4.8 NOISE

This section presents the environmental setting and impact analysis for noise for the Proposed Project and its alternatives. This section addresses noise concepts, existing noise levels, applicable regulations, environmental impacts, and mitigation measures to reduce or avoid significant effects.

4.8.1 Definitions

4.8.1.1 Overview

Noise is generally defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities (e.g., sleep, speech, recreation, and tasks demanding concentration or coordination), or when it has adverse effects on human or environmental health.

4.8.1.2 Metrics

Sound is an air pressure fluctuation that travels through many types of materials, including air. Sound levels are measured and expressed in decibels (dB), with 0 dB corresponding to the threshold of hearing (Ray 2010). Most audible sounds are made up of several pressure variations with different phases, frequencies, and amplitudes (Hansen 2001). A logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for young people is about 0 dB.

Individual dB ratings for different noise sources cannot be added directly to give the sound level for the combined noise from all sources. Instead, the combined noise level produced by multiple noise sources is calculated using logarithmic summation. For example, if one noise source produces a noise level of 80 dB, then two of the identical sources side by side would generate a combined noise level of 83 dB, or an increase of only 3 dB.

Because of the time-varying nature of environmental sound, there are various descriptors used to quantify the decibel level of sound experiences. Noise descriptors that are used in this analysis are described below.

A-Weighted Sound Level

The A-weighted sound level (dBA) is a noise measurement that deemphasizes the very low- and very high-frequency components of the sound. The de-emphasis of the very low and high frequencies mimics the frequency response of the human ear and correlates well with subjective reactions to noise (Caltrans 1998). The A-weighting therefore assists in analysis of how humans respond to sound and noise. Typical A-weighted noise levels measured in the environment and in industry are provided in Table 4.8-1.

Equivalent Sound Level

Equivalent sound level (L_{eq}) is the average A-weighted sound level during the entirety of a stated time period (Caltrans 2009). L_{eq} time periods in this section are 1-hour unless otherwise noted.

Table 4.8-1 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower at 100 feet	**70**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**60**	
		Large business office
Quiet urban daytime	**50**	Dishwasher in next room
Quiet urban nighttime	**40**	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: Caltrans 1998

Maximum Sound Level

Maximum sound level (L_{max}) is the highest instantaneous noise level during a specified time period. This descriptor is sometimes referred to as "peak (noise) level."

Community Noise Equivalent Level/Day Evening Night Sound Level

The Community Noise Equivalent Level (CNEL), also called the Day Evening Night Sound Level (L_{den}), is the average A-weighted noise level during a 24-hour day, obtained after addition of 5 dB in the evening from 7 PM to 10 PM and addition of 10 dB to sound levels in the night between 10 PM and 7 AM (Caltrans 1998). CNEL takes into account people's heightened

sensitivity during the evening hours and even more heightened sensitivity during the late night and early morning hours. CNEL is used in this section to describe air traffic noise from the Marine Corps Air Station (MCAS) Miramar airport.

Day/Night Average Sound Level

The day/night average sound level (L_{dn}) is the average A-weighted noise level during a 24-hour day, obtained after the addition of 10 dB from 10 PM to 7 AM. The L_{dn} takes into account people's heightened sensitivity to noise at night. Exterior background noises and noise levels inside buildings are generally lower at night. This reduced noise level causes other noises to become far more noticeable, as there is less background noise to drown them out.

4.8.1.3 Noise Attenuation

Most noise sources can be classified as either point sources, such as stationary equipment, or line sources, such as a roadway. Sound generated by a point source nominally diminishes (attenuates) at an approximate rate of 6 dBA for each doubling of distance away from the source. For example, a 60 dBA noise level measured at 50 feet from a point source would be approximately 54 dBA at 100 feet from the source and 48 dBA at 200 feet from the source. Noise from a line source (i.e., corona noise) nominally attenuates at approximately 3 dBA per doubling of distance.

4.8.1.4 Groundborne Vibration

Vibration is the physical manifestation of energy carried through the earth and structures. Groundborne vibration consists of rapidly fluctuating motions or waves. It has the potential to annoy people and damage buildings. Low-level vibrations can also cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is little risk of actual structural damage.

Construction activities can produce varying degrees of ground vibration, depending on the equipment and methods employed. Ground vibrations from construction activities very rarely reach levels high enough to cause damage to structures, although special consideration must be made in cases where fragile historical buildings are near the construction site.

4.8.1.5 Metrics

The most common measure used to quantify construction vibration amplitude is the peak particle velocity (PPV), defined as the maximum instantaneous peak velocity of the vibratory motion in inches per second.

4.8.1.6 Corona

The localized electric field near an energized conductor can be sufficiently concentrated to produce a small electric discharge, which can ionize air close to the conductors. This effect is called corona, and it is associated with all energized electric power lines but is especially common with high-voltage power lines. If the intensity of the electric field at the surface exceeds the insulating strength of the surrounding air, a corona discharge occurs in the form of heat and energy dissipation. Corona can result in the production of small amounts of sound,

radio noise, heat, and chemical reactions of air components. Modern power lines are designed, constructed, and maintained so that, during dry conditions, they operate below the corona-inception voltage and generate minimal corona-related noise. During inclement weather, an audible hum and crackling noise may be heard.

4.8.2 Approach to Data Collection

Noise and Vibration Studies

Community Noise Survey

San Diego Gas & Electric Company (SDG&E) conducted community noise surveys to characterize the daytime existing noise environment for the Proposed Project area. Noise surveys were conducted at the following times:

- Evening of October 25 to morning of October 26, 2013
- November 11, 2014 (afternoon)
- November 17, 2014 (afternoon)

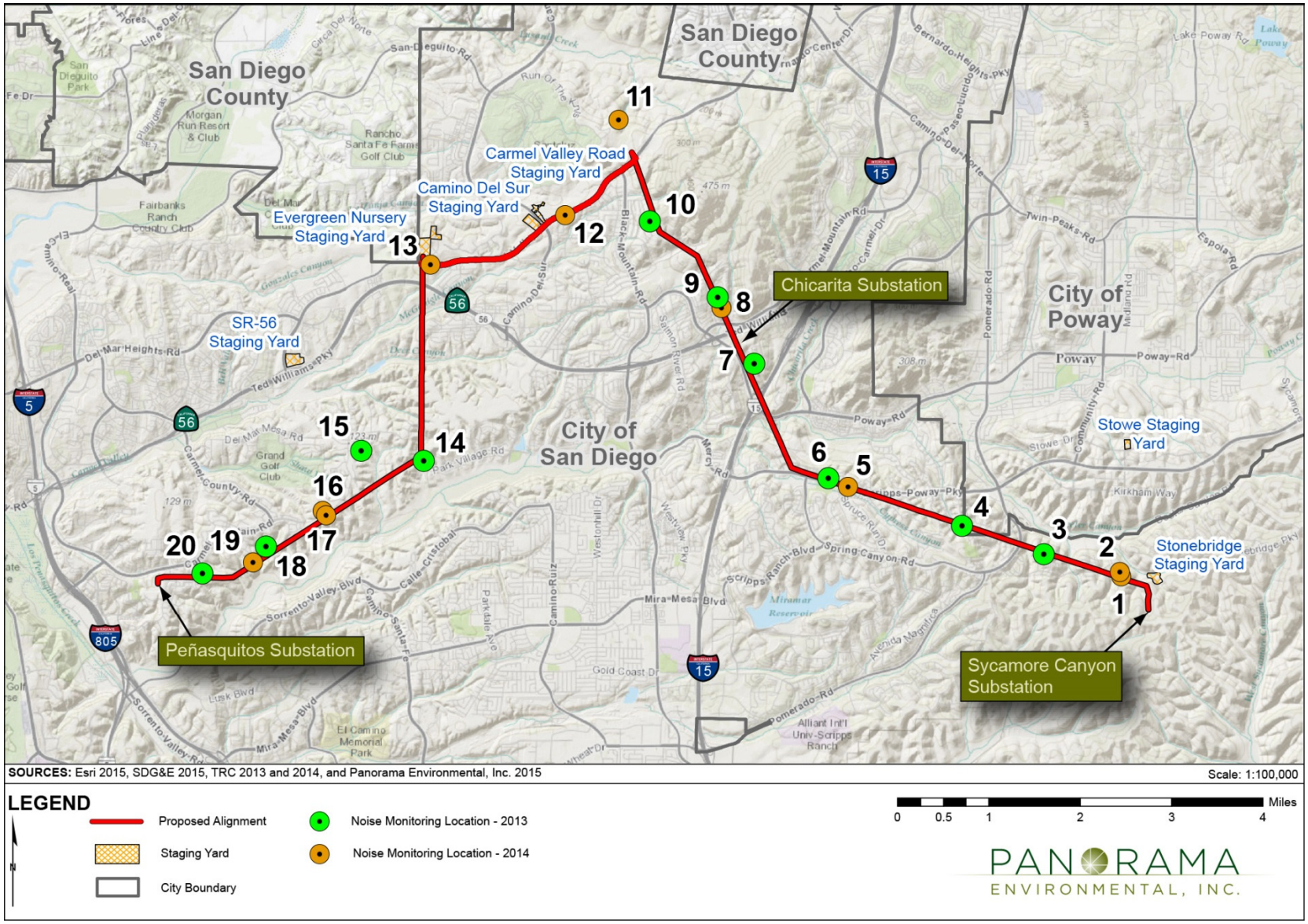
The noise survey on October 25 to 26, 2013 included short-term sampling, typically in 7 to 10 minute intervals, at ten survey locations along the Proposed Project alignment. The November 11 and 17, 2014, surveys included short-term ambient sound measurements taken over 20-minute periods at five locations. Figure 4.8-1 shows the noise survey locations for the 2013 and 2014 community noise surveys.

The selected noise survey locations are characteristic of the noise environment for the land use types in the project vicinity, including residential neighborhoods, rural open spaces, and uses near roadway arterials.

Continuous 24-Hour Measurements

Continuous 24-hour measurements were conducted at three locations (Locations 5, 8, and 19 on Figure 4.8-1) during the November 2014 noise surveys to provide a 24-hour typical noise level for the location. Measurements were taken at 1-minute intervals. A 24-hour continuous corona noise measurement was conducted at an existing 230-kV tower (Locations 1 and 2 on Figure 4.8-1) in order to demonstrate the decrease of corona noise as one moves farther away from the tower. The 24-hour measurement required two noise meters in order to measure the attenuation of noise over two doublings of distance between the meter and the noise source. The survey measured noise from an electrical line 70.5 feet high on a 230-kV tower. One meter was placed directly under the electrical line and the other was located 273 feet from the first meter, creating a hypotenuse of 282 feet (two doublings of the 70.5-foot distance) from the noise source. Each meter was set at 4.5 feet above ground, and set at approximately the same elevation with clear line of sight between each meter and the electrical line.

Figure 4.8-1 Noise Survey Locations



4.8.3 Environmental Setting

4.8.3.1 Regional Setting

Existing Noise Conditions

Ambient noise levels within the Proposed Project vicinity are influenced primarily by vehicular traffic, aircraft flyovers, corona noise, and animal sounds (TRC 2013, TRC 2014). Land uses near the Proposed Project area are primarily residential and recreational open space; however, the right-of-way (ROW) is also near military, commercial, public facility, and industrial land use areas. Open space areas are the quietest land use in the Proposed Project vicinity, although they are occasionally influenced by aircraft. Noise levels in suburban areas are higher and are mainly influenced by traffic on surface streets or highways, and aircraft.

Natural noise levels absent human activity are generally low in the Proposed Project vicinity. Noise levels in open space areas are expected to be as low as 31.1 dBA L_{min} (TRC 2014). Noise levels in the region are highest (84.8 dBA L_{max}) adjacent to major transportation facilities like freeways, highways, or other major arterials or roads.

4.8.3.2 Proposed Project Setting

Existing Noise Conditions

The Proposed Project area includes noise from MCAS Miramar air traffic and existing SDG&E facilities as well as noise from the surrounding suburban environment. The MCAS Miramar military airport is approximately 4.5 miles south of the Proposed Project area and air traffic from MCAS Miramar creates substantial intermittent noise in the area. Portions of Segments A, C, and D fall within the MCAS Miramar Airport Influence Area (AIA).

Existing SDG&E facilities contribute noise to the ambient noise levels in the Proposed Project area. Where high-voltage power transmission lines exist, the noise from corona discharge and similar associated electrical phenomena can be heard as a crackling or hissing sound. The existing substations also produce noise in the project area. Transformers are generally the major sources of audible noise within a substation. Transformer noise sources are core (e.g., non-load) noise, load noise (i.e., when electrical load is connected to a secondary winding in a transformer), cooling pump noise, and fan noise. The predominant noise from a transformer is a hum that emanates from the core of the transformer that is perceptible by the human ear.

