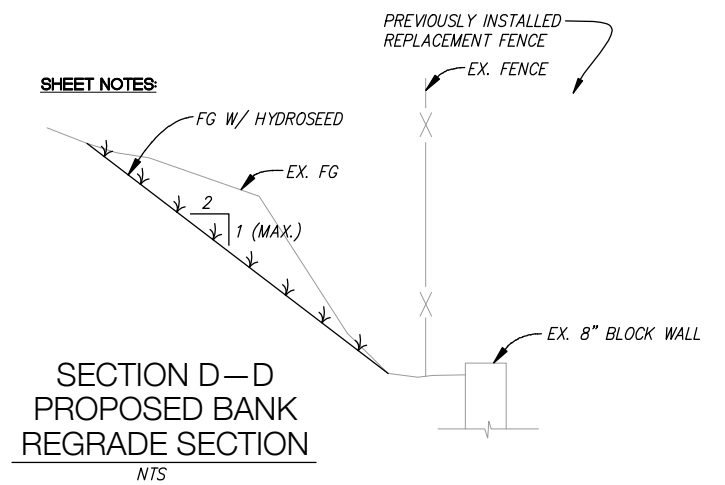
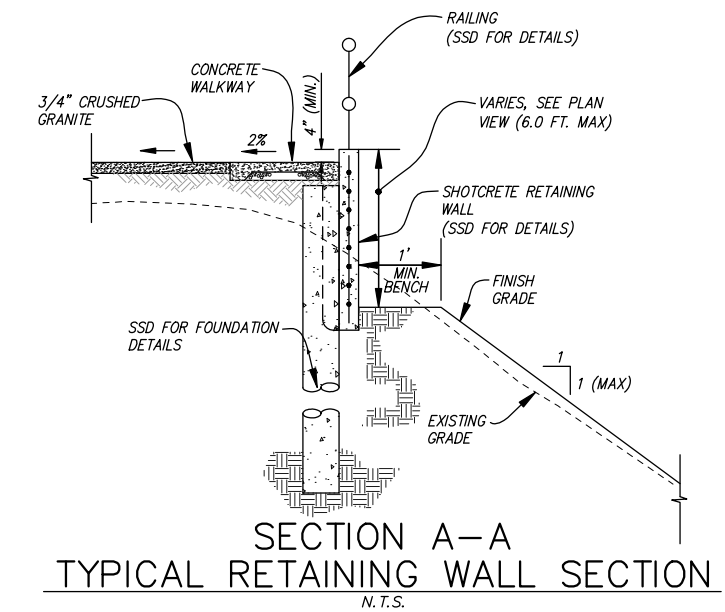
An existing concrete walkway that follows along a portion of the southern hillside slope within the fenceline is used by the site's security personnel for access to, and patrol of, this area. This walkway is currently in poor condition, and existing access to the walkway is difficult due to steep slopes that descend to the walkway. Under the modified project, this walkway would be replaced with a new walkway, and stairways would be installed on either end of the walkway (see Figure 3). Under the modified project, the proposed facilities would be used by the site's security personnel for patrol, and would also allow access to the southern hillside for future landscape maintenance activities. The proposed walkway would be approximately 200 feet in length and 3 feet wide. The proposed stairways would contain hand rails for safety.

Ground-Level Satellite Dish Foundation

As shown in Figure 3, a rectangular concrete pad measuring approximately 31 feet by approximately 22 feet (and area of approximately 680 square feet) would be installed on the site approximately 70 feet south of Sutro Tower to support the proposed replacement ground-level satellite dish (discussed on p. 4, under Antennas/Equipment Additions). The foundation would be approximately 3.5 feet thick, and raised approximately one-half foot above grade.



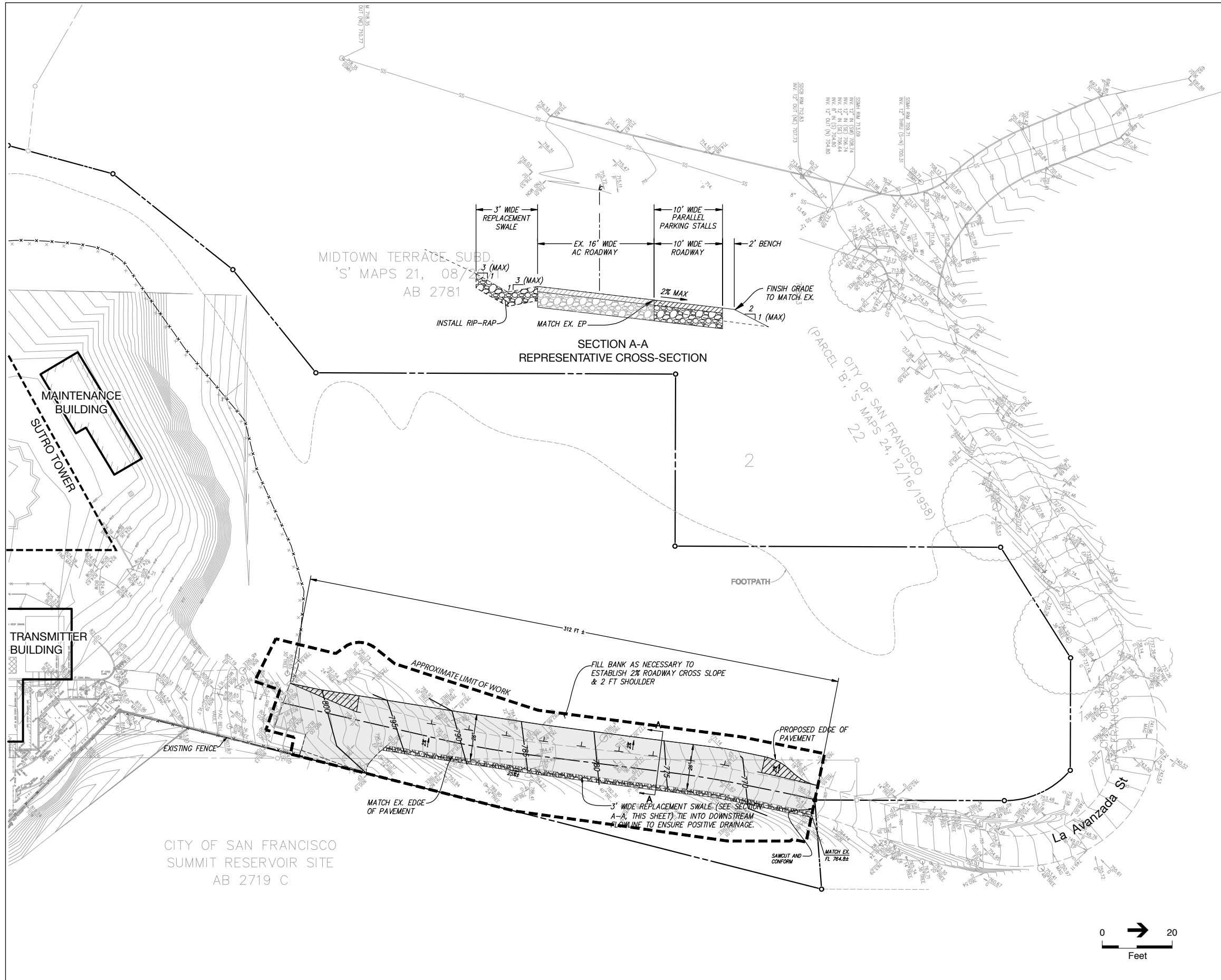
- LEGEND:**
- CRUSHED GRANITE
 - CONCRETE WALKWAY OR FLATWORK
 - LIMIT OF PERMANENT TURF REINFORCEMENT MAT MANUFACTURED BY NORTH AMERICA GREEN TYPE VMAX3 SC250. SEE SHEET C-6.1 FOR DETAIL
 - PROJECT SITE BOUNDARY
 - FENCE LINE
 - STAIRS



SOURCE: Simpson, Gumpertz & Heger, 2013

2007.0206E: Sutro Tower Antenna Additions and Site and Erosion Control Improvements

Figure 3
Proposed Grading, Erosion Control and Pedestrian Access Improvements on Site's Southern Hill



SOURCE: Simpson, Gumpertz & Heger, 2013

2007.0206E: Sutro Tower Antenna Additions and Site and Erosion Control Improvements
Figure 4
 Proposed Roadway Improvements on Site's Driveway

Other Miscellaneous Improvements

Other miscellaneous erosion control, drainage and access improvements would be made in the vicinity of the south/southeast side of the transmission building. This would include the placement of crushed granite on currently unpaved/unvegetated areas in this area to reduce erosion. New area drains, catch basins and stormdrains would be installed in this area to collect and convey stormwater to an existing City stormdrain located on-site. Several concrete walkway segments and stairways with handrails would also be constructed to improve security and other operational pedestrian access around this portion of the transmission building.

Driveway Improvements

La Avanzada Street provides vehicular access to the project site. This street is also used by City vehicles for access to its Summit Reservoir (located adjacent to the Sutro Tower property), and is informally used by the public for pedestrian and vehicular access and parking. Roughly, the upper 320 feet of La Avanzada Street (as measured from the site entry gate north) is owned by the project sponsor; the lower section of the street is within the jurisdiction of the City. It is noted that the project sponsor limits parking to one side of the segment of La Avanzada Street owned by the company due to the narrow width of the existing pavement and the current levels of erosion. The pavement on portions of La Avanzada Street is currently in poor condition.

Under the modified project, the driveway extension of La Avanzada Street owned by the project sponsor would be repaved, and widened on the west side of the street to better match the parameters of the original driveway before the occurrence of over 40 years of erosion and to allow for better drainage to avoid erosion in the future. The improved alignment would also allow large vehicles (e.g. fire trucks) to pass safely, and better accommodate the public parking of vehicles, which currently contributes to the erosion of the roadway (see Figure 4). As noted above, the project sponsor currently allows parking, including public parking, only on one side of the driveway extension. Future parking is intended to be limited to the eleven (11) new parking stalls that would be created as part of the modified project. The proposed paved width on this section of La Avanzada Street would be increased from its existing approximate 16-foot width to a proposed 26-foot width. To accommodate this, an area immediately adjacent to La Avanzada Street would be cleared, grubbed and groomed. This would require the removal of four existing blue gum eucalyptus trees within the construction zone. During construction, a stabilized construction entrance and concrete washout basin would be created within the work area and fiber rolls would be temporarily placed within the construction zone to provide erosion control.

An existing swale along the east side of this segment of La Avanzada Street would be replaced with a new 3-foot-wide swale lined with rip rap to improve drainage at this location, and the west side of La Avanzada Street would contain a two-foot unpaved shoulder beyond the edge of pavement. La Avanzada Street would have a slight cross-grade (2 percent or less) to direct stormwater that occurs on the roadway to runoff to the west and downslope.

Construction Characteristics

Antennas/Equipment Additions

Project construction for the proposed tower improvements is anticipated to commence upon project approval, and the majority of these improvements would be installed intermittently over a six- to nine-month period, with each tenant installation typically completed within a two week period using a three- to

four-person crew. While the project sponsor plans to stage the work, there exists the potential for overlapping activities and, thus, the potential for between five to fifteen workers at the site on any given construction day. Project construction equipment would include the use of hydraulic cranes, a forklift and skid wench. Physical attachment of each improvement to Sutro Tower would be in the same manner that antennas have been attached to the tower since it was constructed: trained installers physically climb to the particular installation point on the tower and hand install each attachment with handheld air-powered wrenches. Total deliveries of materials for this project component are estimated at approximately five large truck round-trips, and 20 to 30 smaller delivery (e.g. UPS, FedEx) truck round trips.

Proposed Auxiliary Antenna Operational Limitations During Construction

During periods of construction of the proposed tower improvements when the tower's main antenna(s) would be temporarily out of service, one or more of the tower's auxiliary antennas for the corresponding radio or TV station(s) would be temporarily used. Since the tower's auxiliary antennas emit more ground-level radio frequency radiation (RFR) than its main antennas, during construction of tower improvements for the modified project, the sponsor would limit the operation of the tower's auxiliary antennas such that the total ground-level RFR exposure would be less than or equal to 15 percent of the Federal Communications Commission (FCC) public maximum permissible exposure limit (MPE) for any publicly accessible location (the same RFR exposure estimated for the 2008 project). Additional detail on RFR, including applicable regulations and project effects, are discussed in detail below, in the Radio Frequency Radiation section of this EIR Addendum.