Noise-Sensitive Receptors

Noise-sensitive receptors are land uses where an excessive amount of noise would interfere with normal activities. Noise-sensitive receptors are primarily residences, educational facilities, libraries, places of worship, hospitals, and passive recreation areas. Residences were identified within varying distances to the Proposed Project area, as close as 50 feet to the existing SDG&E ROW and 37 feet from the closest tower construction location along the transmission line corridor. Noise-sensitive receptors were determined within 1,000 feet of the Proposed Project transmission segments since the majority of construction would occur along Segments A through D. Noise-sensitive receptors are shown in Figures 4.8-2 through 4.8-6.

Figure 4.8-2 Noise-Sensitive Receptors near the Proposed Project Transmission Alignment (1 of 5)

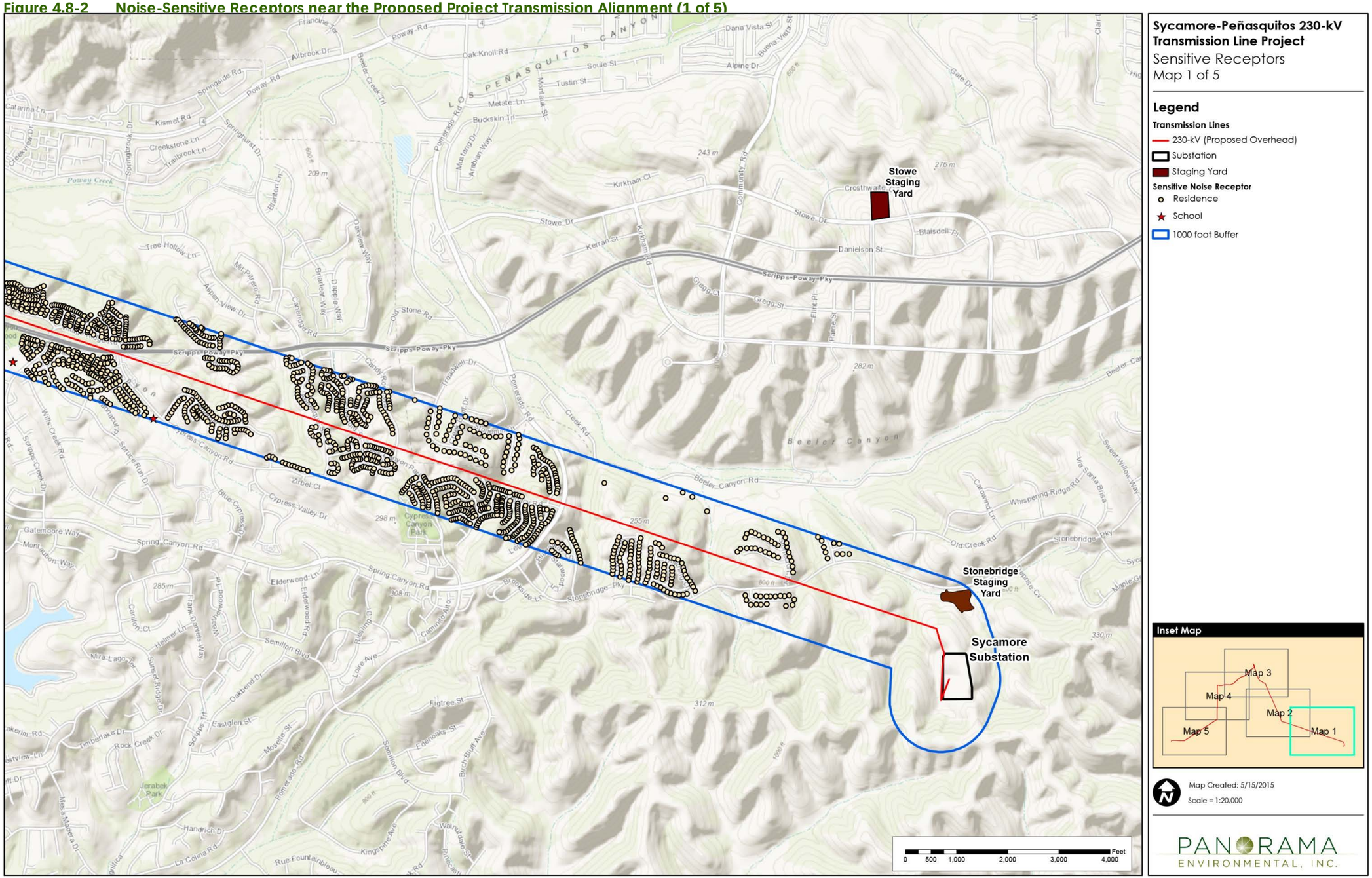
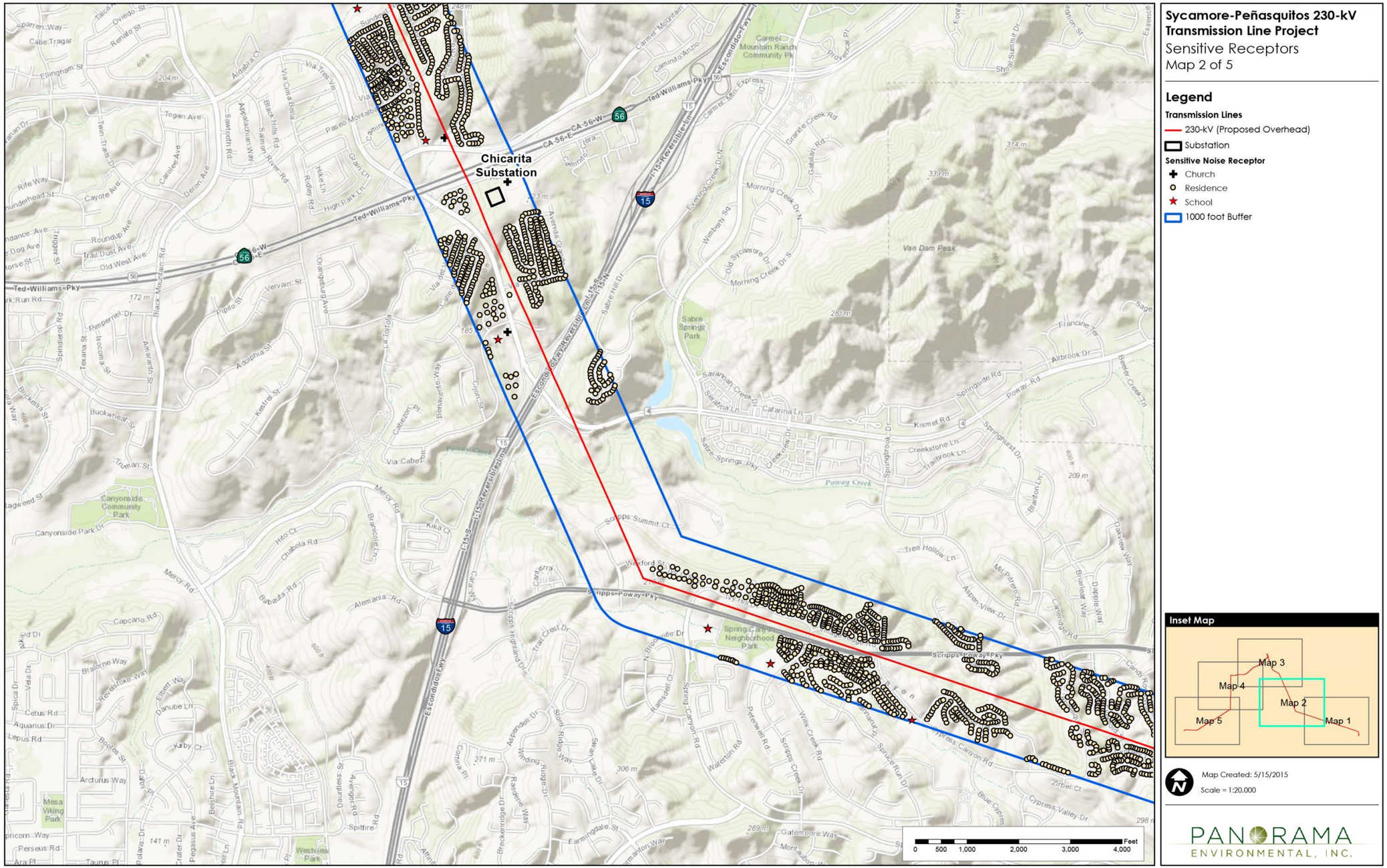


Figure 4.8-3 Noise-Sensitive Receptors near the Proposed Project Transmission Alignment (2 of 5)



Sycamore-Peñasquitos 230-kV Transmission Line Project
Sensitive Receptors
Map 2 of 5

Legend

Transmission Lines
- 230-kV (Proposed Overhead)
- Substation

Sensitive Noise Receptor
- Church
- Residence
- School
- 1000 foot Buffer

Inset Map

Map Created: 5/15/2015
Scale = 1:20,000

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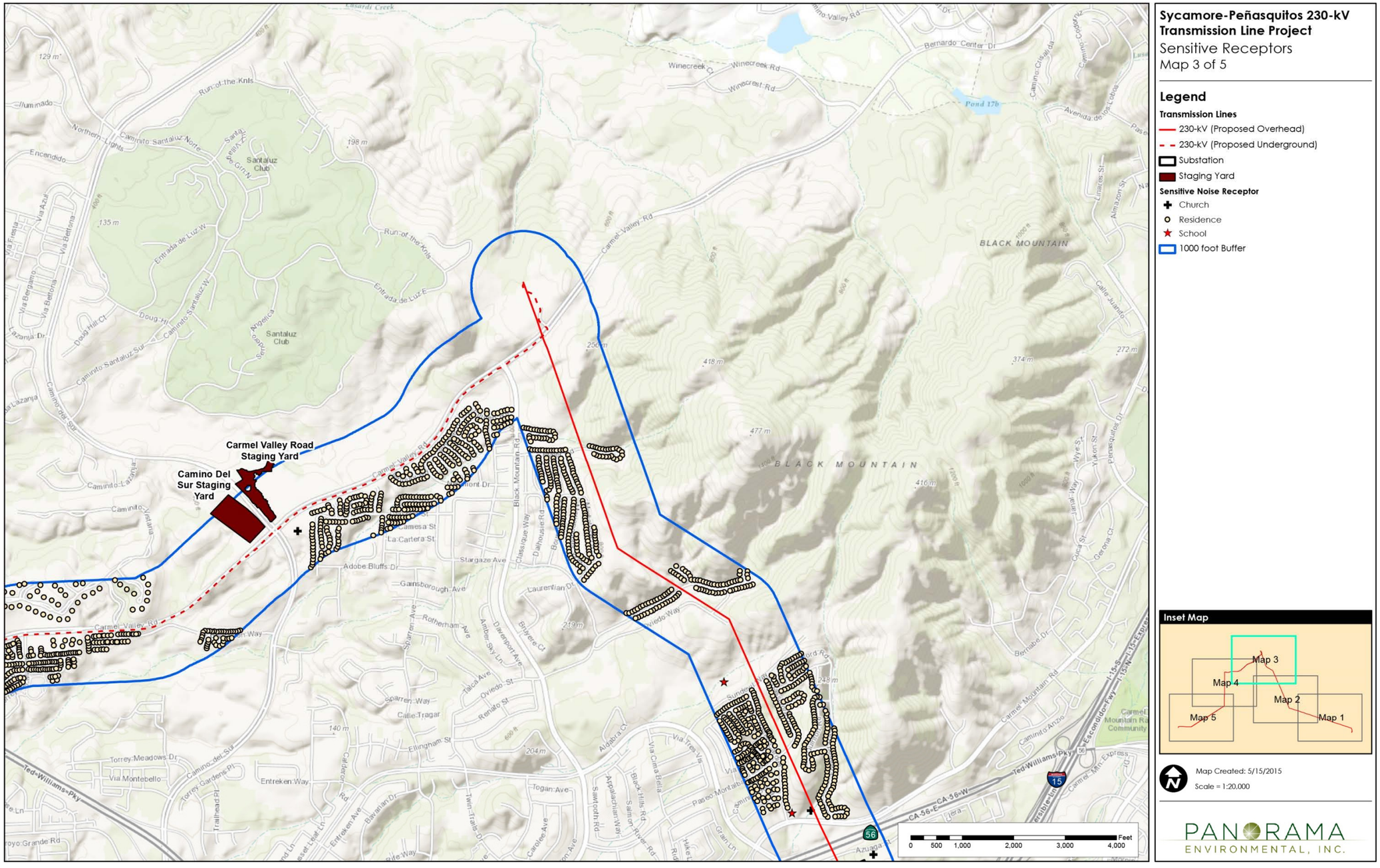
Figure 4.8-4 Noise-Sensitive Receptors near the Proposed Project Transmission Alignment (3 of 5)



Sycamore-Peñasquitos 230-kV Transmission Line Project
Sensitive Receptors
Map 3 of 5

Legend

Transmission Lines
- 230-kV (Proposed Overhead)
- 230-kV (Proposed Underground)
- Substation
- Staging Yard

Sensitive Noise Receptor
- Church
- Residence
- School
- 1000 foot Buffer

Inset Map

Map Created: 5/15/2015
Scale = 1:20,000

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Figure 4.8-5 Noise-Sensitive Receptors near the Proposed Project Transmission Alignment (4 of 5)

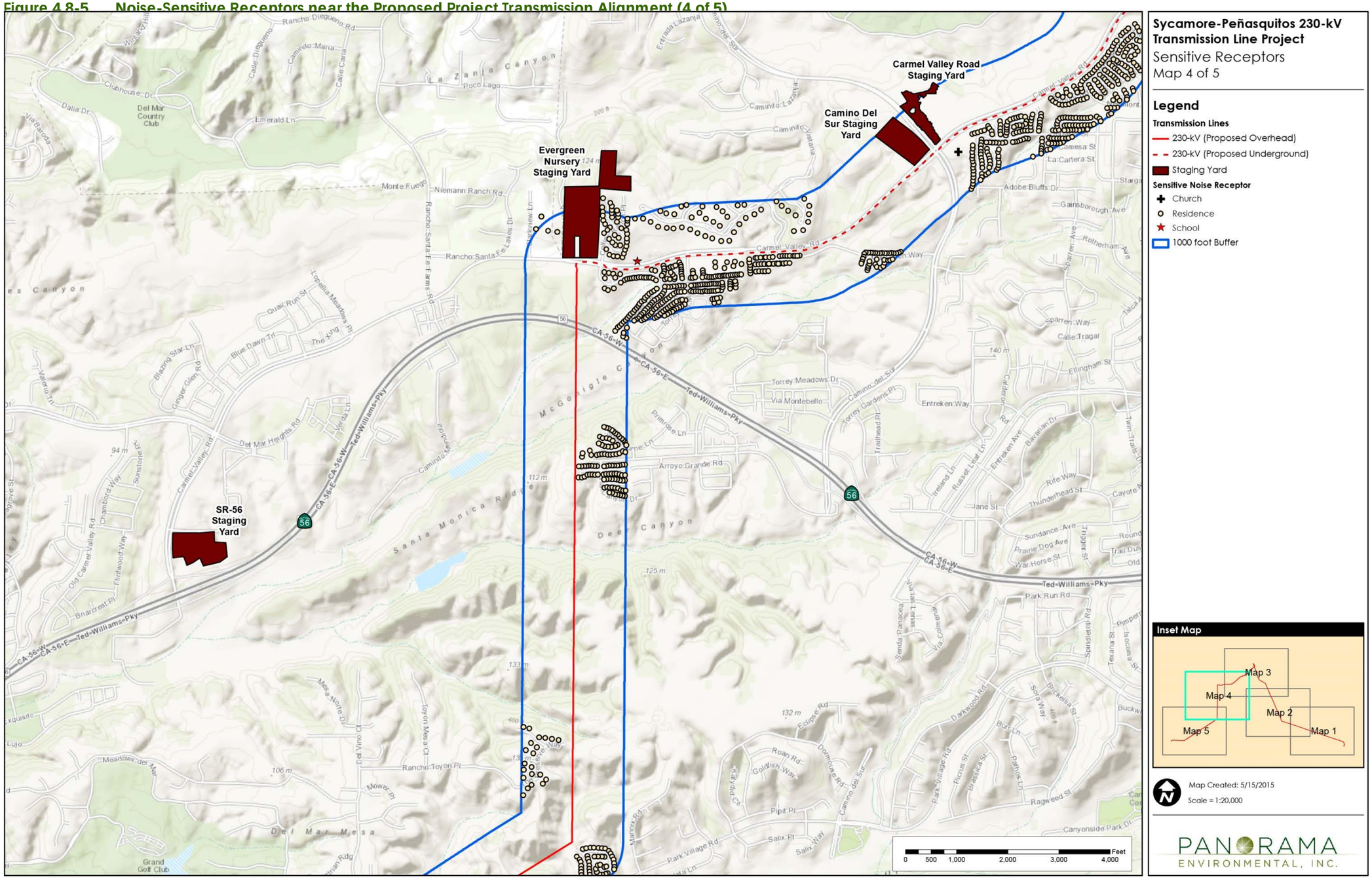

Figure 4.8-6 Noise-Sensitive Receptors near the Proposed Project Transmission Alignment (5 of 5)

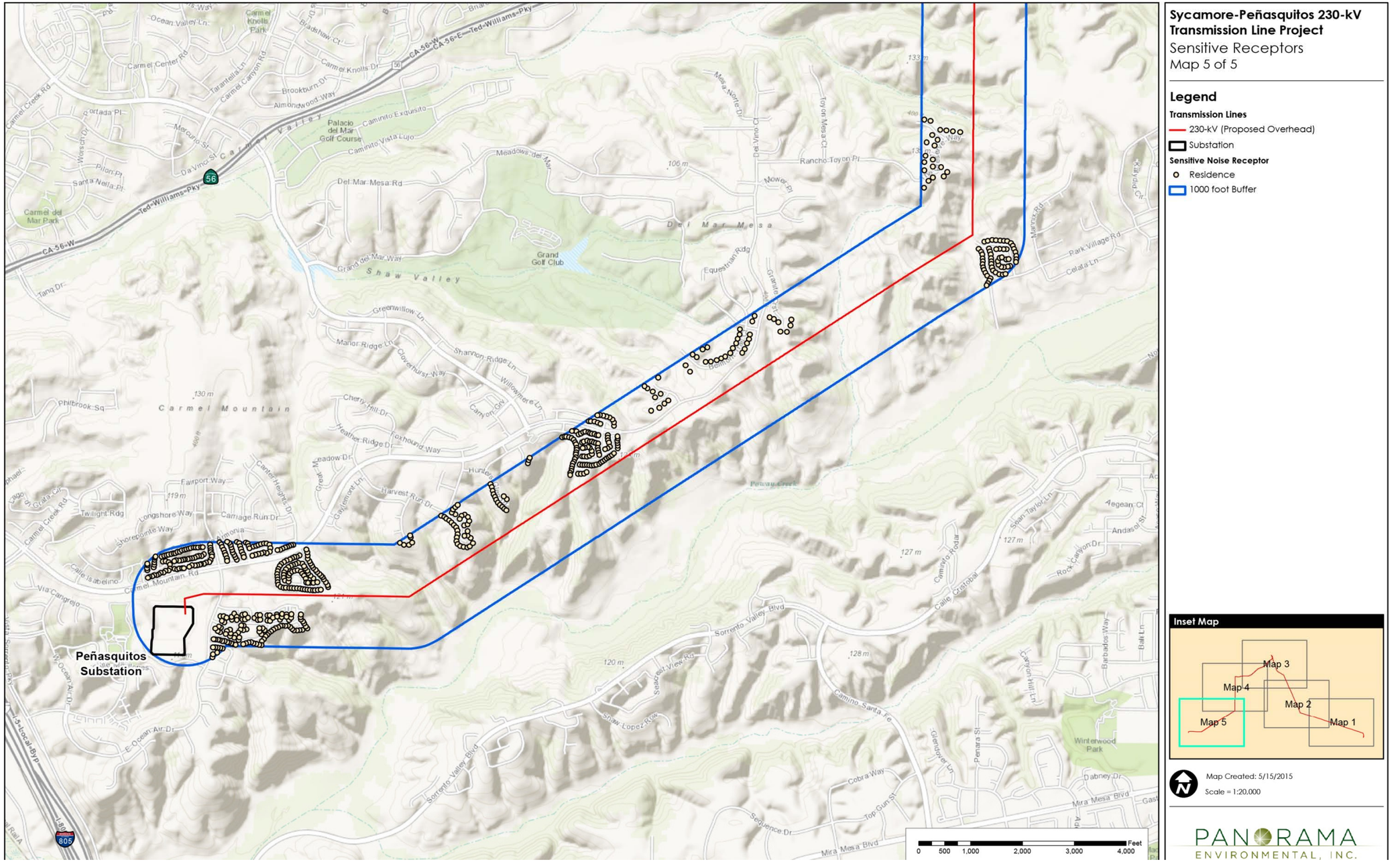

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Table 4.8-2 provides the noise sensitive land uses located within 1,000 feet of the Proposed Project. There are no sensitive receptors within 1,000 feet of the proposed Encina Hub work area modifications.

Table 4.8-2 Noise-Sensitive Receptors within 1,000 Feet of the Proposed Project

Receptor Type[1]	Distance to Nearest Work Area (feet)	Project Feature[2]
Transmission Line Segment A		
Residence	37	Work Area P12
Mount Carmel High School	86	Work Area P34
Mount Carmel Church of the Nazarene	226	Work Area R35
Black Mountain Open Space Park	70.5 (directly under lines)	Transmission line directly overhead
Transmission Line Segment B		
Black Mountain Open Space Park	70.5 (directly under lines)	Transmission line directly overhead
Residence	35	Temporary Underground Work Area
Kids Bay Learning Center	111	Temporary Underground Work Area
Church of Latter-day Saints	33	Temporary Underground Work Area
Transmission Line Segment C[3]		
Residence	106	Work Area P43
Transmission Line Segment D[4]		
Residence	39	Work Area P43
Staging Yards		
Residence	760	Stonebridge Staging Yard
Residence	770	Camino Del Sur Staging Yard
The Church of Jesus Christ of Latter-day Saints	413	Camino Del Sur Staging Yard
Canyon Crest Academy	25[5]	SR-56 Staging Yard
Residence	10	Evergreen Nursery Staging Yard
The Kids Bay Learning Center	685	Evergreen Nursery Staging Yard
Mission—San Luis Rey Phase Transposition		
Residence	610	South Work Area

Notes:

1 There are no sensitive receptors within 1,000 feet of the Encina Hub.

2 Project features shown in Appendix A mapbook.

3 Additional residences may be constructed and occupied near Segment C prior to project completion. There are no schools or churches within 1,000 feet of Segment C.

4 There are no schools or churches within 1,000 feet of Segment D.

5 Distance is to the campus boundary at the baseball field. The distance to the nearest instructional or administration building is over 1,000 feet.

Source: Google Earth 2013

Ambient Noise Levels

Measurements from the October 2013 and November 2014 community noise surveys are shown in Table 4.8-3. The ambient noise levels are summarized below by transmission line segment and work area.

Transmission Line Segment A

Background noise levels vary along Segment A but are consistent with suburban areas. Approximately 5 miles of Segment A (from the Scripps Poway Parkway crossing to the end of Segment A in Black Mountain Open Space Park) are within the MCAS Miramar Overflight Zone and are exposed to noise associated with fixed-wing aircraft flying at less than 3,000 feet above ground level (AGL) and/or helicopters flying at less than 1,500 feet AGL (ALUC 2011).

Transmission Line Segment B

Ambient noise levels along Segment B are consistent with suburban areas and arterial roadways. November 2014 surveys conducted by SDG&E measured average noise levels (L_{eq}) over 20-minute intervals ranging from 64.8 dBA to 68.1 dBA with the dominant source of noise being traffic on nearby roadways (Table 4.8-3). Contributing noise from aircraft overflights, minor insect noise, and corona noise could also be distinguished. The majority of Segment B is within the MCAS Miramar Overflight Zone and is exposed to noise associated with fixed-wing aircraft flying at less than 3,000 feet AGL and/or helicopters flying at less than 1,500 feet AGL (ALUC 2011).

Transmission Line Segment C

SDG&E did not conduct community noise surveys along most of Segment C because residential construction unrelated to the Proposed Project is occurring at significant portions along the alignment, and current noise levels would not be representative of ambient noise levels when the residential construction is completed. Ambient noise levels are expected to be similar to other residential measurements recorded on Segments A and D (Table 4.8-3). Nearly the entire extent of Segment C is within the MCAS Miramar AIA. Most of Segment C is within the Miramar Overflight Zone and is exposed to noise associated with fixed-wing aircraft flying at less than 3,000 feet AGL and/or helicopters flying at less than 1,500 feet AGL. The south end of Segment C is also included in the mapped noise exposure contours where the CNEL is estimated to be 60 dB to 65 dB during maximum mission aircraft activity (ALUC 2011).

Transmission Line Segment D

Traffic is a primary source of noise along Segment D, and other dominant noise sources vary by location and time of day (TRC 2014). Average ambient noise levels (L_{eq} 20-minutes) range from 34.7 dBA at night to 50.6 dBA in the afternoon (Table 4.8-3). Approximately half of Segment D is within the MCAS Miramar Overflight Zone and is exposed to noise associated with fixed-wing aircraft flying at less than 3,000 feet AGL and/or helicopters flying at less than 1,500 feet AGL. Portions of Segment D are also included in the mapped noise exposure contours where the CNEL is estimated to be 60dB to 65 dB during maximum mission aircraft activity (ALUC 2011).