Other Site Improvements

The proposed site and erosion control improvements are anticipated to be conducted outside of the rainy season, and would take approximately four months to complete. The number of daily construction workers at the site would vary depending on activity, but could range between eight and ten workers on peak days. Project construction equipment would include the use of excavators, loaders, backhoe, grinder, skid steers, blade, paver, and rollers. Total deliveries of materials (e.g., base and drain rock, organic materials, concrete, asphalt) for this project component are estimated at up to approximately 70 large truck round-trips. All soil excavated on-site would be re-used on-site, and consequently would not require off-hauling. The proposed repaving and widening of the site driveway would occur during the last two weeks of the ground improvements schedule.

Approvals Required

Communication facilities such as Sutro Tower are conditionally permitted in an RH-1(D) district as "Public Facilities and Utilities" under Planning Code Section 209.6. Because the modified project does not include major remodeling of the tower, expansion of the transmitter building at the base of the tower, or a change in use, an amendment to the existing conditional use authorization would not be required for the modified project. However, pursuant to City Planning Commission Resolution No. 11399, adopted July 14, 1988, the Planning Commission will hold a public hearing to review the modified project under its Discretionary Review authority. The project would not increase the height or bulk of the tower; thus, the modified project would be consistent with the height and bulk controls, as it would not change the height of a legally noncomplying structure.

Every Sutro Tower building permit since 2000 has been subject to a series of "Standard Sutro Tower Conditions" imposed by the Planning Commission, which require mandatory structural inspections,

monitoring of RFR, and communications with neighborhood organizations. The modified project would require a building permit from the San Francisco Department of Building Inspection (DBI) for the proposed tower antenna additions and site and erosion control improvements. The project may also require building and electrical permits to allow the project sponsor's tenants to make improvements to their leased space to accommodate the described antenna and accessory equipment or to alter, replace, or add accessory and ancillary equipment.

ANALYSIS OF POTENTIAL ENVIRONMENTAL EFFECTS

San Francisco Administrative Code Section 31.19(c)(1) states that a modified project must be reevaluated and that “if, on the basis of such reevaluation, the Environmental Review Officer determines, based on the requirements of CEQA, that no additional environmental review is necessary, this determination and the reasons therefore shall be noted in writing in the case record, and no further evaluation shall be required by this Chapter.”

CEQA Guidelines Section 15164 provides for the use of an addendum to document the basis of a lead agency's decision not to require a Subsequent or Supplemental EIR for a project that is already adequately covered in an existing certified EIR. The lead agency's decision to use an addendum must be supported by substantial evidence that the conditions that would trigger the preparation of a Subsequent EIR, as provided in CEQA Guidelines Section 15162, are not present.

The FEIR evaluated the potential impacts of construction and operation of the 2008 project and found that all impacts would be less than significant with implementation of a mitigation measure (FEIR Mitigation Measure No. 1, Construction Air Quality). Since certification of the FEIR, no changes have occurred in the circumstances under which the modified project would be implemented that would change the severity of the project's physical impacts as explained herein, and no new information has emerged that would materially change the analyses or conclusions set forth in the FEIR.

The 2008 project did not include any ground-level improvements and, as discussed above, under the modified project, certain ground level site improvements are proposed. However, as demonstrated below, even with the proposed tower and site improvements, the modified project would not result in any new significant environmental impacts, substantial increases in the significance of previously identified effects, or necessitate implementation of additional or considerably different mitigation measures than those identified in the FEIR. Furthermore, the single mitigation measure identified for the 2008 project (FEIR Mitigation Measure No. 1, Construction Air Quality) has since been largely adopted as part of a City ordinance, commonly referred to as the Construction Dust Control Ordinance, which would apply to the modified project; consequently, no mitigation measures are required for the modified project. The effects associated with the modified project would be substantially the same as those reported for the 2008 project in the FEIR. The following discussion provides the basis for this conclusion.

Aesthetics

Summary of Aesthetic Effects of 2008 Project in FEIR

The FEIR discussed existing views of the project site from surrounding public vantage points, described the visibility of the tower from these off-site locations and how existing vegetation in the site vicinity serves to partially screen views of on-site buildings. The FEIR then addressed potential aesthetic impacts

of the 2008 project and determined that the project would not substantially degrade the existing visual character of the site and its surroundings. This determination was made on the basis that the proposed change in tower antennas or their reconfiguration would not be generally noticeable, except from relatively close inspection. The FEIR (in the project's Initial Study) also determined the project would have a less than significant aesthetic impact on scenic vistas and scenic resources, and would have no impact on light and glare.

Short-Term Aesthetic Effects During Construction of the Modified Project

The tower and ground-level improvements proposed under the modified project would have the potential to result in short-term aesthetic effects during construction. Construction activities would include the daily arrival and departure of construction workers, truck deliveries of construction materials to, and hauling of debris from, the site, and various construction activities that would occur on-site. Construction activities associated with the tower improvements under the modified project would be visible from off-site locations, and would be similar in scale and nature to the prior antennas/equipment alterations that have occurred on the tower under the 2008 project. Depending on location, many of the proposed ground-level construction activities would be either partially or fully screened from view from nearby residences due to the existing topography and/or presence of intervening vegetation. Given the temporary nature of the proposed construction, no long-term aesthetic effects would be associated with these construction activities. Accordingly, these short-term aesthetic effects associated with the modified project would be substantially similar to the effects described in the FEIR, and would not result in new significant impacts or substantially more severe significant impacts than were identified in the FEIR or require new mitigation not previously discussed in the FEIR.

Long-Term Aesthetic Effects Associated With Antennas/Equipment Additions Proposed under Modified Project

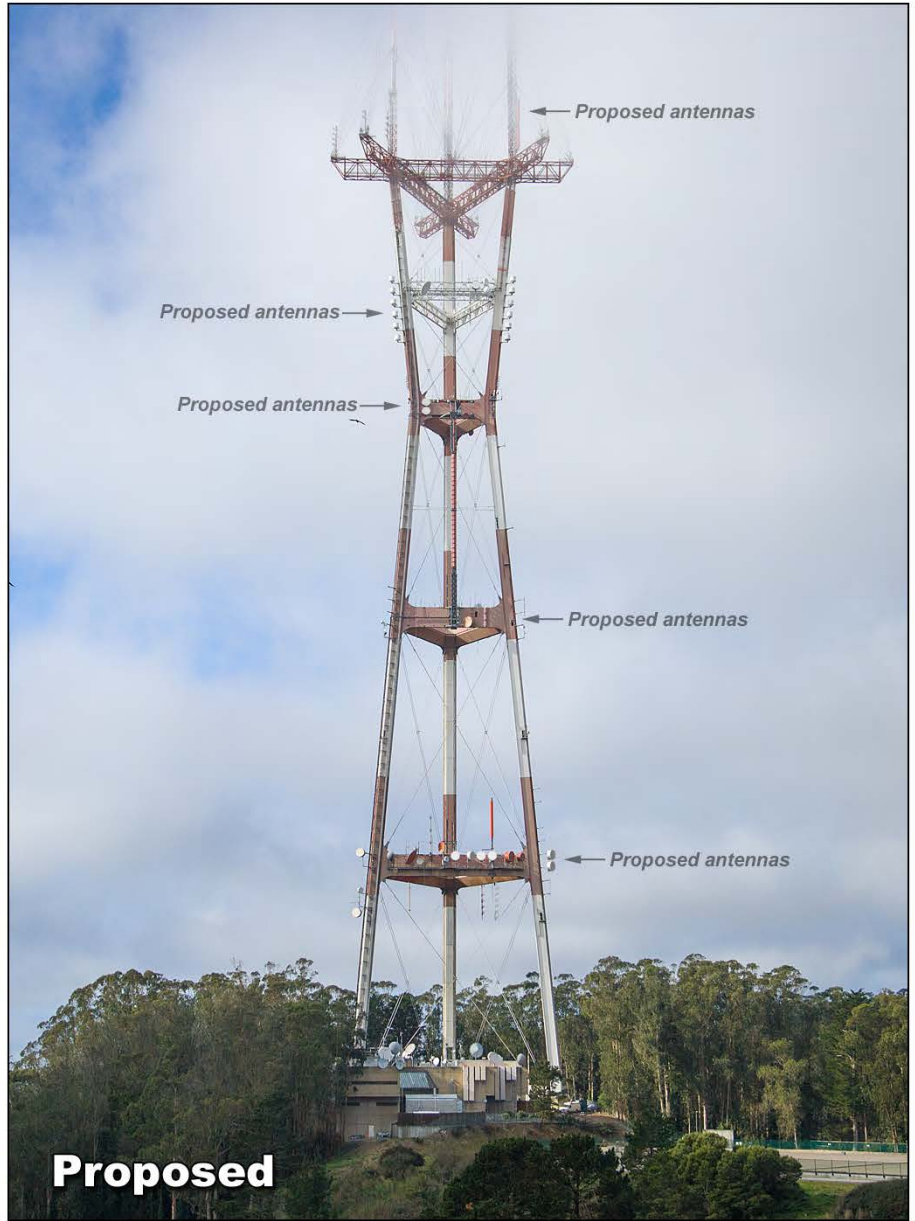
Similar to the tower improvements proposed under the 2008 project, the additional antennas/equipment proposed under the modified project would not be generally noticeable. **Figure 5** presents an existing view and a visual simulation of the tower from the Twin Peaks overlook, looking west. **Figure 6** presents an existing view and a visual simulation of the tower from Johnstone Drive, across Clarendon Avenue, looking south. As described in the Project Description, the modified project would result in the addition of 50 new broadcast and reception antennas, microwave dish antennas and camera mounts at various levels on the tower, and replacement and relocation of one existing auxiliary radio antenna to a higher level on the tower. The new antennas/equipment would be distributed across multiple levels on the tower (at elevations between 187 feet above ground and 815 feet above ground). The six largest new antennas (main broadcast, auxiliary and emergency antennas) would be placed below Level 4 (525 feet above ground), below Level 5 (621 feet above ground) and atop Level 6 (at 762, 800, and 815 feet above ground, respectively); see Table 1 for proposed antenna dimensions.

Each of other proposed new antennas would be individually smaller, although some of these new antennas would be grouped, such as the 15 Community Broadband antennas at Level 3 (375 feet above ground), 6 ENG antennas near Level 5 (610 to 670 feet above ground), and 6 BayWEB antennas below Level 4 (550 feet above ground).

As shown in Figures 5 and 6, the additional antennas and equipment proposed under the modified project would not result in a substantial visual change. While the additional antennas/equipment would be noticeable upon relatively close inspection when in proximity to the tower, from longer range views, these



Existing



Proposed

Simulation does not reflect proposed ground improvements, including new retaining wall, hillside erosion control, driveway widening, or tree removal/replacement.

2007.0206E: Sutro Tower Antenna Additions and Site and Erosion Control Improvements

SOURCE: Previsualists, Inc., 2013

Figure 5

Photosimulation of View Looking West from Twin Peaks



Simulation does not reflect proposed ground improvements, including new retaining wall, hillside erosion control, driveway widening, or tree removal/replacement.

2007.0206E: Sutro Tower Antenna Additions and Site and Erosion Control Improvements

Figure 6
 Photosimulation of View Looking North from Johnstone Drive, across Clarendon Avenue

installations would not be noticeable, as these elements would blend in with the tower's main structural elements. As under the 2008 project, all new antennas/equipment proposed under the modified project would be composed of non-reflective metal (unpainted) or be painted the same color as the existing tower structure and antennas to blend in with the existing facility.

The new ground-level satellite dish would replace an existing ground-level satellite dish located in proximity to the satellite dish that would be removed. The proposed new ground-level satellite dish would be partially visible from certain off-site vantage points, although it would be screened by the existing topography and/or intervening vegetation. This dish would contain a factory coating and consequently, would not require painting. Proposed new tree plantings on the southern hillside would further serve to screen views of the ground-level satellite dish from off-site locations. Accordingly, this new feature would not result in a substantial change in visual character of the site vicinity.

Long-Term Aesthetic Effects Associated With Other Site Improvements Proposed under Modified Project

The majority of permanent ground-level improvements proposed under the modified project would address existing adverse on-site hillside erosion problems, and improve an existing driveway and walkways that are currently in poor physical condition. In particular, the proposed erosion control improvements could be considered an aesthetic improvement over existing conditions, as existing on-site hillside slopes that currently exhibit visible damage from soil and vegetative loss would be repaired, and vegetative cover would be increased on-site. Regardless, most of these improvements would be either partially or fully screened from view from nearby residences due to the existing topography and/or presence of interceding vegetation. While 13 on-site eucalyptus trees would be removed under the modified project, 9 new Coast Live oak trees would be planted within the project property which, when mature, would further serve to screen views of the project site from off-site locations. Given the relatively dense eucalyptus forest surrounding the project site (as shown in Figure 5), the removal of 13 eucalyptus trees would not be noticeable from long range vantage points.

Aesthetics Conclusion

The FEIR did not identify any significant effects related to aesthetics. The improvements proposed under the modified project would not result in new significant aesthetic impacts not identified in the FEIR and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant impacts related to aesthetics, including effects on visual character, scenic vistas, scenic resources, and light and glare, either individually or cumulatively.

Geology, Soils and Seismicity

Summary of Geologic, Soil and Seismic Effects of 2008 Project in FEIR

The FEIR described existing geologic, soil and seismic conditions at the project site. The FEIR reported that the project site is not within an Alquist-Priolo Earthquake Fault Zone, and that no known active fault exists on the project site or in the vicinity, and consequently, that the risk of ground rupture at the site is very low. In addition, the FEIR also reported that the project site is underlain by soil types that 1) are not expected to contribute greatly to shaking amplification in the event of an earthquake; 2) have a very low liquefaction hazard level; and 3) do not contain high expansive soil potential. The FEIR also reported that

the relatively flat portion of the site that supports the Sutro Tower foundation is not within a seismic hazard zone; however, an area southwest and down slope of the tower is mapped as being within an area susceptible to seismically induced landslides.

The FEIR summarized a seismic and structural analysis completed by the project sponsor in 2008 in support of the project. Based on the analysis, structural upgrades proposed as part of the 2008 project, and since completed in 2011, included:

- Strengthening of one of three columns on each of the three tower legs above tower Level 3 by bolting new steel plates to the columns, and replacing “splice plates”⁵ between lengths of each of the columns with higher-strength plates, at two locations between Levels 1 and 2 and at one location above Level 3;
- Upgrading bolted connections to welded connections on the Level 6 horizontal “outriggers”⁶ that anchor guy wires supporting the vertical masts atop the tower, adding welded steel tabs where these same horizontal trusses connect to the tower legs, and adding welded L-shaped steel angles to the same trusses at certain locations between the tower legs; and
- Replacement of bolted connections with welded connections, along with the addition of “stiffener plates”⁷ to existing triangular “gusset plates,”⁸ on existing diagonal braces within the tower legs, at various locations between grade and tower Level 2, between Levels 2 and 3, and between Levels 5 and 6.

The FEIR reported that these structural upgrades would enable Sutro Tower to meet all applicable *Building Code* wind and seismic criteria for an essential facility and accommodate the additional antenna improvements, and concluded that the proposed project would result in a less than significant impact to seismic groundshaking, including catastrophic failure.

The FEIR also reported that because the tower is anchored to its foundation, and the increase in total mass would be relatively small, the 2008 project would not be expected to alter the current slope stability. The FEIR concluded that since the tower is not on a geologic unit that is unstable, or would become unstable as a result of the project, that the project would not result in landslides, lateral spreading, subsidence or collapse. Consequently, the FEIR found that all project impacts to geology, soils and seismicity from the proposed tower improvements would be less than significant.

Geologic, Soil and Seismic Impacts of the Tower Improvements Proposed under the Modified Project

In 2013 a structural analysis was prepared for the additional antennas and equipment that would be added to Sutro Tower under the modified project.⁹ The structural analysis included modeling of the existing tower, including recent structural upgrades completed as part of the 2008 project, along with the additional antennas and equipment proposed on the tower under the modified project. The 2013

⁵ “Splice plates” are metal plates laid over a joint and fastened to the pieces being joined. They are used to join long steel beams into one continuous longer beam as required by the design.

⁶ “Outriggers” are those portions of the horizontal trusses that extend beyond the tower legs.

⁷ “Stiffener plates” are metal plates attached to a beam used to increase the beam’s stiffness and thereby its resistance to buckling.

⁸ “Gusset plates” are steel plates, typically rectangular or triangular in shape, that are welded to a beam fastened to other members to make a truss.

⁹ *Addition of Broadcast Equipment to Sutro Tower, Structural Seismic Analysis Report*, Simpson, Gumpertz & Heger, April 10, 2013. This document is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File 2007.0206E.

structural analysis report determined that with the additional antennas and equipment proposed as part of the modified project, the tower would continue to meet all applicable *Building Code* wind and seismic criteria for an essential facility, and that no additional structural upgrades would be required for Sutro Tower beyond those already completed as part of the 2008 project. The proposed tower improvements would be subject to review and approval by DBI to ensure all *Building Code* provisions are met. Consequently, consistent with the conclusions reached in the FEIR, the tower improvements proposed under the modified project would result in a less than significant impact from seismic groundshaking, including catastrophic failure, and no new significant impacts would ensue as a result of the modified project, compared to those analyzed in the FEIR. Similarly, the proposed tower improvements would not affect any conclusions previously reached in the FEIR regarding landslides, lateral spreading, subsidence or collapse.

Geologic, Soil and Seismic Impacts of the Site and Erosion Control Improvements Proposed under the Modified Project

As described in the Project Description, aside from the tower improvements, a number of proposed ground-level site improvements would be constructed on the project site property, including the installation of a retaining wall southeast of the transmission building; implementation of a number of on-site erosion control and drainage improvements on the site's southern hillside; installation of several exterior stairways and walkways; repair and replacement of a portion of the existing driveway; and installation of an at-grade satellite dish antenna and foundation. Project-related ground-level construction activities, such as clearing, grading and excavation, could temporarily create conditions in which soils are more susceptible to erosion by wind or stormwater runoff. However, as discussed in more detail under Hydrology and Water Quality, below, the SFPUC would require that the project sponsor develop and implement an erosion and sediment control plan to reduce the impact of runoff from a construction site. This plan would be reviewed and approved by SFPUC prior to implementation, and the SFPUC would conduct periodic inspections to ensure compliance with the plan. As discussed in the Project Description, during construction, soil stabilization controls would be implemented in work areas where ground disturbance would occur, including hydroseeding and use of fiber rolls and/or jute netting, depending on location. With implementation of an erosion and sediment control plan, potential impacts related to soil erosion during this interim period would be less than significant, and would not be substantially more severe than those identified in the FEIR.

Certain site improvements proposed along the southern hillside, including the proposed retaining wall and erosion control and drainage improvements, and exterior stairways and walkways are located within an area mapped in the *General Plan* Community Safety Element (Map 5) as susceptible to seismically-induced landslides. The proposed installation of a retaining wall, grading improvements and implementation of site erosion controls on the southern hillside are specifically designed to provide slope stabilization and address soil erosion that has occurred at this location over time. As described in the FEIR, the *Building Code* contains requirements for new and replacement construction. The final site plans would be submitted to and reviewed by the DBI. In reviewing plans, DBI refers to a variety of information sources to determine existing hazards and assess requirements for mitigation. Potential geologic hazards would be addressed during the permit review process through these measures. To ensure compliance with all *Building Code* provisions regarding structural safety, when DBI reviews any geotechnical reports or building plans submitted for a proposed project, it will determine the adequacy of necessary engineering and design features to reduce the potential damage to structures from ground shaking and geologic hazards. Therefore, potential damage to structures from geologic hazards on the project site would be ameliorated through any DBI requirement for a geotechnical report and review of

the building permit application. Accordingly, the modified project would not result in new significant impacts not previously analyzed in the FEIR.

Geology, Soils and Seismicity Conclusion

The FEIR did not identify any significant effects related to geology, soils and seismicity. The improvements proposed under the modified project would not result in new significant geology, soils, or seismicity impacts not identified in the FEIR and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant impacts related to geology, soils and seismicity, including from earthquakes and seismic related hazards, an unstable geologic unit or soils, and soil erosion, either individually or cumulatively.

Radio Frequency Radiation (RFR)

Summary of RFR Effects of 2008 Project in FEIR

The Federal Communications Commission (FCC) has adopted maximum permissible exposure limits (MPE) for radio frequency radiation (RFR) that vary by frequency of the RFR emitted, and has established separate MPE limits for worker exposure and public exposure.¹⁰ The FEIR indicated that Sutro Tower emits radio frequency waves with a range of 54-788 megahertz (MHz).^{11,12} The FEIR reported that during normal main antenna operation, the total measured maximum existing ambient RFR exposure level at ground level for any publicly accessible location around Sutro Tower was 8.5 percent of the public MPE, well within acceptable FCC exposure limits.¹³

The FEIR evaluated three project scenarios (construction phase using main and auxiliary antennas, normal operation using the main antennas, and an unlikely theoretical scenario of use of all auxiliary antennas operating simultaneously). The FEIR reported that during construction of the 2008 project, there would be periods when the RFR ground level exposure level would be temporarily higher than under existing conditions (i.e., up to 15.3 percent of the public MPE) for any publicly accessible location, but well within acceptable FCC exposure limits. The FEIR also reported that during normal operation, the 2008 project would reduce the RFR exposure level of the digital TV and FM station main antennas from existing conditions (i.e., a reduction from 8.5 to 8.4 percent of the public MPE) for any publicly accessible location, and consequently, exposures would also be well within acceptable FCC exposure limits.¹⁴ For the theoretical scenario that assumed simultaneous use of all auxiliary antennas, the FEIR explained that, as under existing conditions, continued compliance by Sutro Tower, Inc. and all tenant stations with the

¹⁰ Additional information on MPE limits is presented in *Sutro Tower Inc., San Francisco, California, Statement of Hammett & Edison Consulting Engineers, FCC Radio Frequency Protection Guide Exhibit*, Hammett & Edison, Inc., September 22, 2014. This document is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File 2007.0206E.

¹¹ Radio frequency is expressed in hertz (Hz). A kilohertz (kHz) is one thousand hertz; a megahertz (MHz) is one million hertz; a gigahertz (GHz) is 1 billion hertz. Radio frequencies are considered to be in a range of 300 kHz to 300 GHz.

¹² This radio frequency wave range is consistent with the range currently emitted by Sutro Tower, measured at 88-700 MHz.

¹³ This assumed simultaneous operation of all antennas on the tower, including smaller scale antennas and accessory equipment located at the Sutro Tower site, and consequently, existing RFR exposure levels were conservatively estimated.

¹⁴ An incremental reduction in the estimated existing 2008 RFR exposure level as a result of the 2008 project was due to a reconfiguration of television antennas.

“Table of Contributions” procedures would ensure that the cumulative operation of auxiliary antennas during construction and operation at the site under the 2008 project would stay within the public MPE.¹⁵

The FEIR also determined that since RFR levels decline rapidly with increased distance, the 2008 project RFR levels at the nearest school (Clarendon Elementary School, located one-eighth mile from the tower) would be even lower than the acceptable values reported for locations much closer to Sutro Tower. The FEIR concluded the 2008 project would have a less than significant impact to nearby schools with regard to RFR emissions.

In addition, the FEIR also reported that Sutro Tower is subject to a mandatory RFR measurement program (as part of the Standard Antenna Conditions originally adopted in 2000). The mandatory RFR measurement program currently requires the project sponsor to measure RFR public exposure levels at 200 publicly accessible sites within 1,000 feet of the tower every three years, within two weeks of the activation of any digital to television (DTV) broadcasting antenna, or within two weeks of any increase in power from any DTV antenna's initial power level, whichever is earliest.¹⁶ The project sponsor is required to submit those measurements to the Department of Public Health (DPH), the Planning Department, and designated liaisons for local neighborhood associations (the results are also posted on the project sponsor's website). Such measurements provide analytical data to ensure that RFR exposure from tower operations is protective of human health at the project site and vicinity during construction and operation.

While not a hazards-related issue, the FEIR also determined that since the 2008 project would reduce RFR exposure levels during operation, any potential radio interference with consumer devices in residences in the surrounding neighborhood during operation of the 2008 project would be less than under existing conditions, and furthermore, that the minor increase in RFR exposure levels during construction would not be great enough to result in an increase in interference of consumer devices.