Table 4.8-3 Summary of Ambient Noise Levels near Proposed Project

Survey Location Name	Survey Location Number[1]	Survey Date and Time	Primary Noise Source	A-Weighted Sound Level (L_{eq}; dBA)
Transmission Line Segment A				
Fortino Point	3	10/25/2013 8:11 PM	Traffic	43.5
Candy Rose Way	4	10/25/2013 8:26 PM	Traffic	42.2
Ivy Hill Drive	6	10/25/2013 8:11 PM	Traffic	47.0
Calle de los Ninos	7	10/25/2013 8:42 PM	Traffic	47.2
Paseo Montalban	9	10/25/2013 8:59 PM	Traffic	43.1
Mediatrice Lane	10	10/25/2013 9:16 PM	Traffic	39.6
Lusardi Creek Loop Trail	11	11/17/14 2:26 PM	Traffic	49.0
Transmission Line Segment B				
Carmel Valley Road	12	11/17/14 1:37 PM	Traffic	68.1
Mona Lane	13	11/17/14 1:02 PM	Traffic	64.8
Transmission Line Segment D				
Celome Way	14	10/25/2013 10:55 PM	Traffic	39.6
Duck Pond Lane	15	10/25/2013 11:26 PM	Traffic	40.6
Gallop Crest Court	16	11/11/14 2:46 PM	Traffic, construction noise, and wind	50.6
Sycamore Canyon Park Trail	17	11/11/14 2:23 PM	Traffic and construction noise	41.6
Hunters Glen Drive	18	10/25/2013 11:50 PM	Traffic	34.7
Manor Gate Drive	20	10/26/2013 12:04 AM	Traffic and corona noise	42.2

Notes:

[1] This table includes the short-term community noise survey locations; 24-hour community noise survey location data is not provided in this table. Survey site locations correspond to points on Figure 4.8-1.

L_{eq} = equivalent noise level for the 10-minute survey period

Sources: SDG&E 2014, TRC 2014

Staging Yards
Staging yards are generally located in industrial areas or near busy roadways. Community noise survey measurements were conducted near the Stonebridge and Evergreen Nursery staging yards (Figure 4.8-1). Ambient noise levels are expected to be around 43 dBA near residential land uses and 67 dBA around staging yards near busy roadways.

Encina Hub
Noise survey measurements were not conducted near the Encina Hub. The work areas are in open space near a roadway, similar to work areas along the northern extent of Segment A. Ambient noise levels are expected to be similar to noise levels measured at the Lusardi Creek Loop Trail (49 dBA).

Mission—San Luis Rey Phase Transposition North and South
The Mission—San Luis Rey Phase Transposition areas are located in open space near MCAS Miramar. Noise measurements were not conducted at the phase transposition locations; however, ambient noise conditions are expected to be similar to the open space areas along Segment A (Lusardi Creek Loop Trail).

Corona Noise
Corona noise measurements varied depending on field conditions. At the quietest point in the night, corona noise was measured at 29 dBA (L_{eq} 1-hour) at a vertical distance of 70 feet below the line. The 24-hour L_{eq} measurement under the electrical line was approximately 8 dBA greater than the noise level at the meter located 896 feet away.

4.8.4 Applicable Regulations, Plans, and Standards

4.8.4.1 Federal

Occupational Safety and Health Act of 1970
The Occupational Safety and Health Act of 1970 governs worker exposure to noise levels. Title 29 of CFR Section 1910.95 limits worker exposure to noise levels of 85 dBA or lower over an 8-hour period. Additionally, this regulation also establishes maximum impulse or impact noise (e.g., blasting noise) of 140 dB peak sound pressure level.

Federal Transit Administration
There are no federal regulations regarding vibration that are relevant to the Proposed Project. The Federal Transit Administration (FTA) has established guidelines for construction vibration to avoid harmful effects from excessive groundborne vibration. The damage criteria developed by FTA are in the range of 0.12 to 0.5 PPV for structural damage depending on the fragility of the structure of concern. Table 4.8-4 provides FTA's construction vibration damage criteria for various structural categories. The Proposed Project is not subject to FTA regulations; however, these guidelines serve as a useful tool to evaluate vibration impacts on structures.

Table 4.8-4 Construction Groundborne Vibration Damage Criteria

Building Category	PPV (inches/second)
Reinforced-concrete, steel or timber (no plaster)	0.5 PPV
Engineered concrete and masonry (no plaster)	0.3 PPV
Non-engineered timber and masonry buildings	0.2 PPV
Buildings extremely susceptible to vibration damage	0.12 PPV

Source: FTA 2006

4.8.4.2 State

There are no state regulations regarding vibration that are relevant to the Proposed Project. Caltrans provides guidance for analysis of groundborne vibration. The Proposed Project is not subject to Caltrans regulations; however, these guidelines serve as a useful tool to evaluate vibration impacts on structures and residents. Table 4.8-5 provides the thresholds for evaluating the potential for groundborne vibration to damage structures and describes the reactions of people who are exposed to continuous vibration.

Table 4.8-5 Groundborne Vibration Impact Thresholds

Parameter	Maximum PPV (in/sec)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources[2]
Structural Damage		
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Human Response		
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

[1] Transient sources create a single isolated vibration event, such as blasting or drop balls.

[2] Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2004

California Noise Exposure Regulations
The State of California addresses worker exposure to noise levels through the California Noise Exposure Regulations and Title 8 of the California Code of Regulations (CCR), Section 5095. These regulations limit worker exposure to noise levels of 85 dB or lower over an 8-hour period. The State has not established noise levels for various non-work-related environments.

4.8.4.3 Local

City of San Diego Municipal Code
Noise generating sources within the City of San Diego are regulated under Chapter 5 (Public Safety, Morals and Welfare) of the San Diego Municipal Code. Section 59.5.0404 applies to the construction phase of the Proposed Project. This section prohibits construction equipment operation between the hours of 7 PM of any day and 7 AM of the following day, and limits average noise levels to 75 dBA (12-hour average) during the hours of 7 AM to 7 PM. This section also regulates construction activities on Sundays and holidays. Nighttime construction noise would be allowed upon approval of the City Noise Abatement and Control Administrator.

Under the most restrictive standard of Section 59.5.0401 of this rule, average hourly noise in a residential area is limited to 50 dBA from 7 AM to 7 PM, to 45 dBA from 7 PM to 10 PM, and to 40 dBA from 10 PM to 7 AM. These restrictions would apply to the operation and maintenance of the transmission line.

City of San Diego Multiple Species Conservation Program Subarea Plan
The City of San Diego MSCP Subarea Plan specifies that noise impacts resulting from uses in or adjacent to the Multi-Habitat Planning Area should be minimized, and excessive noise adjacent to breeding areas of sensitive species must be mitigated and curtailed during breeding season. Noise impacts to wildlife are addressed in Section 4.1: Biological Resources.

Rancho Peñasquitos Community Plan
The Rancho Peñasquitos Community Plan specifies that the southern portion of the neighborhood of Ridgewood and the adjacent Los Peñasquitos Canyon Preserve are sensitive areas where wildlife corridors must be protected from excessive noise.

City of Poway Municipal Code
Noise generating sources in the City of Poway are regulated under the Poway Municipal Code, Chapter 8.08 (Noise Abatement and Control). Under the most restrictive standard of Section 8.08.040 of this rule, average hourly noise in residential areas is limited to 40 dBA from 10 PM to 7 AM and 50 dBA from 7 AM to 10 PM. In high density residential zones, the noise limit is 55 dBA from 7 AM to 7 PM, 50 dBA from 7 PM to 10 PM, and 45 dBA from 10 PM to 7 AM. These restrictions would apply to the operation and maintenance of the line.

Poway Municipal Code Section 8.08.100 prohibits construction equipment operation between the hours of 7 PM of any day and 7 AM of the following day, and limits average noise levels to 75 dBA (8-hour) from 7AM to 7 PM. This section also restricts construction activities on

Sundays, holidays, and certain Mondays. Equipment noise levels must comply with the limits for various durations as shown in Table 4.8-6.

Section 8.08.110 prohibits the handling or transportation of any container or construction material in any public place that creates a disturbing, excessive, or offensive noise.

Table 4.8-6 Poway Noise Requirements for Construction Equipment

Total Duration in 24 Hours	Limit (dBA)
Up to 15 minutes	90
Up to 30 minutes	87
Up to 1 hour	84
Up to 2 hours	81
Up to 4 hours	78
Up to 8 hours	75

Source: City of Poway 1981

City of Carlsbad Municipal Code

Section 8.48 of the City of Carlsbad Municipal Code regulates the hours in which construction noise is permitted. Standard construction hours within the City of Carlsbad are from 7 AM to 6 PM weekdays and 8 AM to 6 PM on Saturdays. Construction is not permitted on Sundays or federal holidays. Section 4.48 also requires construction hours to be posted on signs at the entrance to a jobsite. This ordinance would apply to construction at the Encina Hub.

City of Carlsbad Noise Guidelines Manual

The Noise Guidelines Manual (City of Carlsbad 1995) is intended to address community noise issues related to land use. The Manual summarizes Carlsbad's Noise Element policies, identifies residential noise standards (60 dBA CNEL for exterior noise levels and 45 dBA CNEL for interior noise levels), and the lists the City of Carlsbad's preferred methods for mitigation.

4.8.5 Applicant Proposed Measures

SDG&E has proposed measures to reduce environmental impacts. The significance of the impact is first considered prior to application of the APMs and a significance determination is made. The implementation of APMs is then considered as part of the project when determining whether impacts would be significant and thus would require mitigation. These APMs would be incorporated as part of any CPUC project approval, and SDG&E would be required to adhere to the APMs as well as any identified mitigation measures. The APMs are included in the MMRP for the Proposed Project (refer to Chapter 9 of this EIR), and the implementation of the measures would be monitored and documented in the same manner as mitigation measures. The APMs that are applicable to the noise analysis are provided in Table 4.8-7.

Table 4.8-7 Applicant Proposed Measures for Noise Impacts

APM Number	Requirements
APM NOISE-1: Generator Usage	Generator use will be limited to less than 50 horsepower (50 HP) at all staging yards, unless larger generators are appropriately permitted. Any generators used at staging yard will be located away from noise sensitive areas, and positioned on the property to comply with local noise ordinances.
APM NOISE-2: Use of Mufflers	Functioning mufflers will be maintained on all equipment. (Superseded by Mitigation Measure Noise-2.)
APM NOISE-3: Resident Notifications	Residents within 50 feet of proposed construction activities will be notified of the start of construction at least 1 week prior to construction activity in the area.
APM NOISE-4: Helicopter Use	Helicopter usage for the Proposed Project would be limited to those hours deemed acceptable for construction activities by the City of San Diego Noise Code (7 a.m. to 7 p.m.) and the City of Poway Noise Code (7 a.m. to 5 p.m.). Helicopter usage at any one location would be very brief as the lines are being strung or during pole removal and installation activities.
APM NOISE-5: City Noise Variance and Blasting Guidelines	For the few locations where the Proposed Project would exceed the noise ordinances, SDG&E would meet and confer with the appropriate city to discuss temporarily deviating from the requirements of the Noise Code, as described in the construction noise variance process. Additionally, in the unlikely event that rock blasting is used during construction, a noise and vibration calculation will be prepared and submitted to SDG&E Environmental Programs and Transmission Engineering and Design for review before blasting at each site. The construction contractor will ensure compliance with all relevant local, state, and federal regulations relating to blasting activities, as well as SDG&E's blasting guidelines.

4.8.6 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 *et seq.*) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Proposed Project would have significant noise impacts if it would:

a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels.
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
f. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

4.8.7 Approach to Impact Analysis

This impact analysis considers whether implementation of the Proposed Project or alternatives would result in significant noise impacts. The analysis focuses on reasonably foreseeable effects of the Proposed Project and alternatives as compared with baseline conditions. The analysis uses significance criteria based on the CEQA Appendix G Guidelines. The potential direct and indirect effects of the Proposed Project and alternatives are addressed; cumulative effects are addressed in Chapter 5: Cumulative Impacts. Effects that would result from operation and maintenance of the Proposed Project and alternatives are also addressed. Applicable APMs are identified and mitigation is defined to avoid or reduce significant noise impacts.

Noise and vibration levels associated with construction and operation of the Proposed Project and alternatives are analyzed for impacts to noise sensitive receptors, such as residences, educational facilities, places of worship, hospitals, convalescent homes, and recreation areas. The majority of the Proposed Project area is in the City of San Diego. A short portion of transmission line Segment A is located within the City of Poway and the Encina Hub is located in the City of Carlsbad. Project noise levels are compared to pertinent city noise standards.