RFR Impacts of the Modified Project

The project sponsor's consultant, Hammett and Edison, Inc., conducted a supplemental analysis to determine RFR exposure of the modified project.^{17,18} As was the case for the analysis of the 2008 project, the analysis of the modified project conservatively estimates RFR exposure levels, and consequently, overstates results. Similar to the FEIR, this EIR Addendum evaluates 1) a construction phase using main and auxiliary antennas, 2) normal operation using the main antennas, and 3) an unlikely theoretical scenario of use of all auxiliary antennas simultaneously.

¹⁵ Ground level RFR for operation of auxiliary antennas is higher than for the main antennas, due to their lower height installation and the broad elevation plane patterns in which they emit. The “Table of Contributions” is a set of engineering formulae and procedures developed by Sutro Tower, Inc. that identifies the maximum power limit for each auxiliary antenna, describes each radio frequency contribution to cumulative conditions at different power levels, and indicates how each station must reduce auxiliary antenna or auxiliary power levels as needed to ensure the cumulative operation of these antennas do not exceed FCC public MPE.

¹⁶ The FEIR referenced the version of the RFR measurement program that was in effect at the time the FEIR was certified. Revisions agreed to shortly thereafter require that the noted RFR measurements be conducted within two weeks (rather than within six months) after activation of a DTV broadcasting antenna or an increase in power from any DTV antenna's initial power level.

¹⁷ *Sutro Tower Inc., San Francisco, California, Statement of Hammett & Edison Consulting Engineers*, Hammett & Edison, Inc., September 22, 2014. This document is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File 2007.0206E.

¹⁸ *Sutro Tower Inc., San Francisco, California, Statement of Hammett & Edison Consulting Engineers, Supplemental Report*, Hammett & Edison, Inc., September 26, 2014. This document is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File 2007.0206E.

RFR Impacts During Construction Phase

As discussed in the Project Description, during construction of the tower improvements for the modified project, the project sponsor would limit the operation of the tower's auxiliary antennas such that the total ground-level RFR exposure, as conservatively estimated, would be less than or equal to 15 percent of the public MPE for any publicly accessible location.¹⁹ Such exposure would occur at Summit Reservoir, immediately east of the tower site; the greatest exposure level at nearby residences would be less than 10 percent of the public MPE. As such, the modified project would generate RFR at the same level as, or less than, that which was generated by the 2008 project during construction, and moreover, well within acceptable FCC exposure limits. Furthermore, as with the 2008 project, under the modified project, to protect worker health and safety, operational measures are in place to restrict access to on-tower areas that would exceed the occupational exposure limit, and to ensure that if access to the tower above ground level is required, steps are taken, if necessary, to switch operations to an applicable main or auxiliary antenna and/or to reduce power to appropriate levels in antennas located in proximity to planned work.²⁰ These measures would ensure worker safety during the construction period for the modified project and maintain RFR levels in publicly accessible areas well below the public exposure limit.

RFR Impacts During Normal Operation

During normal operation, the modified project would result in a conservatively estimated RFR exposure level of 6.2 percent of the public MPE for any publicly accessible location, also well within acceptable FCC exposure limits. It should be noted that this exposure level is less than what was estimated for both existing 2008 conditions and 2008 project conditions in the FEIR, even though the total number of FM and TV stations at Sutro Tower under the modified project would be higher than in 2008. This circumstance is due to the availability of more refined data from the manufacturer for the existing antennas, which when considered along with applicable data for proposed antennas, allowed for more accurate estimates of the combined RFR exposure to be developed.

RFR Impacts During the Theoretical Scenario

For the theoretical scenario that assumed simultaneous use of all auxiliary antennas, as was the case with the 2008 project, continued compliance by Sutro Tower, Inc. and all tenant stations with the "Table of Contributions" procedures under the modified project would ensure that the cumulative operation of auxiliary antennas during operation at the site would remain within the public MPE.

RFR Impacts in Any of the Above-Described Scenarios

As was the case with the 2008 project, since RFR levels decline rapidly with increased distance, the modified project RFR levels at Clarendon Elementary School would be even lower than the acceptable values estimated for locations much closer to Sutro Tower. Accordingly, the modified project would have a less than significant impact to nearby schools with regard to RFR emissions.

As under the 2008 project, under the modified project, Sutro Tower would also continue to be subject to the mandatory RFR measurement program (as part of the Standard Antenna Conditions originally

¹⁹ To accomplish this, the auxiliary antenna effective radiated powers would be restricted to certain designated power levels. These levels were established by Hammett & Edison in 2007 for each television broadcaster on the tower. The individual power limitations applicable to each auxiliary broadcast antenna during the tower improvements construction phase would be directly monitored by the project sponsor to ensure compliance pursuant to terms and conditions in the license agreement entered into with each television broadcaster.

²⁰ Guidelines for ensuring that on-tower worker exposure remains within applicable FCC exposure standards are contained in *Sutro Tower, Inc. San Francisco, California, Statement of Hammett & Edison Consulting Engineers*, January 11, 2011.

adopted in 2000) that currently requires the project sponsor to measure RFR public exposure levels at 200 publicly accessible sites within 1,000 feet of the tower every three years or within two weeks after the activation of any DTV broadcasting antenna or an increase in power from any DTV antenna. These measurements are then submitted to DPH and to the Planning Department and provide analytical data to ensure that RFR exposure from tower operations is protective of human health at the project site and vicinity during construction and operation.

In addition, while not a hazards related issue, since RFR exposure levels during the operation of the modified project are estimated to be lower than those estimated during the operation of the 2008 project, any potential radio interference with consumer devices in residences in the surrounding neighborhood during operation of the modified project would be less than that estimated for the 2008 project. Furthermore, the minor increase in RFR exposure levels during construction under the modified project would be similar to that estimated for the 2008 project, and not great enough to result in an increase in interference of consumer devices.

RFR Conclusion

The FEIR did not identify any significant effects related to RFR. The antennas and equipment additions proposed under the modified project, when considered in conjunction with existing frequency sources at Sutro Tower, would result in RFR levels that would be well within the FCC maximum permissible exposure levels. Consequently, the modified project would not result in new significant impacts related to RFR emissions not identified in the FEIR and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant impacts related to RFR emissions, either individually or cumulatively.

Risk of Fire

Summary of Risk of Fire Effects of 2008 Project in FEIR

The FEIR described the presence of forested areas within the project site and adjacent areas, and summarized existing fire protection services and emergency water availability in the project vicinity. The FEIR also discussed existing vegetation management measures that the project sponsor implements on an on-going basis to minimize fire risk on the project site. The FEIR analyzed potential project construction-phase impacts associated with the risk of fire (e.g., from welding), and concluded that with the adherence to Sutro Tower's safety plan during construction, and continued implementation of the project sponsor's on-going vegetation management practices at the site, the project impacts to public safety from risk of fire would be less than significant.

Fire Risk Impacts of the Modified Project

As a follow-up to previous site inspections conducted by the San Francisco Fire Department (SFFD) in 2008, SFFD staff inspected the project site on January 14, 2014, to assess the relative fire risk to the tower from existing on-site vegetation. The SFFD's inspection indicated that the majority of trees surrounding the tower were set back more than 30 feet from the tower (with the exception of a few tree branches), and that shrubs and weeds had been largely cleared by the project sponsor from around these trees. The SFFD

also noted certain existing tower features that provide exposure protection from fire, including architectural cladding that encloses the tower's legs and trusses below the 5th level.²¹

Under the modified project, the construction-related risk of fire effects related to the installation of additional tower antennas and equipment improvements would be similar to those effects previously discussed for the 2008 project in the FEIR. The proposed site and erosion control improvements under the modified project would further increase the amount of construction equipment and activities on the project site. However, as under the 2008 project, the construction contractor would be required to adhere to Sutro Tower's safety plan during construction. The safety plan measures include, but are not limited to, having trained crewmembers assigned to continuously monitor the surrounding area for fire; ensuring the fire monitor maintains two-way radio contact with work crews in the construction work areas to notify them of any fire danger; use of welding blankets to contain sparks and slag; and provision of fire extinguishers.

The proposed on-site access improvements, including widening and paving of La Avanzada Street, and new exterior on-site walkways and stairways along the southern hillside, would serve to improve overall access for emergency response personnel to and within the site. Furthermore, the sponsor would continue to implement its existing vegetation management measures on an on-going basis to minimize fire risk on the project site, consistent with the recommendations of the SFFD. Consistent with these recommendations, this includes, but is not limited to, maintaining a 30-foot separation between shrubs and all elements of the tower; maintaining several access trails across the property to ensure that SFFD has emergency access; regularly trimming shrubs and brush to keep access trails open; removing dead wood from trees; periodically thinning or cutting trees back within the fence line; and inspecting access trails and trees within the fence line on a daily basis to monitor on-going fire safety and on-site security.²² All proposed replacement trees would similarly be set back at least 30 feet from the tower.

Risk of Fire Conclusion

The FEIR did not identify any significant effects related to risk of fire. With adherence to Sutro Tower's safety plan during construction, and continued implementation of the sponsor's on-going vegetation management practices at the site, the modified project would not result in new significant impacts to public safety from risk of fire during construction and operation and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant impacts related to risk of fire, either individually or cumulatively.

Biological Resources

Summary of Biological Resource Impacts of 2008 Project in the FEIR

The FEIR reported (in the project Initial Study) that due to the project site's developed nature and location, the 2008 project would have no effect on any riparian habitat or sensitive community, federally protected wetlands or adopted conservation plan. The FEIR also reported that, since the tower improvements proposed under the 2008 project were limited to a previously disturbed area within the site property and would not involve any ground disturbance, the 2008 project would not affect any rare

²¹ San Francisco Fire Department, letter to Cooper, White & Cooper LLP, January 16, 2014. This document is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File 2007.0206E.

²² Ibid.

plant or animal habitats, or any rare, threatened or endangered species. The FEIR also determined that given the minor changes the 2008 project would make to the tower, it would not increase the potential for avian bird impacts with respect to the tower. Accordingly, the FEIR concluded that the 2008 project would not result in any significant impacts to biological resources.

Reconnaissance Survey of Existing Site Conditions

In support of the EIR Addendum for the modified project, biological resources within the project site were verified by an Environmental Science Associates (ESA) biologist through field reconnaissance conducted on October 2, 2013. Prior to the reconnaissance survey, a review of federal and State wildlife and plant database queries was conducted for the project site and surrounding area. The field reconnaissance consisted of visual observations within the project site boundary and of the adjacent environments. The field survey focused on identifying vegetation communities and habitat within the project site that could support special-status plant and wildlife species.

The area of the proposed erosion control zone on the southern hillside within the project site contains several blue gum eucalyptus (*Eucalyptus globulus*) trees. Ground cover in this area includes substantial eucalyptus leaf litter on slopes beneath the tree canopy, and grass and weedy species covering the open flat area at the top of the slope including, but not limited to, wild oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Festuca perennis*), bristly ox-tongue (*Helminthotheca echioides*), cheeseweed (*Malva parviflora*), buckhorn plantain (*Plantago coronopus*) and nightshade (*Solanum* sp.).

The area of the proposed improvements on La Avanzada Street within the project site contains several blue gum eucalyptus trees, and minimal road shoulder vegetation consisting of English ivy (*Hedra helix*), Himalayan blackberry (*Rubus armeniacus*), German ivy (*Delairea odorata*), nasturtium (*Tropaeolum majus*), native poison oak (*Toxicodendron diversilobum*) and sword fern (*Polystichum* sp.).

Wildlife species observed or heard during the survey include avian species common to San Francisco and the surrounding non-native forest habitat, and include: red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), western scrub jay (*Aphelocoma californica*), dark-eyed junco (*Junco hyemalis*), Anna's hummingbird (*Calypte anna*), Pacific wren (*Troglodytes pacificus*), song sparrow (*Melospiza melodia*), and fox sparrow (*Passerella iliaca*).