4.8.7.1 Noise Impact Analysis

The following resources were reviewed to evaluate the noise impacts from construction, operation, and maintenance of the Proposed Project:

- Relevant City of San Diego, City of Poway, and City of Carlsbad noise standards and policies
- The MCAS Miramar Land Use Compatibility Plan
- The existing noise environment and measured noise levels
- Land uses and distance to sensitive receptors
- Modeled noise levels from the Proposed Project

Modeled Noise Levels

Construction and post-construction noise levels for the Proposed Project were estimated by evaluating the noise generated by each piece of equipment for construction, operation, and maintenance activities. This analysis considers construction noise impacts as compared to local applicable standards, as well as intermittent increases in noise. Permanent noise increases during the operation phase of the Proposed Project were also considered. The predicted hourly noise level for each Proposed Project element accounts for the combined use of all required construction equipment. Construction, operation, and maintenance noise levels were calculated at the nearest sensitive receptor and compared to relevant City of San Diego, City of Poway, or City of Carlsbad noise standards and policies, where appropriate. Calculated noise levels at the nearest sensitive receptor that exceed noise levels defined by local ordinances or that exceed temporary or permanent noise increases of 10 dBA or 5 dBA, respectively, are considered a significant impact.

Corona noise would be generated from the proposed conductor on a continual basis. Corona noise levels during operation and maintenance are compared with applicable City of San Diego and City of Poway thresholds for exterior noise levels. Corona noise measurements collected

during the community noise surveys indicated an average 4 dBA decrease for each doubling of distance. For impact analysis in this section, a more conservative 3 dBA decrease for each doubling of distance is used for corona noise.

Three (3) dBA is the minimum change in environmental noise that is perceptible and recognizable by the human ear. An increase in day-night environmental noise levels of more than 5 dBA (L_{dn}) at any sensitive receptor is considered to be a substantial increase.

4.8.7.2 Construction Groundborne Vibration Generation

There are no City of San Diego, City of Poway, or City of Carlsbad guidelines for construction vibration; therefore, Caltrans guidelines were used to evaluate vibration impacts on residents and structures. For construction, which is short term, the impact of concern is annoyance of residents and damage to structures.

Caltrans sets vibration thresholds for structural damage depending on the fragility of the structure of concern. Under the Caltrans's guidelines for continuous vibration sources, a vibration limit of 0.5 inches per second (in/sec) PPV is recommended for buildings that are structurally sound and designed to modern engineering standards and a vibration limit of 0.3 in/sec PPV is set for older residential buildings. All buildings in the project area are assumed to be structurally sound (see Section 4.3: Cultural Resources), but the residential buildings in the area may or may not have been designed to modern engineering standards. Thus, the 0.3 in/sec PPV criteria would apply for continuous vibration sources. The Caltrans vibration limit of 0.5 in/sec PPV would apply for transient vibration sources, such as vibration from construction activities.

4.8.8 Proposed Project Impacts and Mitigation Measures

Noise impacts from the Proposed Project include short-term noise impacts from construction and long-term impacts from operation of the project. The primary source of short-term construction noise is construction equipment including diesel-powered equipment and helicopters. Long-term noise that could be generated during operation of the project includes corona noise that could be discharged from the proposed transmission line and ongoing transmission line maintenance operations.

Table 4.8-8 provides a summary of the significance of noise impacts prior to application of APMs, after application of APMs and before implementation of mitigation measures, and after the implementation of mitigation measures.

Table 4.8-8 Summary of Proposed Project Impacts to Noise

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Construction	Significant	Significant APM NOISE-1 APM NOISE-3 APM NOISE-4 APM NOISE-5	Significant and unavoidable MM Noise-1 MM Noise-2 MM Noise-3 MM Noise-4 MM Noise-5
	Operation and Maintenance	Less than significant	---	---
Impact Noise-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Construction	Significant	Significant APM NOISE-5	Less than significant MM Hazards-1
	Operation and Maintenance	Less than significant	---	---
Impact Noise-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels.	Construction	No impact	---	---
	Operation and Maintenance	Significant	Significant	Significant and unavoidable MM Noise-4 MM Noise-5
Impact Noise-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction.	Construction	Significant	Significant APM NOISE-2 APM NOISE-4	Significant and unavoidable MM Noise-1 MM Noise-2 MM Noise-3 MM Noise-6 MM Hazards-1
	Operation and Maintenance	Less than significant	---	---
Impact Noise-5: Located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels.	Construction	Less than significant	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-6: Located within the vicinity of a private airstrip and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---

Impact Noise-1: Would the Proposed Project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? (*Significant and unavoidable*)

Pursuant to CPUC GO No. 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project and local land use regulations would not apply to the Proposed Project. However, the general plan policies and noise ordinance standards for each city are used as a basis for evaluation of noise levels because the CPUC does not have numeric thresholds for noise. Table 4.8-9 shows the local noise policies in the Proposed Project area.

Construction

Summary of Construction Noise Levels

Proposed Project construction would require heavy equipment, including trucks and helicopters, to transport materials, clear vegetation, grade new work areas, remove and install transmission line poles, construct underground duct banks and vaults, and string conductor for the new transmission line. Table 4.8-10 lists the maximum noise levels for equipment used in transmission line construction at 50 feet from the noise source.

Proposed Project construction would last for approximately 12 months with concurrent construction of multiple Proposed Project components throughout the construction period. Table 2.3-7 in Chapter 2: Project Description presents the equipment required for each stage of construction. Table 4.8-11 provides the typical cumulative noise levels for each stage of construction and identifies the distance from construction at which noise impacts would exceed 75 dBA (L_{eq} 8-hour). The typical cumulative noise levels account for: (1) the acoustical usage factor[1] of the individual equipment, and (2) the amount of time each piece of equipment will be operating during an 8-hour period.

Construction would require the use of helicopters for conductor stringing and transport of materials, equipment, and personnel. Table 4.8-12 shows the maximum noise generated by helicopters at the nearest receptors to tower work locations and staging yards. Noise levels were based on helicopter use parameters described in Section 2.3.8 in Chapter 2: Project Description.

A helicopter would typically be used for 6 to 8 hours each day. Helicopter refueling would take place at staging yards. With the exception of the Evergreen Nursery staging yard, all staging yards could be used for refueling. The Proposed Project could potentially use more than one helicopter at a time. At a minimum, one helicopter would be used for approximately 7 to 10 months during the construction period and two helicopters may be operated simultaneously for up to 4 months. Helicopters are anticipated to be light- or medium-duty; however, there is a low potential for heavy-duty helicopter usage.

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[1] The acoustical usage factor is the percent of the hour that a piece of equipment is operating at high power or in the vicinity of the receptor.

Table 4.8-9 General Plan Policies and Noise Standards for Cities in the Project Area

Project Phase	City Noise Standards		
	City of San Diego	City of Poway	City of Carlsbad
Construction	Outdoor noise: 75 dBA weekdays (7 AM to 7 PM)	Outdoor noise: 75 dBA weekdays (7 AM to 5 PM) 1-hour limit of 85 dBA 15-minute limit of 90 dBA	Outdoor noise: 60 dBA weekdays (7 AM to 6 PM) and Saturdays (8 AM to 6 PM)
Operation and Maintenance	Outdoor noise: 50 dBA Daytime (7 AM to 7 PM) 45 dBA Evening (7 PM to 10 PM) 40 dBA Nighttime (10 PM to 7 AM)	Outdoor noise: 50 dBA Daytime (7 AM to 10 PM) 40 dBA Nighttime (10 PM to 7 AM)	Outdoor noise: 60 dBA weekdays (7 AM to 6 PM) and Saturdays (8 AM to 6 PM)

Source: City of San Diego 1976, City of Poway 1981, City of Carlsbad 1995

Table 4.8-10 Maximum Noise Levels Generated by Construction Equipment

Equipment	Acoustical Usage Factor (%)[1]	L_{Max} at 50 Feet (dBA)
Aerial Bucket Truck	20	75
Backhoe	40	80
Blasting	1	94
Bulldozer	40	82
Cement Truck	40	79
Concrete Saw	20	90
Crane	16	81
Drill Rig/Truck-mounted Augur	20	84
Excavator	40	85
Grader	40	85
Heavy Lift Helicopter[2]	16	102
Jackhammer	20	85
Light/Medium Helicopter at Takeoff	16	90
Mower	40	88
Paver	50	77
Portable Generator	50	81
Rock Drill/Rock Drilling Equipment	20	81
Boring Jack Power Unit	50	83

Equipment	Acoustical Usage Factor (%)[1]	L_{Max} at 50 Feet (dBA)
Skidsteer	40	75
Truck (Dump Truck, Flatbed Truck)	40	84
Vacuum Truck	40	85
Water Truck	20	80
Wire Pulling Machine (Pulling Rig)	40	80

Note:

1 Acoustical usage factor is the proportion of time the equipment is operating at full power during construction hours.

Source: U.S. DOT 2008

Table 4.8-11 Typical Cumulative Noise Levels by Stage

Activity	Adjusted L_{eq}[1] Noise Level at 50 Feet[2] (dBA)	Adjusted L_{eq} Noise Level at Nearest Receptor[3] (dBA)	Distance for Noise Attenuation to 75 dBA L_{eq} (feet)
Transmission Line Segments A, C, and D			
Roads and Access	80	83	90
Structure Area Preparation	82	85	110
Pole Removal	76	79	57
Pole Foundation Excavation	81	83	95
Pole Installation	77	80	62
Wire Stringing	73	75	38
Transmission Line Segment B			
Underground Vaults/Line	80	83	88
Temporary Work Areas			
Staging and Construction Yards	81	95	101

Notes:

1 L_{eq} is the equivalent noise level averaged over an 8-hour period.

2 Noise levels include non-helicopter construction equipment for each work activity. Helicopter noise is assessed separately.

3 The nearest sensitive receptor for overhead transmission line construction is a residence located 37 feet from work area P12. The nearest sensitive receptor for underground line construction is a residence located 35 feet from the underground work area.

Source: U.S. DOT 2008

Table 4.8-12 Maximum Possible Helicopter Noise Levels

Activity	Max Noise at Tower Work Location (dBA) (Distance 37 feet)[1]	Max Noise at Staging Yard (dBA) (Distance 25 feet)
Light or Medium-lift Helicopter Use	92	96
Heavy-lift Helicopter Use	116	108

Note:

[1] 37 feet is the horizontal distance from the work location to the nearest receptor.

Source: SDG&E 2015, U.S. DOT 2008

Summary of Noise Levels and Standards

Table 4.8-13 provides a summary of the maximum predicted construction noise levels by Proposed Project component and the applicable noise standard for the area.

Table 4.8-13 Summary of Construction Noise Levels and Standards by Proposed Project Work Area

Project Elements	Distance to Nearest Sensitive Receptor (feet)	Maximum Predicted Noise Level	Activity Duration	Noise Standard[1]	Meets Standard?
Transmission Line Segment A	37	85 dBA (L_{eq} 8-hour) for pole foundation construction and installation	Up to 10 hours	City of San Diego City of Poway	No
Transmission Line Segment C	106[2]	89 dBA (L_{eq} 1-hour) for heavy-duty helicopters	Up to 10 minutes at a time in each location	City of San Diego City of Poway	Yes[3]
Transmission Line Segment D	37	97 dBA (L_{eq} 1-hour) for blasting	Fraction of a second	City of San Diego City of Poway	Yes[3]
Underground Transmission Line Segment B	35	94 dBA (L_{eq} 1-hour) for underground construction	Up to 10 hours	City of San Diego	No
Staging Yards	25	108 dBA (L_{eq} 30-seconds) for heavy-duty helicopters	Periodically in 10-minute intervals for material or worker transport; up to 8 hours per day	City of San Diego City of Poway	No
Encina Hub	None within 1,000 feet	73 dBA (L_{eq} 8-hour) for wire stringing--	Up to 10 hours	City of Carlsbad	Yes

Project Elements	Distance to Nearest Sensitive Receptor (feet)	Maximum Predicted Noise Level	Activity Duration	Noise Standard[1]	Meets Standard?
Mission—San Luis Rey Phase Transposition	610	63 dBA (L_{eq} 12-hour)for phase transposition	Up to 10 hours	City of San Diego	Yes

Notes:

1 Refer to Table 4.8-9 for local noise standards.

2 Distance of 106 feet considers the horizontal distance from tower work site to the nearest receptor (37 feet), as well as the predicted minimum vertical height (100 feet) of a helicopter at a tower location.

3 Activities would temporarily exceed 75 dBA; however, the activity would be of such short duration that it would not exceed the noise standard, which is measured as an average over a 15-minute, 1-hour, and 8-hour period in the City of Poway, and a 12-hour period in the City of San Diego.