Biological Resource Impacts of the Modified Project

Modified Project Effect on Riparian Habitat, Sensitive Communities, Jurisdictional Wetlands, and Conflicts with Tree Preservation Policies or Adopted Conservation Plan

The project setting remains in a developed urban area that is not located within or adjacent to any riparian habitat or federally protected wetlands, included in a sensitive natural community, or subject to an adopted conservation plan. Therefore, as was previously determined in the FEIR for the 2008 project, the modified project would also not have any substantial adverse impact on any riparian habitat or sensitive community, federally protected wetlands or adopted conservation plan. In addition, the trees proposed to be removed under the modified project (13 blue gum eucalyptus trees) do not qualify for protection as street, significant, or landmark trees under the City of San Francisco's Urban Forestry

Ordinance, and consequently, the modified project would not conflict with any tree preservation policy or ordinance.²³

Modified Project Effect on Special Status Species

Special-status species lists were derived from the California Natural Diversity Database (CNDDDB), U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and California Native Plant Society (CNPS) for San Francisco North and San Francisco South 7.5-minute U.S. Geological Survey topographic quadrangles. Primary sources of data referenced for this analysis include:

- Federal Endangered and Threatened Species that May be Affected by Projects in the San Francisco North and San Francisco South, California 7.5-minute topographic quadrangles²⁴
- CNPS, Online Inventory of Rare and Endangered Plants²⁵
- CNDDDB, Rarefind 4 computer program²⁶
- Threatened and Endangered Plants List²⁷
- Threatened and Endangered Animals List²⁸
- Recovery Action Plan for the Mission Blue Butterfly at Twin Peaks Natural Area²⁹
- Foraging Ecology of Bats in San Francisco³⁰
- Mount Sutro Open Space Reserve Management Plan³¹
- The Cornell Lab of Ornithology Online Database – All About Birds³²

²³ Article 16 of the Public Works Code protects San Francisco’s street trees, significant trees, and landmark trees regardless of species. The ordinance protects the following three categories of trees, which are defined as follows: A *street tree* is “any tree growing within the public right-of-way, including unimproved public streets and sidewalks, and any tree growing on land under the jurisdiction of the Department [of Public Works]” as defined in Section 802 of the ordinance. A *significant tree* is defined in Section 810A as any tree: (1) located on property under the jurisdiction of the Department or on privately owned property with any portion of its trunk within 10 feet of the public right-of-way, and (2) that satisfies at least one of the following criteria: (a) a diameter at breast height in excess of 12 inches, (b) a height in excess of 20 feet, or (c) a canopy in excess of 15 feet. A *landmark tree* is any tree that: (1) has been nominated as such by a member of the public, a landowner, the San Francisco Planning Commission, the Board of Supervisors, or the Historic Preservation Commission, (2) the Urban Forestry Council (within the San Francisco Department of the Environment) has subsequently recommended as a landmark tree, and (3) is designated a landmark tree by ordinance approved by the Board of Supervisors.

²⁴ USFWS, 2014. Federal Endangered and Threatened Species that Occur in or May be Affected by Projects in the San Francisco North and San Francisco South U.S. Geological Survey 7.5-minute Quadrangles. USFWS Endangered Species Division. http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm. Data dated February 6, 2014.

²⁵ CNPS, 2013. Inventory of Rare and Endangered Plants (online edition, v7-13nov 11-7-13). Sacramento, California. <http://www.cnps.org/cnps/rareplants/inventory/> (accessed November 11, 2013).

²⁶ CDFW, 2013. California Natural Diversity Database Rarefind 4. Biogeographic Data Branch, Sacramento, CA. Data dated September 27, 2013.

²⁷ CDFW, 2013a. State and Federally Listed Endangered, Threatened, and Rare Plants of California. Biogeographic Data Branch, Sacramento, CA. Data dated January 2013.

²⁸ CDFW, 2014. State and Federally Listed Endangered and Threatened Animals of California. Biogeographic Data Branch, Sacramento, CA. Data dated April 2014.

²⁹ Wayne, Lisa; Weiss, Stuart. *Recovery Action Plan for the Mission Blue Butterfly (Icaricia icariodes missionensis) at Twin Peaks Natural Area*. San Francisco Parks and Recreation Department April, 2009.

³⁰ Krauel, J.K., *Foraging Ecology of Bats in San Francisco*, M.S. Thesis, San Francisco State University. Available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2001.0016E, 2009.

³¹ UCSF. *Mount Sutro Open Space Reserve Management Plan*. Prepared by EDAW for the University of California, San Francisco. September, 2001.

³² The Cornell Lab of Ornithology. *All About Birds*. Online Database available at www.allaboutbirds.com. Cornell University, 2011. Accessed November 2013.

Findings of the reconnaissance survey, database searches, relevant literature, and species lists were used to compile the list of special-status plant and wildlife species, their preferred habitats, and their potential to occur at the project site. No special-status plant or wildlife species were determined to have a moderate or high potential to occur within the project site (i.e., there is a low potential for all relevant species to be present) due to the historically disturbed nature of the property and absence of suitable vegetation communities for special status plants or suitable habitat for special status wildlife species. Consequently, project effects on special-status plant and wildlife species would be less than significant.

Potential Effects on Nesting Birds During Modified Project Construction

Trees within the project site and surrounding area could support native and migratory nesting birds. Most native breeding birds are protected under Section 3503 of the California Fish and Game Code (Code), and raptors are protected under Section 3503.5 of the Code. In addition, both Section 3513 of the Code and the Federal Migratory Bird Treaty Act (MBTA, 16 U.S. Code, Sec. 703 Supp. I, 1989) prohibit the killing, possession, or trading of migratory birds.^{33,34}

Thirteen mature blue gum eucalyptus trees would be removed under the modified project. Removal of trees with active nests, and other proposed project construction activities adjacent to such trees during the bird nesting season (February 1 through August 31) could result in nest destruction, injury or mortality of nestlings, and “take.” However, compliance with the requirements of the Code and the MBTA, as described above, would ensure that there would be no loss of active nests or bird mortality, and would ensure that no significant effects on nesting birds would ensue.

The modified project would maintain compliance with these requirements by implementing one or more of the following procedures during construction:

- Undertaking tree removal during the non-breeding season (i.e., September 1 through January 31) to avoid impact to nesting birds or preconstruction surveys for work scheduled during the breeding season (February 1 through August 31);
- Preconstruction surveys to locate active passerine (perching bird) nests within 250 feet of the project site and any raptor nests within 500 feet of the project site, conducted by a qualified biologist, and no more than 14 days prior to the start of work during the breeding season to determine if any birds are nesting in the trees and vegetation to be removed under the project or within the vicinity of construction to be undertaken; and/or

³³ Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Section 3503.5 of the code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) allow the designation of a species as fully protected. This is a greater level of protection than is afforded by the California Endangered Species Act (CESA). Except for take related to scientific research, all take of fully protected species is prohibited.

³⁴ The federal MBTA (United States Code, Title 16, Section 703, Supplement I, 1989) prohibits taking, killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Take is defined in the federal Endangered Species Act as “...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species.” Harm may include significant habitat modification where it actually kills or injures a listed species through impairment of essential behavior (e.g., nesting or reproduction). Therefore, for projects that would not result in the direct mortality of birds, the MBTA is generally also interpreted in CEQA analyses as protecting active nests of all species of birds that are included in the “List of Migratory Birds” published in the Federal Register in 1995. With respect to nesting birds, while the MBTA itself does not provide specific take avoidance measures, a set of measures sufficient to demonstrate take avoidance have been developed over time by USFWS and CDFW. These requirements include preconstruction nesting bird surveys and establishment of appropriate buffers from construction if active nests are found.

- Avoidance of any nests identified and the establishment by a qualified biologist of a construction-free buffer zone, to be maintained until nestlings have fledged. In general, CDFW recommends a 250-foot construction exclusion zone around the nests of active passerine songbirds during the breeding season, and a 500-foot buffer for nesting raptors. These buffer distances are considered initial starting distances once a nest has been identified, and are sometimes revised downward to 100 feet and 250 feet, respectively, based on site conditions and the nature of the work being performed. These buffer distances may also be modified if obstacles such as buildings or trees obscure the work area from active bird nests, or existing disturbances create an ambient background disturbance similar to the proposed disturbance.

Potential Avian Hazards with Tower Operation under Modified Project

As indicated in the FEIR, Sutro Tower's existing design minimizes adverse effects to migratory birds by using the minimum amount of warning and obstruction lighting required by the Federal Aviation Administration (FAA). In addition, the FEIR acknowledged that as a self-supporting structure, the tower's few guy wires are located within the tower structure itself, and consequently, not positioned in a manner that would likely lead to avian impacts. The FEIR also reported that Sutro Tower's design complies with the USFWS guidelines developed to help protect migratory birds from communications towers.³⁵ According to the project sponsor, no reports of dead or injured birds being found on Sutro Tower property have been received since at least 1992.^{36,37}

Similar to the 2008 project, the proposed antennas and equipment additions on Sutro Tower under the modified project are generally small in scale compared to the existing tower structure, and these improvements would not alter the height or bulk of the tower. Furthermore, similar to the 2008 project, the tower improvements proposed under the modified project would not involve any additional lighting or change in existing lighting on the tower. When considering that Sutro Tower has not posed a substantial threat to local avian migration in the past, and furthermore, that the modified project would not pose an additional threat, the effect on migratory birds both individually and cumulatively would not be substantially greater than reported in the FEIR for the 2008 project, and no new significant effect would result from the modified project.

In 2011, the City amended the *Planning Code* (Section 139) to incorporate bird-safe building standards, and approved *Standards for Bird-Safe Buildings*.³⁸ As defined in Section 139, the project site is located within an Urban Bird Refuge, and new building development within these areas is subject to standards for building façade treatments, lighting and wind generation that are intended to reduce bird hazards. Although Section 139 is developed for new buildings, and consequently, not directly applicable to Sutro Tower and the improvements proposed under the modified project, the existing design of the tower and its minimal use of lighting (and minimal glazing on the transmitter building) is nevertheless consistent with the goal of the bird safe building standards to reduce bird hazards, and the minor tower improvements proposed under the modified project would not change that conclusion.

³⁵ USFWS, *Service Guidance on the Siting, Construction, Operation and Decommissioning of Communication Towers*, undated.

³⁶ Gene Zastrow, (former) General Manager, Sutro Tower, Memorandum, October 19, 2006. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0206E.

³⁷ Eric Dausman, General Manager, Sutro Tower, Memorandum, November 22, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0206E.

³⁸ San Francisco Planning Department, *Standards for Bird-Safe Buildings*, available online at http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards_for_Bird-Safe_Buildings_8-11-11.pdf, July 2011, accessed November 20, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0206E.

Biological Resources Conclusion

The FEIR did not identify any significant effects related to biological resources. The improvements proposed under the modified project would not result in a new significant impact to biological resources and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant impacts related to biological resources, including special status species, riparian habitat and sensitive communities, jurisdictional wetlands, wildlife corridors, or conflict with policies or ordinances protecting biological resources, either individually or cumulatively.

Air Quality

Summary of Air Quality Effects of 2008 Project in FEIR

The FEIR (in the project Initial Study) analyzed the potential for air quality impacts of the 2008 project and determined that only construction-related impacts would occur and that these impacts would be less than significant with implementation of a mitigation measure identified in the FEIR that would implement Bay Area Air Quality Management District (BAAQMD) fugitive dust control measures.

Changes in the Regulatory Background since the 2008 Project FEIR

Since certification of the FEIR, the BAAQMD updated thresholds that address the significance of construction-related emissions.³⁹ These thresholds, used as an assessment criterion for the modified project, are 54 pounds per day of reactive organic gases (ROG), nitrogen oxides (NO_x) or fine particulate matter (PM_{2.5}) and 82 pounds per day of particulate matter (PM₁₀). These thresholds are based on average daily emissions over the entirety of the project construction period.

Additionally, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes generally referred hereto as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, to minimize public nuisance complaints, and to avoid orders to stop work by DBI. The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites less than one-half acre that are unlikely to result in any visible wind-blown dust.

Finally, in an effort to identify areas of San Francisco most adversely affected by sources of toxic air contaminants (TACs), the City partnered with the BAAQMD to inventory and assess air pollution and exposures from mobile, stationary, and area sources within San Francisco. Areas with poor air quality, termed "Air Pollutant Exposure Zones," were identified based on two health-protective criteria: (1) excess cancer risk from the contribution of emissions from all modeled sources greater than 100 per

³⁹ Although the BAAQMD set aside these thresholds due to legal proceedings, the thresholds are based on substantial evidence presented in the BAAQMD 2009 Justification Report (BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009). Therefore, the Planning Department has continued to rely on these thresholds. The thresholds were developed based on New Source Review Standards for achieving and/or maintaining federal air quality standards.

one million population, and/or (2) cumulative PM_{2.5} concentrations greater than 10 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The project site is not located within a designated Air Pollutant Exposure Zone.