Source: U.S. DOT 2008, City of San Diego 1976, City of Poway 1981

Transmission Line Segments A, C, and D

Noise Levels. Construction of the overhead transmission line would cause a temporary increase in noise levels in the Proposed Project vicinity. Construction of Segment A, C, and D is expected to take approximately 12 months to complete. The following overhead transmission line construction activities would cause an increase in noise levels near the Proposed Project area:

- Preparing access roads (e.g., vegetation removal and smoothing)
- Grading of new work areas
- Clearing vegetation
- Constructing retaining walls at six locations
- Drilling pole foundation holes
- Constructing foundations
- Erecting new poles
- Installing and removing guard structures
- Installing conductors (via helicopter)
- Installing marker balls
- Removing existing poles

Concurrent construction activity along Segments A, C, and D would be necessary with multiple crews working at separate locations. Work at any single pole location would last 1 week or less. Daily work hours typically would be up to 12 hours within the City of San Diego and 10 hours within the Cities of Poway and Carlsbad.

Operation of multiple pieces of ground-based construction equipment at each structure location could result in a maximum noise level of up to 85 dBA at the nearest sensitive receptor, which is a residence 37 feet from the nearest tower work area. Overhead transmission line construction within Segments A, C, and D would be subject to the City of San Diego construction noise limits of 75 dBA weekdays from 7 AM to 7 PM and a portion of the southern extent of Segment A would be subject to the City of Poway construction noise limits of 75 dBA weekdays from 7 AM

to 5 PM. Noise levels at sensitive receptors within 110 feet of overhead construction areas, which include residences and schools, would exceed the City of San Diego and City of Poway noise standards by 10 dBA. This would be a significant impact.

SDG&E would implement APM NOISE-3 as part of the Proposed Project. APM NOISE-3 requires that SDG&E notify residents within 50 feet of construction. Noise levels decrease at a rate of 6 dBA per doubling of distance between the noise source and receptor. Noise levels would exceed 75 dBA for a distance of up to 110 feet from the construction area, depending on the construction phase. Impacts would remain significant after implementation of this APM.

Mitigation Measures Noise-1 and Noise-2 would reduce impacts to sensitive receptors. Mitigation Measure Noise-1 requires SDG&E to notify all residents and sensitive receptors within 300 feet of work areas and respond to public noise complaints in a timely and effective manner. Mitigation Measure Noise-2 requires SDG&E to implement noise best management practices, including noise barriers, to reduce construction noise at work areas within 200 feet of residences. Barriers that are correctly placed and well-designed reduce construction equipment noise levels by up to 8 dBA. Installation of noise barriers as required by Mitigation Measure Noise-2 would reduce construction noise levels to a maximum of 77 dBA. Even with implementation of the above APMs and mitigation measures, noise levels from construction of the proposed 230-kV transmission line would exceed noise standards by at least 2 dBA. Therefore, the impact from construction noise levels would be significant and unavoidable.

Helicopter Noise. Helicopter activities associated with installing the overhead conductor cable for the new 230-kV transmission line would generate noise levels of up to 89 dBA at the location of the nearest sensitive residential receptor. Helicopter work could potentially occur at any point along the line and could occur at pole locations that are as close as 37 feet to the closest residence. The helicopter flight path would generally be limited to the existing ROW except for ingress and egress from the helicopter landing/staging yards and in general, helicopters would hover at work areas for between five and 10 minutes per trip, with up to 13 trips per pole location. As stated in APM NOISE-4, SDG&E would limit helicopter usage to the construction hours approved by the City of San Diego (7 AM to 7 PM) and the City of Poway (7 AM to 5 PM). Although noise levels would temporarily exceed 75 dBA, helicopter noise would not violate the City of San Diego's 12-hour noise standard because helicopter activities would last for a maximum of 10 minutes, for up to 13 trips, in any one location along the overhead alignment. The City of Poway municipal code allows for 15 minutes of noise at 90 dBA, 1 hour of noise at 84 dBA, and a L_{eq} (8-hour) limit of 75 dBA. One helicopter trip with a hover time of 10 minutes would exceed the 15-minute noise standard. There is no feasible mitigation that would reduce the noise from helicopters hovering nearby; therefore, the impact would be significant and unavoidable.

Blasting Noise. Blasting may be required to remove hard rock at pole locations along Segments A, C, and D. Blasting would cause intense peak noise levels (up to 120 dBA at the blast location and 97 dBA at the nearest receptor, a residence 37 feet away). Blasting would be very brief in duration (milliseconds), and the noise would dissipate quickly. Blasting noise would not violate

the City of San Diego noise limit of 75 dBA, which is based on an average noise level over 12 hours (or 90 dBA for up to 15 minutes in the City of Poway). Noise levels would not exceed local standards; therefore, impacts from blasting would be less than significant. No mitigation is required.

Construction Hours. Night or weekend construction may be required for some activities such as removal and installation of conductor across Interstate 15 and State Route 56, which typically occurs on Sunday mornings due to Caltrans requirements for freeway crossings. Other potential construction activities that could occur outside of normal construction hours include:

- Arrival and departure of workers at staging yards
- Staging yard operations including maintenance of equipment and material deliveries
- Security operations in yards and at locations where equipment/material is stored on the ROW overnight

Night and weekend construction is not permitted in the City of San Diego or City of Poway and would violate noise standards. Work outside of City-approved construction hours would be a significant impact. SDG&E would implement APM NOISE-5 as part of the Proposed Project. APM NOISE-5 states that SDG&E would meet and confer with the appropriate City to discuss temporarily deviating from the requirements of the noise standards. Coordination with local jurisdictions would not reduce noise impacts of night construction. Mitigation Measure Noise-2 would reduce noise impacts to less than significant by limiting the type of construction activities that are permitted outside normal construction hours, by requiring that construction activities not produce noise greater than 40 dBA at the nearest receptor (school, residence, hospital, or place of worship, and by requiring install of temporary sound walls or acoustic blankets to shield adjacent residences from stationary equipment where residences are located within 200 feet of the equipment. Nighttime and weekend noise impacts would be less than significant with mitigation.

Transmission Line Segment B

Construction of the underground transmission line on Segment B would take up to 11 months. Underground transmission line construction includes the following activities:

- Trenching and installing duct banks
- Installing vaults
- Cable pulling
- Splicing
- Clean-up/road restoration

Construction equipment required for underground construction includes: backhoes, concrete saws, cranes, excavators, jackhammers, pavers, trucks, vacuum trucks, and wire pulling machines. Maximum noise levels at a distance of 50 feet are provided in Table 4.8-10. The equipment would not generally be operated continuously because each piece of equipment has

a specific use and the equipment would not be used continuously throughout construction. The usage factor for each piece of equipment is also provided in Table 4.8-10.

Multiple pieces of equipment will be used concurrently during underground construction. Cumulative noise levels from a concrete saw, backhoe, and dump truck are expected to be 81 dBA at a distance of 50 feet when adjusted for a 12-hour time period. Construction would generally occur weekdays between the hours of 7 AM and 7 PM within the City of San Diego and between 7 AM and 5 PM in the City of Poway, consistent with their respective noise ordinances. The nearest sensitive receptor is a residence located 35 feet from the temporary underground work area (see Figures 4.8-4 and 4.8-5 for proximity of sensitive receptors to Proposed Project Segment B). Sensitive receptors within 134 feet of the underground work area would experience noise levels in excess of 75 dBA. Noise levels would violate City of San Diego noise standard of 75 dBA and would be a significant impact. Mitigation Measures Noise-1 and Noise-2 would reduce impacts to sensitive receptors by requiring SDG&E to notify all residents and sensitive receptors within 300 feet of work areas and to implement noise best management practices, including reduced vehicle idling time to reduce construction noise at work areas. Even with reduced idle times, noise levels would violate City of San Diego noise standards. Impacts would remain significant and unavoidable.

Staging Yards

Activities at staging yards include staging, storing, and assembling equipment; refueling vehicles, helicopters, and construction equipment; construction worker tailboard meetings; and helicopter takeoff and landing. Vehicle parking and portable sanitation facilities would also be available to construction workers at staging yards. Portable generators would be used frequently at staging yards and could produce noise of 94 dBA at 10 feet, the distance to the nearest receptor (a residence) from the Evergreen Nursery staging yard. The noise level from generators would exceed the noise standard of 75 dBA and a significant impact would occur at the nearest receptor (see Figures 4.8-2 and 4.8-6 for proximity of sensitive receptors to staging yards).

SDG&E would implement APM NOISE-1 as part of the Proposed Project. APM NOISE-1 limits the horsepower (HP) of generators at staging yards to 50 HP unless larger generators are appropriately permitted, and requires that generators are located away from noise-sensitive areas and positioned on the property to comply with local noise ordinances. Implementation of APM NOISE-1 would not reduce impacts to less than significant because permitting and compliance with local noise ordinances could be obtained through local jurisdiction approval of a variance which would not necessarily result in a reduction of noise adjacent to sensitive receptors. Mitigation Measure Noise-2 includes the installation of temporary sound walls or acoustic blankets to shield adjacent residences from stationary equipment where residences are located within 200 feet of the equipment. Noise impacts from generators at staging yards would be less than significant with mitigation.

Helicopter takeoff, landing, refueling, and maintenance could be conducted at all staging yards except Evergreen Nursery. The nearest sensitive receptor to helicopter fly yards is Canyon Crest

Academy located 25 feet from the SR-56 staging area. Maximum noise from helicopter use at the staging yards would be as high as 108 dBA (L_{eq} 30 seconds) at this sensitive receptor. A noise level of 108 dBA (L_{eq} 30 seconds) corresponds to 90 dBA (L_{eq} 12-hour) and would exceed local noise standards of 75 dBA. All sensitive receptors within 289 feet of a helicopter fly yard would experience noise over 75 dBA. This would be a significant impact.

Mitigation Measure Noise-3 would reduce noise from helicopters by requiring helicopter takeoff and landing areas to be located a minimum of 300 feet from sensitive receptors. A distance of 300 feet reduces maximum noise levels at sensitive receptors to 87 dBA during takeoff and landing. In addition, helicopter noise levels at 300 feet would not violate noise standards when averaged over a 12-hour period (69 dBA). Noise impacts would be less than significant with mitigation.

Encina Hub Modifications and Mission—San Luis Rey Phase Transposition

Construction at the Encina Hub and Mission—San Luis Rey 230-kV phase transposition would involve modifications to the existing system facilities to enable connection of the new 230-kV transmission line. Construction activities and noise impacts at each location would be very similar to wire stringing activities that would occur at stringing sites for Segments A, C, and D. Maximum noise levels at the nearest receptor (610 feet from the Mission—San Luis Rey southern work area) would be approximately 63 dBA and less than significant. The approximately 1 week of construction activity required to perform the system upgrades at each location would not exceed the City of Carlsbad (for the Encina Hub) or the City of San Diego construction noise standards at any noise-sensitive receptor locations. Local construction noise standards would not be exceeded and impacts would be less than significant. No mitigation is required.

Operation and Maintenance

Transmission Line Segments A, C, and D

Project operation and maintenance activities include annual inspections of the transmission line and maintenance of the facilities on an as-needed basis. Annual inspections and as-needed maintenance of the new transmission line would involve similar equipment and would be similar in duration and frequency to the maintenance activities that are currently performed for the existing power and transmission lines in the ROW. Maintenance of the overhead transmission line would not increase existing noise levels; therefore, there would be no impact.

Corona noise would be generated throughout the operational phase of the new overhead transmission line on Segments A, C, and D. Operation of the new power line would produce cumulative corona noise for the transmission line corridor that reaches 29 dBA in dry conditions where one 230-kV line is present and 32 dBA where two 230-kV lines are present. Wet weather could increase corona noise by up to 20 dBA to 49 and 52 dBA, respectively. Corona noise greater than 40 dBA would exceed the City of San Diego and City of Poway exterior nighttime noise limits of 40 dBA, which would be a significant impact.

There are limited options for mitigating corona noise, none of which would effectively mitigate this significant impact. One option would consist of increasing the size of the electrical conductor at each tower structure. This method, however, would require much larger transmission structures to support the weight of the larger conductors, which would cause a greater visual effect. Mitigation Measure Noise-4 requires the installation of corona rings at the conductors. Corona rings "smooth out" the connections between the insulator, the fittings, and the transmission line and minimize the loss of electricity—one source of corona noise. Corona rings would reduce noise at the transmission structures but would not reduce noise along the line between structures. Mitigation Measure Noise-5 requires SDG&E to respond to and investigate third-party corona noise complaints and to implement feasible and appropriate repairs such as repair of damaged hardware or conductors. Mitigation Measures Noise-4 and Noise-5 would not fully mitigate the impact of corona noise to sensitive receptors near the transmission line.

Furthermore, the measures to minimize corona noise at the transmission structures would not be completely effective, as they would not noticeably decrease corona noise for receptors near the Proposed Project alignment because existing noise conditions presently exceed the 40 dBA nighttime noise standard (see Table 4.8-3). Noise surveys conducted during October 2013 measured nighttime ambient noise levels as high as 42 dBA on Segment D. The addition of the proposed transmission line would increase ambient noise levels by approximately 3 dBA. The impact would be significant because existing conditions exceed noise standards. Therefore, the impact of increased corona noise would be significant and unavoidable.

Transmission Line

Segment B

Post-construction noise would not be emitted from the underground transmission line on Segment B. Maintenance of the underground transmission line would require access to ten splice vaults that would only occur approximately once a year. The inspections would involve a vehicle traveling on Carmel Valley Road and a worker inspecting the underground vaults on Carmel Valley Road. The inspection would not generate noise above existing baseline levels from street traffic. Therefore, noise levels would not exceed baseline conditions and no impacts due to operation or maintenance would occur.

Other Project Areas

The Proposed Project would not introduce any noise-producing equipment into the Sycamore Canyon or Peñasquitos Substations. Inspection and maintenance activity levels at these substations would not change as a result of the Proposed Project and noise levels would therefore not change at the substation. There would be no change in noise levels at Encina Hub or Mission–San Luis Rey phase transposition work areas because the Proposed Project involves relocation of existing conductors and would not introduce any new noise-producing infrastructure or change the frequency of inspection or maintenance of these existing facilities. Therefore, there would be no increase in noise levels and no impact would occur.

Mitigation Measures: Noise-1, Noise-2, Noise-3, Noise-4, and Noise-5

Mitigation Measure Noise-1: Resident Notification and Complaints. SDG&E shall provide notice by mail at least 1 week prior to construction activities to all sensitive receptors and residences within 500 feet of construction sites, staging yards, and access roads, and within 1,000 feet of helicopter fly yards and flight paths. SDG&E shall also post notices in public areas, including recreational use areas, within 300 feet of the project alignment and construction work areas. The announcement shall state specifically where and when construction will occur in the area. For areas that would be exposed to helicopter noise, the announcement shall provide specific details on the schedule of the dates, times, and duration of helicopter activities. Notices shall provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction.

SDG&E shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring receptors, including residents, about noise construction disturbance. SDG&E shall also establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. Procedures for reaching the public liaison officer via telephone or in person shall be included in the above notices and also posted conspicuously at the construction site(s). SDG&E shall address all complaints within 1 week of when the complaint is filed. SDG&E shall provide monthly reports with records of complaints and responses to the CPUC. These reports shall be provided to CPUC within 15 days of the end of the month.

Mitigation Measure Noise-2: Noise-suppression Techniques (supersedes APM NOISE-2). SDG&E shall implement the following noise-suppression techniques to avoid possible violations of local rules, standards, and ordinances from construction noise:

- Night and weekend construction activities shall be limited to activities that will not produce noise greater than 40 dBA at the nearest receptor (school, residence, hospital, or place of worship). Construction activities permitted to occur during nights and weekends include:
  - Arrival and departure of workers at staging yards
  - Construction management tailboard meetings
  - Staging yard operations including maintenance of equipment and material deliveries
  - Security operations in yards and at locations where equipment/material is stored on the ROW overnight
- SDG&E shall apply for and obtain variances from the City of San Diego and the City of Poway for construction activities that must occur outside of the daytime hours allowed by local ordinances in each jurisdiction. SDG&E shall submit a copy of approved variances

to the CPUC at least two weeks prior to construction activities requiring the variance. The CPUC will not authorize any work outside of locally permitted construction hours that would exceed local standards without an approved variance.

- Sound walls or acoustic blankets shall be temporarily installed to shield adjacent residences from stationary equipment (e.g., generators) where residences are located within 200 feet of the equipment. The sound walls or acoustic blankets shall have a height of no less than 3 feet greater than noise-generating piece(s) or parts of equipment, a Sound Transmission Class (STC) of 19 or greater, and a surface with a solid face from top to bottom without any openings or cutouts along the face or at the base of the barrier.
- Construction traffic shall be routed away from residences and schools, where feasible.
- Unnecessary construction vehicle use and idling time shall be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. If a vehicle is not required for use immediately or continuously for construction activities, its engine shall be shut off.

Mitigation Measure Noise-3: Helicopter Take-off and Landing Areas. Helicopter takeoff and landing areas shall be located a minimum of 300 feet from the nearest sensitive receptor. Helicopter takeoff and landing shall only occur from the hours of 7 AM to 5 PM. No helicopter takeoff and landing areas shall be permitted at the Evergreen Nursery staging yard due to the close proximity of sensitive receptors adjacent to this staging yard.

Mitigation Measure Noise-4: Corona Rings. SDG&E shall install corona rings on all insulators to minimize the effects of corona along the 230-kV transmission line.

Mitigation Measure Noise-5: Corona Noise Complaints. SDG&E shall respond to third-party complaints of corona noise generated by operation of the transmission line by investigating the complaints and by implementing feasible and appropriate measures (such as wash insulators, repair damaged conductors, insulators, or other hardware). As part of SDG&E's repair inspection and maintenance program, the transmission line shall be patrolled, and damaged insulators or other transmission line materials, which could cause excessive noise, shall be repaired or replaced.

Significance after mitigation: Significant and unavoidable.

Impact Noise-2: Would the Proposed Project expose persons to or generate excessive groundborne vibration or groundborne noise levels? (*Less than significant with mitigation*)

No vibration-sensitive land uses (e.g., high precision manufacturing facilities or research facilities with optical and electron microscopes) are located in the Proposed Project vicinity. The significance threshold for "excessive" groundborne vibration depends on whether the Proposed Project would cause groundborne vibration noise levels that would be a nuisance or annoyance, or cause physical damage to a structure.

Construction

Construction of the Proposed Project may require blasting if hard rock is encountered during ground excavation. Vibration levels associated with rock blasting, if conducted, would be site-specific and depend on soil/rock conditions at the site, the amount of explosive used, and the depth that the blasting occurs. Airblasts are also of concern when blasting. An airblast is a sudden increase in air pressure and low-frequency noise pulse that is created around a blast area when the ground expands over the area of the blast. Vibration levels or airblasts associated with blasting could cause damage to weak structures resulting in a significant impact. SDG&E would implement APM NOISE-5 as part of the Proposed Project, which would reduce impacts by requiring that SDG&E prepare a noise and vibration calculation prior to blasting at each site and that SDG&E follow all federal, state, and local requirements regarding blasting, as well as SDG&E's blasting guidelines.

Impacts from blasting would still be significant even with APM NOISE-5 because the vibration from blasting could be a nuisance to nearby residents. In the unlikely event of an airblast from blasting, there is the potential for the airblast to result in damage to structures or injure bystanders within the vicinity. Mitigation Measure Hazards-1 would reduce the impact from blasting by requiring SDG&E to prepare a site-specific blasting plan for each blast location; notice property owners in areas that will experience groundborne vibration; restrict blasting in any area where structures may be damaged or bystanders would be harmed due to ground vibration or airblast; and compensate property owners for any damage to structures, if it occurs. Impacts from groundborne vibration as a result of blasting would be less than significant with mitigation.

Proposed Project construction activities would generate minor groundborne vibration in the vicinity of the construction activity at work areas along the aboveground alignment (for Segments A, C, and D) and near the underground work area for Segment B. Impacts from construction-related groundborne vibration are dependent on the equipment used and the soil conditions surrounding the construction site. Table 4.8-14 presents typical vibration-producing equipment used during construction, the predicted vibration levels at 35 feet from the equipment, and a comparison with the applicable Caltrans threshold for construction vibrational impacts.

Table 4.8-14 Proposed Project Construction Groundborne Vibration Levels

Construction Activity	PPV at 35 feet (in/sec)	Caltrans Vibration Thresholds	
		Structural Damage	Human Response
Caisson Drill (drilling rig)	0.0615	No Damage Anticipated	Distinctly to Strongly Perceptible
Loaded Truck (flatbed)	0.0186	No Damage Anticipated	Barely to Distinctly Perceptible
Bulldozer (small)	0.0021	No Damage Anticipated	Barely Perceptible
Vibratory Roller	0.1450	No Damage Anticipated[1]	Strongly Perceptible to Severe

Notes:

in/sec = inch per second

PPV = peak particle velocity

[1] This level of vibration would potentially damage fragile buildings and extremely fragile historical buildings, ruins, and ancient monuments. The nearest receptors (35 feet away) are non-historical residences. No damage is expected.

Source: FTA 2006, Caltrans 2004

Drilling and trenching would produce groundborne vibrations. These construction activities would require the use of vibration-generating equipment such as jackhammers, loaded trucks, rock drills, and bulldozers. Use of vibration-generating equipment would be intermittent and temporary, occurring throughout the 12 month construction period, but only infrequently over the period of one 1 week at any single pole location.

Rock drilling and underground excavation are likely to cause groundborne vibration levels that would be a nuisance or annoyance. The level of groundborne vibration at sensitive receptors would depend on the specific type of equipment used and the soil conditions surrounding the construction site. Physical damage would not occur because no vulnerable structures are close enough to Proposed Project work areas to be damaged by construction. The nearest structures along the new transmission line are residences located as close as 35 feet from the underground work area on Segment B and as close as 37 feet from potential pole locations (Segments A, C, and D). The worst-case vibration level from drilling activities experienced at the nearest receptor location is expected to be 0.1450 in/sec PPV, which would be strongly perceptible for infrequent periods at residences located within 50 feet of any single pole location. Groundborne vibration dissipates rapidly with distance and the vibrations would not be perceptible at distances farther than 50 feet from the vibration source. Groundborne vibration from Proposed Project construction would be intermittent and temporary because the vibration producing equipment would be moving along the alignment. Work at any one site would last less than one week and the use of vibratory equipment would not be constant throughout the workday. Furthermore, groundborne vibration would only occur during daytime work hours when normal daily activities reduce the perceptibility of such vibration. Once drilling is completed vibration would cease. Therefore, groundborne vibration would not be excessive, and the impact would be less than significant. No mitigation is required.

Operation and Maintenance

On-going operation of the transmission line would not require any vehicle or equipment activity and no vibration would be produced by transmission line operation. Inspection and maintenance of the transmission line may generate groundborne vibrations due to trucks driving over uneven surfaces. Vibrations may be perceptible within the immediate Proposed Project vicinity. Inspection and maintenance of the transmission line would involve the same maintenance activities as are currently provided for other transmission lines in the ROW and vibration impacts within the immediate vicinity would be identical to those currently experienced. These maintenance activities would be infrequent and would not generate excessive groundborne vibration or groundborne noise levels. Thus, operation and maintenance of the project would not expose persons to excessive groundborne vibration or groundborne noise levels and impacts would be less than significant. No mitigation is required.

Mitigation Measures: Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significant after mitigation: Less than significant.

Impact Noise-3: Would the Proposed Project result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels? (*Significant and unavoidable*)

A 3 dBA change is the minimum change in environmental noise that is perceptible and recognizable by the human ear. An increase in day-night environmental noise (L_{dn}) levels of more than 5 dBA is considered to be a substantial increase and a significant impact.

Construction

Construction of the Proposed Project is anticipated to last 12 months. Noise generated during project construction would be temporary and would not result in a permanent increase in ambient noise levels within the project vicinity. There would be no impact related to a permanent increase in ambient noise levels.

Operation and Maintenance

The average daytime ambient noise level in the project corridor ranges from 41.6 dBA to 68.1 dBA, and the maximum noise levels range from 63.7 dBA to 84.8 dBA. Background noise levels along the project corridor are generally less than 50 dBA, based on the community noise survey that was conducted to characterize the existing noise environment of the project area.

As previously discussed in Impact Noise-1, new permanent noise sources associated with the Proposed Project would be limited to noise generated by corona discharge on the new overhead 230-kV power line. No new noise sources are anticipated for the underground portion of the new 230-kV line (Segment B), at temporary work areas, or at other system facilities. Maintenance and inspection of the system would not increase in intensity, frequency, or duration, and the noise levels from these activities would not increase relative to existing conditions.

Overhead Transmission Line Segments A and C

Existing 230-kV transmission lines along Segments A and C of the Proposed Project alignment contribute to the ambient noise environment prior to Project construction. During wet conditions the existing 230-kV lines produce corona noise up to 49 dBA directly below the line. After Project construction corona noise directly under the lines is expected to reach up to 52 dBA during wet conditions. This is an increase of 3 dBA and would be barely perceptible over ambient noise levels (a significant impact is defined as a permanent increase of more than 5 dBA). Corona noise would result in a less than significant permanent increase to the existing noise environment[2] in Segments A and C where there are existing 230-kV transmission lines. The Proposed Project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Proposed Project. Impacts would be less than significant. No mitigation is required.