Construction Air Quality Impacts of the Modified Project

Construction activities (short-term) typically result in emissions of ozone precursors and particulate matter in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe emissions). Emissions of ozone precursors and particulate matter are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, ROG_s are also emitted from activities that involve painting, other types of architectural coatings, or asphalt paving. Construction activities would have the potential to result in fugitive dust and emissions of ozone precursors and particulate matter, as discussed below.

Fugitive Dust

The modified project-related excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. In compliance with the Construction Dust Control Ordinance, the project sponsor and the construction contractor would be required to implement practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the Director of DBI. Dust suppression activities may include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing and/or earth movement). During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated material, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 mil (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or managed through the use of other equivalent soil stabilization techniques. Compliance with the regulations and procedures set forth by the San Francisco Construction Dust Control Ordinance would ensure that potential dust-related air quality impacts would be reduced to a less than significant level. Therefore, for the modified project, compliance with the San Francisco Construction Dust Control Ordinance supersedes and replaces implementation of Mitigation Measure No. 1 (Construction Air Quality) from the FEIR.

Criteria Air Pollutants

As discussed above, construction activities would result in emissions of criteria air pollutants from the use of off- and on-road vehicles and equipment. Construction-related emissions were calculated using the California Emissions Estimator Model (CalEEMod).⁴⁰ Based on the equipment list provided by the project sponsor and the number of days of construction, construction-related emissions of the modified project would be up to 2.4 pounds per day of ROG, 24.5 pounds per day of NO_x, 1.3 pounds per day of PM_{2.5} and 1.5 pounds per day of PM₁₀. All of these would be below the BAAQMD thresholds of significance for construction-related emissions. Consequently, construction-related emissions of criteria air pollutants

⁴⁰ CalEEMod model runs conducted by San Francisco Environmental Planning Department, September 2, 2014. This document is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File 2007.0206E.

would be less than significant. Therefore, the modified project would not result in any new significant effects not identified in the FEIR.

Health Risks

Project construction would include off-road and on-road equipment. Off-road equipment (which includes construction-related equipment) is a large contributor to diesel particulate matter (DPM) emissions in California, although since 2007, the ARB has found the emissions to be substantially lower than previously expected. Newer and more refined emission inventories have substantially lowered the estimates of DPM emissions from off-road equipment such that off-road equipment is now considered the sixth largest source of DPM emissions in California.⁴¹ A number of federal and state regulations are requiring cleaner off-road equipment. Specifically, both the USEPA and California have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 4 Interim and Final emission standards for all new engines are being phased in between 2008 and 2015, which requires engine manufacturers to produce new engines with advanced emission-control technologies. Although the full benefits of these regulations will not be realized for several years, the USEPA estimates that by implementing the federal Tier 4 standards, NO_x and PM emissions will be reduced by more than 90 percent.⁴²

Construction activities do not lend themselves to analysis of long-term health risks because of their temporary and variable nature.⁴³ As discussed above, the project site is not located within an identified Air Pollutant Exposure Zone. Although on-road heavy-duty diesel vehicles and off-road equipment would be used during construction, emissions would be temporary and variable in nature and would not be expected to expose sensitive receptors to substantial air pollutants. Furthermore, the modified project would be subject to, and would comply with, California regulations limiting idling to no more than five minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions.⁴⁴ Therefore, construction period TAC emissions would not result a new significant impact not identified in the FEIR.

Operational Impacts of the Modified Project

Similar to the 2008 project, the tower improvements would not generate air emissions as a result of project operations and the modified project would not generate appreciable new vehicle trips in the long-term. Likewise, there would be no air quality impacts with regard to the tower improvements being a source or a receptor of odor or TAC emissions.

⁴¹ ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, October 2010.

⁴² United State Environmental Protection Agency (USEPA), "Clean Air Nonroad Diesel Rule: Fact Sheet," May 2004.

⁴³ As explained in the BAAQMD's *California Environmental Quality Act Air Quality Guidelines*: "Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet. In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of health risk." BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2012, page 8-6.

⁴⁴ California Code of Regulations, Title 13, Division 3, §2485. This would only apply to heavy duty on-road vehicles.

Air Quality Conclusion

The FEIR did not identify any significant effects related to air quality. The improvements proposed under the modified project would not result in new significant air quality impacts and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. With implementation of the City's Construction Dust Control Ordinance, FEIR Mitigation Measure No. 1 is no longer required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant impacts related to air quality from either construction or operation, either individually or cumulatively.

Noise and Vibration

Summary of Noise and Vibration Effects of 2008 Project FEIR

The FEIR (in the project Initial Study) analyzed the potential for noise from the 2008 project to result in exposure of persons to noise levels in excess of standards under the General Plan or San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code); substantial temporary increases in noise levels; and exposure to excessive vibration largely in the context of construction-related noise. These impacts were identified as less than significant in the FEIR because no unusual construction methods were proposed, standard construction equipment would be required to comply with Noise Ordinance standards, and the majority of the proposed construction would be performed over 200 feet from the nearest residences.

The FEIR analysis also determined that there would be no noise impacts with regard to substantial permanent increases in noise levels because no new noise generating equipment was proposed at the site as part of operations of the 2008 project, and because the 2008 project would not generate new operational-related vehicle trips. The FEIR also reported that there would be no noise impacts with regard to the 2008 project being substantially affected by existing noise levels, as it would not result in a new sensitive land use. In addition, the FEIR also determined that the proposed improvements to the tower would not alter noise conditions related to wind noise.

Existing Noise Levels on Project Site

A survey of existing noise levels around the perimeter of the project site was conducted in October 2013. Short-term noise monitoring was conducted at three locations. The first location (ST1) was at the western property boundary approximately 200 feet from residences on Dellbrook Avenue. The second location (ST2) was at the southern property boundary approximately 300 feet from residences on Panorama Drive and Fairview Court. The third location (ST3) was at the intersection of La Avanzada Street and Palo Alto Avenue. Monitored noise levels are presented in **Table 2**, below.

Construction Noise and Vibration Impacts of the Modified Project

Given the differences in timing, location and type of construction associated with the proposed antenna/equipment improvements on the tower site and erosion control improvements, noise associated with each of these categories of construction is described separately below.

TABLE 2
SHORT- TERM AMBIENT NOISE LEVEL DATA IN THE PROJECT AREA

Measurement Location ^a	Time	Noise Levels in dBA		Predominant Sources
		Hourly Leq	L _{max}	
ST1. Western property boundary approximately 200 feet from residences on Dellbrook Avenue	11:48	66	71	Crane operations
ST2. Southern property boundary approximately 300 feet from residences on Panorama Drive	12:01	65	69	HVAC equipment
ST3. North of the project site at the intersection of La Avanzada Street and Palo Alto Avenue	12:35	50	50	Distant traffic

NOTE: L_{eq} represents the constant sound level; L_{max} is the maximum noise level.

^a Please see Figure 1 for street locations.

SOURCE: Environmental Science Associates, 2013.

Construction Noise and Vibration Impacts of the Tower Improvements Proposed under the Modified Project

As described in the Project Description, the tower improvements proposed under the modified project would involve six to nine months of construction. As also noted above, while the project sponsor plans to stage the work, there still exists potential for overlapping activities and, thus, the potential for there to be between five to fifteen workers at the site on any given construction day, depending on activity. In addition, there would be a total estimated 25 to 35 truck round-trips over the duration of the six to nine month construction period. These construction-related vehicle trips would temporarily increase traffic volumes above existing volumes, but would still not be substantial enough to generate a noticeable increase in local roadway noise (a doubling of existing traffic volumes).

Construction equipment required for the tower improvements would involve two cranes, a forklift and a skid winch. **Table 3** presents the maximum noise levels generated by construction equipment identified by the project sponsor as likely to be used during construction.⁴⁵ Physical attachment of each antenna/equipment improvement to Sutro Tower would be in the same manner that antennas have been attached to the tower since it was constructed: trained installers physically would climb to the particular installation point on the tower and would hand install each attachment with handheld air-powered wrenches. Proposed construction would be required to comply with the San Francisco Noise Ordinance, which prohibits construction activities between 8:00 p.m. and 7:00 a.m. and limits noise from any individual piece of construction equipment, except impact tools approved by the Department of Public Works, to 80 dBA at 100 feet. As shown in Table 3, all equipment proposed for tower improvements would be consistent with the San Francisco Noise Ordinance. Accordingly, the proposed tower improvements would not generate noise levels in excess of standards established in the local noise ordinance, and the modified project would not result in new or substantially more severe impacts, compared to those reported in the FEIR.

⁴⁵ Data is not available for a skid winch proposed during construction, but the motor on a skid winch is typically approximately 45 horsepower (hp), which is relatively small compared to a crane (475 hp) or a forklift (130 hp), and consequently, would be expected to generate less noise than these other equipment types.

**TABLE 3
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT FOR
PROPOSED TOWER IMPROVEMENTS**

Construction Equipment	Noise Level (dBA, Lmax at 50 Feet)	Noise Level (dBA, Lmax at 100 Feet)
Crane	81	75
Fork Lift	86	80

NOTE: Lmax = maximum instantaneous noise level. Cranes have an acoustical use factor of 16% which reduces the average noise level during a given hour.

SOURCE: FHWA *Roadway Construction Noise Model User's Guide, Final Report, 2006*; Ventura County, *Construction Noise Threshold Criteria and Control Plan, 2010*

With regard to temporary increases in noise levels, operation of two cranes and a forklift would result in noise levels of approximately 68 dBA at the nearest receptor 200 feet away, as calculated by the Roadway Construction Noise Model. However, receptors are at a lower elevation than the project site and shielding/absorption of noise by the vegetated hillside of up to 5 dBA would be expected to occur, depending on the location, reducing noise levels to approximately 63 dBA. Existing monitored daytime noise levels at the western property boundary were found to be 66 dBA, Leq.⁴⁶ Existing monitored daytime noise levels at the southern property boundary were determined to be 65 dBA, Leq. Construction noise associated with the proposed tower improvements would be below the existing ambient monitored noise level at these locations. Moreover, construction-related noise of the proposed tower improvements would be temporary, restrictive in hours and occurrence, and would comply with Article 29; thus, it would be considered less than significant.

None of the equipment that would be used for the tower improvements is identified by Caltrans⁴⁷ as a potential source of vibration; consequently, no vibration impacts would be associated with these activities.

Construction Noise and Vibration Impacts of the Site and Erosion Control Improvements Proposed under the Modified Project

As described in the Project Description, the site improvements proposed on the south hillside of the project property (erosion control, drainage improvements, retaining wall, etc.) under the modified project would require approximately four months to complete, and the site driveway improvements proposed on the north side of the project site (on La Avanzada Street) would occur within the last two weeks of that four month duration. The number of daily construction workers at the site for these improvements would vary depending on activity, but would range between eight and ten workers. In addition, there would be a total of up to approximately 70 truck round-trips over the duration of the four month construction period (an average daily increase of less than two truckloads per day) to import base rock, drainage rock underlayment, concrete and asphalt and export of organic material and grindings. These construction-related vehicle trips would temporarily increase traffic volumes above existing volumes, but would not be substantial enough to generate a noticeable increase in roadway noise (a doubling of existing traffic volumes), even when considered in combination with the tower improvement vehicle trips discussed above.

⁴⁶ Leq = equivalent noise level. The equivalent sound level is used to describe noise over a specified period of time, typically 1 hour, in terms of a single numerical value.

⁴⁷ Caltrans, Transportation and Construction Vibration Guidance Manual, 2013.

Construction equipment required for the site improvements proposed on the south hillside of the project property would involve three excavators and two loaders. Construction equipment required for the driveway improvements proposed on the north side of the project property would involve a stump grinder, a backhoe, loaders, a grader, a paver, and rollers. **Table 4** presents the maximum noise levels generated by construction equipment identified by the project sponsor as likely to be used during construction for these activities. As shown in Table 4, all equipment would be consistent with the San Francisco Noise Ordinance (limit of 80 dBA at 100 feet). Accordingly, the proposed site and erosion control improvements would not generate noise levels in excess of standards established in the Noise Ordinance, and the modified project would not result in new or substantially more severe construction noise impacts than that identified in the FEIR, nor would it constitute a new significant impact not previously analyzed.

**TABLE 4
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT USED FOR
PROPOSED SITE AND EROSION CONTROL IMPROVEMENTS**

Construction Equipment	Noise Level (dBA, Lmax at 50 Feet)	Noise Level (dBA, Lmax at 100 Feet)
Excavator	81	75
Loader	79	73
Grinder	82	76
Backhoe	78	72
Grader	85	79
Paver	77	71
Roller	80	74

NOTE: Lmax = maximum instantaneous noise level.

SOURCE: FHWA, *Roadway Construction Noise Model User's Guide, Final Report*, 2006; Ventura County, *Construction Noise Threshold Criteria and Control Plan*, 2010

With regard to temporary noise increases, operation of two excavators (not including the third mini excavator) and two loaders on the southern hillside would result in noise levels of approximately 72.5 dBA at the nearest receptor 150 feet away, as calculated by the Roadway Construction Noise Model. However, receptors are at a lower elevation than the project site and shielding/absorption of noise by the vegetated hillside of up to 5 dBA would be expected to occur, depending on the location. Construction equipment associated with these site improvements under the modified project would generate noise that could be perceptible by occupants of nearby properties. However, construction-related noise of the proposed erosion control improvements would be temporary, restrictive in hours and occurrence, would comply with Article 29 and therefore, would be less than significant.

With regard to temporary noise increases from the proposed driveway improvements on the northern end of the site property, much of the equipment would operate sequentially. Assuming simultaneous operation of a grader and a loader, noise levels of approximately 77.5 dBA would result at the nearest receptor approximately 75 feet away, at the end of Palo Alto Avenue, as calculated by the Roadway Construction Noise Model. Although road widening and repaving activities would generate noise levels above existing conditions, the duration of this activity (two weeks) would be limited and similar to street maintenance that periodically occurs on public streets throughout San Francisco. Moreover, the roadway

work other than at the extreme northern end of the proposed improvements would occur farther from the nearest residence, and would generate less noise at this location. Therefore, construction equipment would generate noise that could be considered an annoyance by occupants of nearby properties but not to the extent that the impact would be considered significant because construction-related noise of the proposed erosion control improvements would be temporary, restrictive in hours and occurrence, and would comply with the restrictions set forth in Article 29. Accordingly, the modified project would not result in a new significant construction noise impact compared to the impacts analyzed in the FEIR, nor would it cause a substantial increase in the severity of previously identified impacts.

None of the proposed construction equipment is identified by Caltrans as a potential source of vibration except for vibratory rollers, which can result in a peak particle velocity of 0.210 inches per second at 25 feet.⁴⁸ The nearest receptor to the proposed driveway improvements where a roller may be used would be residences on Palo Alto Avenue, approximately 75 feet away. At this distance, vibration from roller activity would be reduced to 0.04 inches per second which would be below building damage criterion of 0.5 inches per second and below the strongly perceptible standard of 0.1 inches per second. Sutro Tower, the transmitter building and other essential buildings and equipment on the project site would similarly be located a sufficient distance from vibratory roller activity to not be adversely affected by short-term vibration effects.

Operational Impacts of the Modified Project

Similar to the 2008 Project, the tower improvements would not result in substantial permanent increases in noise levels because no new noise generating equipment would be installed and the project would not generate appreciable new vehicle trips in the long-term. Likewise, there would be no noise impacts with regard to the tower improvements being substantially affected by existing noise levels, as the modified project would not result in a new noise sensitive land use. Similar to the 2008 project, none of the proposed tower improvements would substantially alter noise levels resulting from wind passing through the tower structure.

Noise and Vibration Conclusion

The FEIR did not identify any significant effects related to noise. The improvements proposed under the modified project would not result in a new significant impact related to noise and vibration and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant noise or vibration impacts, either individually or cumulatively.

Hydrology and Water Quality

Summary of Hydrologic and Water Quality Effects of 2008 Project in FEIR

The FEIR (in the project Initial Study) reported that during construction, the project would be required to comply with all applicable local wastewater discharge and water quality requirements. The FEIR determined that since no ground disturbance was proposed during construction, the project would not result in short-term increases in erosion and siltation. The FEIR also determined that since the project would not change the amount of impervious area or alter drainage patterns, it would not affect surface

⁴⁸ Caltrans, Transportation and Construction Vibration Guidance Manual, 2013.

runoff rates, increase potential for flooding, or affect groundwater resources. Furthermore, the FEIR also determined that the proposed antennas and equipment that would be installed on the tower would not result in degradation of surface runoff water quality. The FEIR concluded that the project impact to water resources would not be significant, either individually or cumulatively.

Hydrologic and Water Quality Impacts of the Tower Improvements Proposed under the Modified Project

The tower improvements proposed under the modified project would not result in any different or greater impacts on hydrology and water quality than that discussed in the FEIR. As with the 2008 project, construction of the tower improvements proposed under the modified project would be required to comply with all applicable local wastewater discharge and water quality requirements. Similar to the 2008 project, the tower improvements proposed under the modified project would not result in ground disturbance or an increase in impervious surfaces and, consequently, these improvements would not affect surface runoff rates, increase flooding, contribute to siltation, or affect groundwater resources. As with the 2008 project, the additional antennas and small equipment proposed on the tower under the modified project would be painted if at all with water-resistant paints that would not leach into surface water during storm events. The proposed ground-level dish would contain a factory coating and consequently, would not require painting. Accordingly, the short- and long-term effects of the tower improvements proposed under the modified project on hydrology and water quality would be the same as those identified in the FEIR (less than significant), and no new significant impact would result.

Hydrologic and Water Quality Impacts of the Site and Erosion Control Improvements Proposed under the Modified Project

Construction activities associated with the proposed ground-level site improvements, including clearing, grading and excavation, could temporarily create conditions whereby soils are more susceptible to erosion by wind or stormwater runoff, which may result in short-term increases in siltation and other pollutants in surface water runoff and associated degraded water quality. Stormwater that occurs within the construction zone for the proposed ground-level improvements under the modified project drains via on-site stormdrains or overland down slope, depending on location, and ultimately enters the City's combined sewer system, and hence is treated at the Oceanside Water Pollution Control Plant and discharged to the Pacific Ocean.

The federal Clean Water Act effectively prohibits discharges of stormwater from construction projects unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Construction stormwater discharges to the City's combined sewer system would be subject to the requirements of Article 4.2 of the *San Francisco Public Works Code* (supplemented by DPW Order No. 158170).⁴⁹ At a minimum, the City requires that a project sponsor develop and implement an erosion and sediment control plan to reduce the impact of runoff from a construction site. The plan must be reviewed and approved by the SFPUC prior to implementation, and the SFPUC conducts periodic inspections to ensure compliance with the plan. Any stormwater drainage during construction that flows to the City's combined sewer system and receives treatment at the Oceanside Water Pollution Control Plant would be discharged in compliance with the City's existing NPDES permit. Therefore, significant water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of construction-related stormwater runoff would be precluded by adequate treatment of

⁴⁹ Article 4.2 incorporates and implements the City's NPDES permit for the Oceanside Water Pollution Control Plant. This permit also incorporates the requirements of the federal Combined Sewer Overflow (CSO) Control Policy.

stormwater at Oceanside Water Pollution Control Plant, and with implementation of site erosion control measures in compliance with Article 4.2 of the *San Francisco Public Works Code*. As discussed in the Project Description, during construction proposed soil stabilization controls that would be implemented in the work areas where ground disturbance would occur, include hydroseeding, use of fiber rolls and/or jute netting, storm drain inlet protection, and in the work area of the site driveway construction of a stabilized construction entrance and concrete washout basin. With implementation of an erosion and sediment control plan, there would be no new significant impacts related to potential increases in sedimentation and pollutants in stormwater, compared to those analyzed in the FEIR, nor would there be a substantial increase in the severity of a previously identified significant impact.

The ground level improvements proposed under the modified project would result in a minor increase (approximately 1,700 square feet) in impervious surfaces on site. This minor increase in impervious surfaces would not demonstrably increase peak stormwater runoff rates from the project site that would result in flooding, or affect groundwater recharge. Since the total disturbed ground surface area would be less than 5,000 square feet, the proposed project is not subject to the SFPUC *Stormwater Design Guidelines*. Nevertheless, the project proposes a number of permanent stormwater improvements, including installation of new stormdrains on the southern hillside, and installation of a riprap lined swale on the east side of La Avanzada Street within the project site, which would improve stormwater collection over existing conditions. These stormwater collection improvements, in combination with the proposed permanent erosion control improvements, would also serve to reduce the potential for erosion and associated sedimentation in stormwater runoff.

Hydrology and Water Quality Conclusion

The FEIR did not identify any significant effects related to hydrology and water quality. The improvements proposed under the modified project would not result in a new significant impact to hydrology and water quality and would not substantially increase the severity of any previously identified significant impact, nor would new mitigation measures be required. No new information has arisen, nor have there been any changes in circumstances, such that the modified project would result in new or substantially more severe significant impacts related to hydrology or water quality, including the potential for flooding, effects to runoff and water quality from sedimentation and pollutants, and effects on groundwater supply and recharge, either individually or cumulatively.

Greenhouse Gases

Current requirements related to greenhouse gas (GHG) analysis were established in 2010, subsequent to certification of the FEIR. Therefore, GHGs are discussed below consistent with current procedures and requirements. The GHG analysis included herein includes a qualitative discussion of whether construction and operation of the modified project would result in significant GHG emissions.

Greenhouse Gas Evaluation

GHG emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the combination of GHG emissions from past, present, and future projects have contributed and will contribute to global climate change and its associated environmental impacts.

The BAAQMD has prepared guidelines and methodologies for analyzing GHGs. These guidelines are consistent with CEQA Guidelines Sections 15064.4 and 15183.5 which address the analysis and determination of significant impacts from a proposed project's GHG emissions. CEQA Guidelines Section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. CEQA Guidelines Section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of greenhouse gases and describes the required contents of such a plan. Accordingly, San Francisco has prepared *Strategies to Address Greenhouse Gas Emissions* (GHG Reduction Strategy)⁵⁰ which presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's Qualified GHG Reduction Strategy in compliance with the CEQA Guidelines. The actions outlined in the strategy have resulted in a 14.5 percent reduction in GHG emissions in 2010 compared to 1990 levels,⁵¹ exceeding the year 2020 reduction goals outlined in the BAAQMD's *2010 Clean Air Plan*, Executive Order S-3- 05,⁵² and Assembly Bill 32 (also known as the Global Warming Solutions Act.)⁵³

Given that the City's local greenhouse gas reduction targets are more aggressive than the State and Region's 2020 GHG reduction targets and consistent with the long-term 2050 reduction targets,⁵⁴ the City's GHG Reduction Strategy is consistent with the goals of EO S-3-05, AB 32, and the Bay Area 2010 Clean Air Plan. Individual project compliance with the City's Greenhouse Gas Reduction Strategy is demonstrated by completion of the Compliance Checklist for Greenhouse Gas Analysis. Projects that are consistent with San Francisco's *Strategies to Address Greenhouse Gas Emissions*⁵⁵ are determined to be consistent with San Francisco's Qualified GHG Reduction Strategy and therefore would result in a less-than-significant GHG impact. An assessment of the modified project's compliance with San Francisco's *Strategies to Address Greenhouse Gas Emissions* is provided in the *Compliance Checklist for Greenhouse Gas Analysis*, which concluded the modified project would comply with the GHG reduction strategies.⁵⁶

Therefore, the modified project would not result in a new significant impact associated with greenhouse gases. The contribution to cumulative impacts related to greenhouse gas emissions would not be cumulatively considerable.

⁵⁰ San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco*, 2010. The final document is available online at: <http://www.sf-planning.org/index.aspx?page=2627>. The *Clean Air Plan*, Executive Order S-3-05, and Assembly Bill 32 goals, among others, are to reduce GHGs in the year 2020 to 1990 levels.

⁵¹ San Francisco Department of Environment (DOE), *San Francisco Climate Action Strategy, 2013 Update*.

⁵² Executive Order S-3-05, sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million MTCO₂E); by 2020, reduce emissions to 1990 levels (estimated at 427 million MTCO₂E); and by 2050 reduce emissions to 80 percent below 1990 levels (approximately 85 million MTCO₂E).

⁵³ The *Clean Air Plan*, Executive Order S-3-05, and Assembly Bill 32 goals, among others, are to reduce GHGs in the year 2020 to 1990 levels.

⁵⁴ San Francisco's Greenhouse Gas Reduction ordinance requires that by 2008, the City determine its GHG emissions for the year 1990, the baseline level with reference to which target reductions are set; by 2017, reduce GHG emissions by 25 percent below 1990 levels; by 2025, reduce GHG emissions by 40 percent below 1990 levels; and by 2050, reduce GHG emissions by 80 percent below 1990 levels.

⁵⁵ San Francisco Planning Department. *Strategies to Address Greenhouse Gas Emissions*. November 2010. Available online at: http://sfmea.sfplanning.org/GHG_Reduction_Strategy.pdf.

⁵⁶ San Francisco Planning Department, *Compliance Checklist for Greenhouse Gas Analysis: Table 1. Private Development Projects, Sutro Tower Antenna Additions and Site and Erosion Control Improvements*. April 15, 2014. This document is available for review as part of Case File No. 2007.0206E at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, 94103.

Other Less than Significant Environmental Impacts

The FEIR, in the project Initial Study, determined that the 2008 project would not result in significant impacts in the following areas: Land Use and Land Use Planning; Population and Housing; Cultural Resources; Transportation and Circulation; Wind and Shadow; Utilities and Service Systems; Public Services; Hazards and Hazardous Materials (excluding RFR); Mineral and Energy Resources; and Agriculture Resources. The following discussion briefly describes why environmental effects associated with the modified project under these topics would also be less than significant, as was the case for the 2008 project, and why the modified project would not result in any new significant impacts.

- **Land Use and Land Use Planning.** All construction proposed under the modified project would occur within the site property, and subsequent operations with implementation of the modified project would be unchanged from those at present. Consequently, the modified project would not physically divide the arrangement of existing uses and activities that surround it. Sutro Tower is an existing use that has been operating on the project site since 1973. The modified project would intensify and add similar uses to the tower and site. The proposed tower antenna additions and site and erosion control improvements would not change the use of the existing facility or noticeably change the bulk or intensity of the tower and buildings on-site. As a result, the modified project would not introduce new or incompatible uses to the area.

The modified project would also not conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. The project site is located within a Residential House, One Family (Detached Dwellings) (or RH-1(D)) zoning district, where the Sutro Tower facilities are conditionally permitted. The Conditional Use (CU) authorization issued for Sutro Tower authorizes the construction of the tower and accessory structures and the use of the facility for radio frequency broadcasting. No amendment to Sutro Tower's CU authorization is required under the modified project.

As such, the modified project would neither result in a new significant effect on land use nor increase the severity of any previously identified impact, and no new mitigation is required.

- **Population and Housing.** As discussed in the Project Description, the modified project would generate a short-term demand for up to approximately 15 construction workers. Since the proposed construction activities would be temporary, the modified project would not result in growth-inducing impacts, would not result in an increase in the local population or housing, and would not indirectly induce growth by creating new opportunities for local industry or commerce. Once the proposed facilities are operational, no change in long-term employment at or occupancy of the tower facilities is anticipated. Given the minor improvements proposed under the modified project, and that all proposed facilities under the modified project would occur within the site property, the modified project (similar to the 2008 project) would not result in displacement of any housing or people. As with the 2008 project, the modified project would also not contribute to any potential cumulative effects related to population and housing. As such, the modified project would neither result in a new significant effect on population and housing nor increase the severity of any previously identified significant impact, and no new mitigation is required.

- **Cultural Resources.** The portions of the project site proposed for improvements have been disturbed by construction in the past, primarily during the original construction of Sutro Tower and its ancillary buildings. The FEIR reported that no cultural resources have been previously identified within or directly adjacent to the project site, or within a one-quarter mile of the project area. Additionally, Sutro Tower is not an historical or cultural resource as defined by CEQA Guidelines Section 15064.5, and is not in an historic district. Any proposed ground-level disturbance that would occur under the modified project, such as site clearing and minor grading, would be relatively shallow in depth (between 0 to 3 feet, with limited exceptions, such as where the proposed retaining wall would require drilled piers to a minimum of between 8 and 12 feet into the soil). Given these factors, the modified project would neither result in a new significant effect on cultural resources nor increase the severity of any previously identified impact, and no new mitigation is required.
- **Transportation and Circulation.** The project site is accessible via Dellbrook Avenue and La Avanzada Street. Dellbrook Avenue is a residential street that intersects with Clarendon Avenue. La Avanzada Street is a paved road that leads to the site, a portion of which is privately owned by the project sponsor. The modified project would not introduce any new uses to the project site that would generate long-term changes in traffic on local roadways. Thus, potential traffic and transportation effects on area roadways would be confined to construction of the proposed project.

Construction activities would include daily vehicle trips generated by the arrival and departure of construction workers. As described in the Project Description, the proposed antenna/equipment improvements would require three to four construction workers intermittently over a six- to nine-month period, and the other proposed site improvements would require 8 to 10 workers over a three- to four-month period. The proposed antenna/equipment improvements would generate a modest number of truck deliveries (e.g. pre-fabricated antenna sections and associated assembly materials) estimated at a total of 5 large truck (e.g., 5-axle semi-trailer) round trips, and 20 to 30 smaller delivery truck trips. The other proposed improvements would require deliveries of materials to the site (e.g., base and drain rock, organic materials, concrete, asphalt), resulting in a total of approximately 70 mid-size to large truck (e.g., 3-axle, and 5-axle semi-trailer) round trips. La Avanzada Street would be used to access the site to haul the equipment and materials, with trucks likely arriving via Market Street, 17th Street, Clayton Street, Twin Peaks Boulevard, and Clarendon Avenue. Construction of the proposed project would not require any lane closures.

As with the 2008 project, construction-generated traffic associated with the modified project would be temporary and would not result in any long-term degradation in operating conditions or level of service on any of the roadways in the vicinity of the proposed project. Therefore, this short-term increase in vehicle trips would not substantially affect level of service and traffic flow on local roadways. The primary impacts from the movement of construction trucks would include short-term and intermittent lessening of roadway capacities due to slower movements and larger turning radii of the trucks compared to passenger vehicles. Because relatively few trucks would be used, and such truck activity would be dispersed throughout the construction duration, truck traffic associated with project construction would not substantially adversely affect either traffic conditions or cause substantial damage to local streets. In fact, the modified project would repave and widen the upper portion of La Avanzada Street, thereby improving the condition of this street compared to existing conditions.

Once constructed, the new antennas/equipment and site improvements would require routine maintenance trips and inspections, as is the case under existing conditions. Maintenance activities would not increase above existing levels for the facility and therefore, would not result in an increase of traffic in the project area.

The nearest airport to the project site is the San Francisco International Airport, located about 13 miles southeast of the City of San Francisco. At present, the tower is in compliance with all FAA regulations. The modified project would not require additional FAA-approved lighting, as it would not add additional height or bulk to the tower. There are no other elements of the modified project that would create a safety hazard for air traffic. Consequently, the modified project would not alter conditions with respect to air traffic safety.

There are no unusual design features or uses proposed as part of the modified project that would substantially increase traffic hazards. Likewise, the modified project would not result in an adverse change with regard to emergency access, as the project site is accessible from major streets, including Clarendon Avenue and Twin Peaks Boulevard. All proposed improvements would occur within the project site boundary, although the private upper portion of La Avanzada Street is informally used by the public. The proposed improvements, including widening, repaving, and striping for parking, on this portion of La Avanzada Street would serve to improve general vehicle circulation and parking at this location.

In summary, the modified project would neither result in new significant effects with regard to transportation nor increase the severity of any previously identified impact, and no new mitigation is required.

- **Wind and Shadow.** The additional antennas and small equipment that would be installed on the tower under the modified project would be relatively small in scale, and these improvements would not increase the height or bulk of the tower. Consequently, the tower improvements would not result in changes to ground-level winds nor substantially alter shadows in the area. Similarly, given the scale of ground-level site improvements proposed under the modified project, such improvements would not have a noticeable effect on wind or shadow. As a result, the modified project (similar to the 2008 project) would not have any new significant adverse impacts on wind and shadow nor increase the severity of any previously identified impact, and no new mitigation is required.
- **Utilities and Service Systems.** The modified project would not increase population on the site or area, and consequently, would not increase long-term demand for or create a need for construction of new or expanded water supplies, water and wastewater treatment facilities, stormwater drainage facilities or solid waste collection facilities. The modified project would create a finite amount of construction debris during the construction phase; any portion of this that would not be recycled and thus disposed of at a landfill would not adversely affect remaining landfill capacity. Consequently, the modified project would neither result in a new significant effect on utilities or service systems nor increase the severity of any previously identified significant impact, and no new mitigation is required.
- **Public Services.** The modified project would not increase demand for public services such that it would require construction of new or altered facilities for fire and police protection, schools, parks or other services. Consequently, the modified project would neither result in a new

significant effect on public services nor increase the severity of any previously identified significant impact, and no new mitigation is required. See also Risk of Fire discussion, above.

- **Hazards and Hazardous Materials.** As reported in the FEIR, the project site is not located on any environmental database, nor in proximity to any properties listed on the State Cleanup Sites List or Leaking Underground Storage Tanks List, or lists of other sites of potential environmental concern.⁵⁷ No elements of the modified project would create a public safety hazard. Standard construction materials (e.g., concrete, rebar steel, drainage rock, storm drains), paints and solvents would be used during project construction and/or maintenance during operation. The modified project would not involve installation or alteration of any fuel tanks or emergency generators, or increase the use of any hazardous materials at the project site during operation. The tower is currently in compliance with all applicable FAA regulations, and under the modified project would not require additional safety lighting; consequently, the modified project would have a less than significant effect on air traffic safety. Therefore, the modified project would neither result in a new significant effect related to hazards or hazardous materials nor increase the severity of any previously identified impact, and no new mitigation is required. See also Radio Frequency Radiation, Risk of Fire, and Hydrology and Water Quality discussion, above.
- **Mineral and Energy Resources.** No mineral resources are located on or near the project site, and as a result, the modified project would not result in the loss of availability of a locally-important mineral resource site. Sutro Tower currently meets all applicable state and local codes concerning energy consumption, and would continue to do so under the modified project; consequently, the modified project would not encourage activities which would result in the use of large amounts of energy in a wasteful manner. Therefore, the modified project would neither result in a new effect on mineral or energy resources nor increase the severity of any previously identified significant impact, and no new mitigation is required.
- **Agriculture and Forest Resources.** The project site is identified by the Department of Conservation Farmland Mapping and Monitoring Program as Urban and Built-Up Land. Because the site does not contain agricultural uses and is not zoned for such uses, the modified project would not convert any important farmland or conflict with a Williamson Act contract. As stated in the Project Description, the modified project would remove 13 eucalyptus trees but would plant 9 new Coast Live oak trees. Consequently, the modified project would neither result in a new significant effect on agricultural or forest resources nor increase the severity of any previously identified impact, and no new mitigation is required.

⁵⁷ Department of Toxic Substances Control EnviroStor database at <https://www.envirostor.dtsc.ca.gov>; State Water Resources Control Board Geotracker database at <http://geotracker.waterboards.ca.gov>.

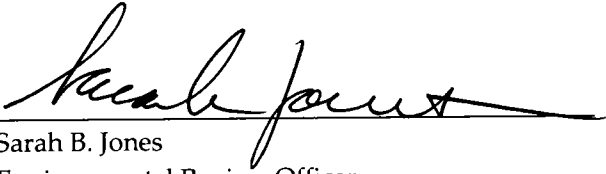
CONCLUSION

Based on the foregoing, it is concluded that the analyses conducted and the conclusions reached in the Final EIR certified on October 23, 2008 remain valid, and that no Subsequent or Supplemental EIR is required for the proposed project modifications. The proposed revisions to the project would not cause new significant impacts not identified in the FEIR, nor result in significant impacts that would be substantially more severe than those described in the FEIR, and no new mitigation measures would be necessary to reduce significant impacts. No changes have occurred with respect to circumstances surrounding the proposed project that would cause significant environmental impacts to which the project would contribute considerably, and no new information has been put forward to demonstrate that the modified project would cause new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts. Therefore, no supplemental environmental review is required beyond this Addendum.

I do hereby certify that the above determination has been made pursuant to State and Local requirements.

December 23, 2014

Date


Sarah B. Jones
Environmental Review Officer