Overhead Transmission Line Segment D

The SDG&E ROW in Segment D contains a 138-kV power and two 69-kV power lines; there is no existing 230-kV transmission line within Segment D, and existing corona noise levels in Segment D are much less than corona noise levels in Segments A and C of the Proposed Project. The ambient noise level in Segment D ranges from 34.7 dBA to 50.6 dBA (refer to Table 4.8-3). The Proposed Project transmission line would produce corona noise up to 49 dBA directly below the line during wet weather conditions. The corona noise would result in a permanent noise increase of up to 14.3 dBA over ambient noise levels. This permanent increase in noise levels would be significant (i.e., more than 5 dBA). Mitigation Measure Noise-4 would reduce corona noise through installation of corona rings at the conductors. Mitigation Measure Noise-5 requires SDG&E to respond to and investigate third-party corona noise complaints and to implement feasible and appropriate repairs to reduce corona levels, such as repair of damaged hardware or conductors. However corona noise levels at sensitive receptors along Segment D could still exceed ambient noise levels by more than 5 dBA after implementation of Mitigation Measures Noise-4 and Noise-5. The impact would therefore be significant and unavoidable.

Mitigation Measures: Noise-4 and Noise-5 (refer to Impact Noise-1)

Significance after mitigation: Significant and unavoidable.

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[2] Note that this analysis reflects a different CEQA significance criteria than that analyzed in Impact Noise-1 above, which considers whether noise could exceed local standards and ordinances. Corona noise could exceed nighttime noise standards during wet conditions as described in that impact discussion. Impact Noise-3 analyzes if the Proposed Project would create a permanent increase in noise.

Impact Noise-4: Would the Proposed Project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction? (*Significant and unavoidable*)

A 3 dBA change is the minimum change in environmental noise that is perceptible and recognizable by the human ear. Intermittent noise sources are temporary or periodic. Intermittent noises would cause a significant impact over shorter durations if increases greater than 10 dBA above the maximum ambient noise level occur.

Construction

Transmission Line All Segments

Construction noise levels and impacts are described in Impact Noise-1, above. Refer to Tables 4.8-10 for equipment noise levels, 4.8-12 for helicopter noise levels, and 4.8-13 for the maximum noise levels by construction area and activity. Noise levels could reach 90 dBA during site preparation for tower structure construction, 89 dBA near helicopter flight paths, and up to 97 dBA if blasting is used at the work site. Construction noise of this level would cause significant (more than 10 dBA L_{dn}) increase (up to 40 dBA) over baseline ambient noise levels. This would be a significant impact. SDG&E would implement APMs NOISE-2 and NOISE-4 as part of the Proposed Project. AMP NOISE-2 requires the use of functioning mufflers on all equipment. APM NOISE-4 limits helicopter usage to the construction hours approved by the City of San Diego (7 AM to 7 PM) and the City of Poway (7 AM to 5 PM). Temporary impacts to ambient noise levels would remain significant with implementation of these APMs.

Mitigation Measures Noise-1, Noise-2, Noise-6, and Hazards-1 would reduce noise impacts by requiring SDG&E to notify all sensitive receptors within 300 feet of the project alignment and construction work areas, and to implement noise-reducing barriers and other BMPs during construction along Segments A, C, and D. Mitigation Measure Hazards-1 requires SDG&E to notify residents within the area of effect for any blasting activities. Mitigation Measure Noise-6 requires SDG&E to coordinate helicopter activities with local school districts in order to minimize disruption to classrooms. Even with mitigation measures in place, construction noise levels would be more than 10 dBA higher than ambient noise levels. Therefore, the impact from an intermittent or temporary increase in noise levels would be significant and unavoidable.

Staging Yards

Noise levels at staging yards could be up to 108 dBA during takeoff of a heavy-lift helicopter. Refer to Tables 4.8-10 for equipment noise levels, 4.8-12 for helicopter noise levels, and 4.8-13 for the maximum noise levels by construction area and activity. Construction noise of this level would cause a substantial (more than 10 dBA L_{dn}) increase over baseline ambient noise levels and would be a significant impact. SDG&E would implement APMs NOISE-2 and NOISE-4 as part of the Proposed Project. AMP NOISE-2 requires the use of functioning mufflers on all equipment. APM NOISE-4 limits helicopter usage to the construction hours approved by the City of San Diego (7 AM to 7 PM) and the City of Poway (7 AM to 5 PM). Temporary impacts to ambient noise levels would remain significant with implementation of these APMs.

Mitigation Measure Noise-3 requires SDG&E to locate helicopter landing areas 300 feet from the nearest sensitive receptor. This would reduce noise to less than 75 dBA when averaged over 12 hours, but peak noise could still reach levels of 87 dBA. Temporary noise levels after implementation of Mitigation Measure Noise-3 would still be significantly (more than 10 dBA) higher than pre-construction ambient noise. Impacts after mitigation would be significant and unavoidable.

Operation and Maintenance

Impacts during operation and maintenance of the Proposed Project have been outlined in the discussions for Impact Noise-1 and Impact Noise-3. Noise levels would increase by approximately 3 dBA as a result of corona noise from the proposed transmission line. No substantial (more than 10 dBA L_{dn}) temporary or periodic increases in ambient noise levels in the project vicinity would occur. The impact would be less than significant. No mitigation is required.

Mitigation Measures: Noise-1, Noise-2, and Noise-3 (refer to Impact Noise-1), Noise-6, and Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

> **Mitigation Measure Noise-6: Coordinate Helicopter Activity with Schools.** SDG&E shall coordinate with local schools to schedule helicopter activities and transmission line construction activities, including power pole installation and trenching activities. No activities shall be allowed within 300 feet of school properties at times when classes are in session. Helicopter activities and construction near schools shall be conducted outside of active instruction periods (e.g., before school, after school, during lunch or classroom breaks). Schools shall be notified of any helicopter activities that would increase the noise level at classrooms by 5 dBA or more at least 30 days prior to helicopter use.

Significance after mitigation: Significant and unavoidable.

Impact Noise-5: Would the Proposed Project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project corridor to excessive noise levels? (*Less than significant; no mitigation required*)

Construction

A portion of the Proposed Project in Segment A is located within MCAS Miramar. The MCAS Miramar airstrip is located approximately 4 miles south of the proposed 230-kV transmission line. Portions of the Proposed Project area are located within the MCAS Miramar AIA that are subject to noise impacts associated with fixed-wing aircraft flying at less than 3,000 feet AGL and/or helicopter flying at less than 1,500 feet AGL. The Proposed Project involves construction of a new transmission line and would not expose residents to excessive noise levels associated with airports. Construction workers may be exposed to noise generated by aircraft flying over the Proposed Project area; however, aircraft noise levels would be less than the noise levels generated by construction equipment activities. The MCAS Miramar aircraft would therefore

not expose construction workers to excessive noise levels. Impacts would be less than significant. No mitigation is required.

Operation and Maintenance

The Proposed Project involves a new 230-kV transmission line and does not require regular staffing. Maintenance and inspections would occasionally occur; however, inspections would be no more frequent than for the current power lines in the transmission corridor. SDG&E employees performing inspection duties and maintenance on the line would be exposed to the same noise from MCAS Miramar as in current conditions. No impact would occur.

Mitigation Measures: None required.

Impact Noise-6: Would the Proposed Project be located within the vicinity of a private airstrip and expose people residing or working in the project corridor to excessive noise levels? (*No Impact*)

There are no private airstrips in the vicinity of the Proposed Project. There would be no impact from noise at private airstrips.

Mitigation Measures: None required.

4.8.9 Alternative 1: Cable Pole at Carmel Valley Road (Avoids Cable Pole in Black Mountain Ranch Community Park)

Alternative 1 would involve installation of a new cable pole immediately south of and adjoining Carmel Valley Road within existing SDG&E ROW, transitioning the Segment A overhead transmission line directly into the proposed Carmel Valley Road Segment B underground alignment. Alternative 1 would avoid installation of a cable pole and underground duct bank within the Black Mountain Ranch Community Park. This alternative is described in more detail in Chapter 3: Alternatives.

4.8.9.1 Alternative 1 Environmental Setting

Alternative 1 would have the same noise environment as the Proposed Project along Carmel Valley Road, as described in Section 4.8.3. Ambient noise levels along Carmel Valley Road in the vicinity of the Alternative 1 alignment would be the same as for the Proposed Project (Table 4.8-3). There are no noise-sensitive receptors within 1,000 feet of Alternative 1.

The City of San Diego noise standards that apply to the Proposed Project would also apply to Alternative 1 (Table 4.8-9).

4.8.9.2 Alternative 1 Impacts and Mitigation Measures

Table 4.8.15 summarizes the noise impacts from Alternative 1.

Table 4.8-15 Summary of Alternative 1 Impacts to Noise

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Construction	Less than significant	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Construction	Significant	Significant APM NOISE-5	Less than significant MM Hazards-1
	Operation and Maintenance	No impact	---	---
Impact Noise-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-5: Located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-6: Located within the vicinity of a private airstrip and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---

Alternative 1 would have no impact on three CEQA significance criteria for noise: Impacts Noise-3, Noise-5, and Noise-6, as indicated in Table 4.8-15 above. Alternative 1 would have no impact on these criteria because Alternative 1 would not be located within an airport land use plan, within 2 miles of a public or public use airport, or in the vicinity of any private airstrips. Alternative 1 would not be part of the AIA defined in the MCAS Miramar Airport Land Use Plan that is subject to noise impacts associated with air traffic from MCAS Miramar. Alternative 1 would have no permanent noise impacts associated with construction, operation

or maintenance. Construction activities would be temporary and would not permanently increase ambient noise levels. Operation of the new 230-kV transmission line would have no impact on corona noise because the line would be buried underground between the cable pole and Segment B within Carmel Valley Road.

Impact Noise-1: Would Alternative 1 expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? (*Less than significant; no mitigation required*)

Construction

The same types of heavy equipment (Table 4.8-10) used to install poles for the Proposed Project would be used to construct Alternative 1. Table 4.8-16 provides the maximum anticipated noise levels for Alternative 1. The nearest receptor to Alternative 1 is a residence located 1,455 feet away on Emden Road. Construction noise levels would be barely perceptible and would not exceed City of San Diego noise standards. Impacts would be less than significant. No mitigation is required.

Similar to the Proposed Project, blasting may be required if hard rock is encountered at the cable pole location. Blasting would cause an intense peak noise level of up to 67 dBA the nearest receptor, which would not exceed the City of San Diego noise standard of 75 dBA (L_{eq} 12-hour). Impacts from blasting would be less than significant. No mitigation is required.

Operation and Maintenance

Operation and maintenance activities associated with Alternative 1 would include annual inspections and maintenance of the cable pole on an as-needed basis. As described for the Proposed Project (refer to Section 4.8.8), maintenance activities would not increase noise levels; therefore, there would be no impact from maintenance and inspection activities.

Alternative 1 would have no impact from corona noise.

Mitigation Measures: None required.

Table 4.8-16 Maximum Noise Levels for Alternatives 1 Through 5

Alternaitve[a]	Nearest Receptor (feet)	Alternative Phase	Maximum Noise at the Nearest Receptor (dBA for L_{eq} 10-hour)	Exceeds Standard?
Alternative 1				
Cable Pole	1,455	Construction	67	No
		Operation/Maintenance	0	No
Alternative 2				
Cable Pole	1,302	Construction	55	No
		Operation/Maintenance	0	No

Alternaitve[a]	Nearest Receptor (feet)	Alternative Phase	Maximum Noise at the Nearest Receptor (dBA for L_{eq} 10-hour)	Exceeds Standard?
Alternative 2a Underground Transmission	1,074	Construction	55	No
		Operation/Maintenance	0	No
Alternative 2b Underground Transmission	1,302	Construction	53	No
		Operation/Maintenance	0	No
Alternative 3				
Cable Poles	90	Construction	78	Yes
		Operation/Maintenance	49	Yes
Underground Transmission	10	Construction	97	Yes
		Operation/Maintenance	0	No
Alternative 4				
Cable Poles	290	Construction	68	No
		Operation/Maintenance	49	Yes
Underground Transmission	25	Construction	94	Yes
		Operation/Maintenance	0	No
Alternative 5				
Overhead Transmission	130	Construction	86	Yes
		Operation/Maintenance	48	Yes
Underground Transmission	40	Construction	94	Yes
		Operation/Maintenance	0	No

Notes:

[a] City of San Diego standards are provided in Table 4.8-9.

Source: U.S. DOT 2008

Impact Noise-2: Would Alternative 1 expose persons to or generate excessive groundborne vibration or groundborne noise levels? (*Less than significant with mitigation*)

Construction

Alternative 1 would construct the cable pole and underground transmission line using the same heavy equipment as the Proposed Project and would generate minor groundborne vibration, as summarized in Table 4.8-14. The nearest building would be located approximately 450 feet from construction area. Vibrations would not be perceptible at distances farther than 50 feet from the vibration source. There would be no impact.

Blasting was analyzed for the Proposed Project and may also be required for construction of Alternative 1. If blasting is required, vibration and air blasts could cause impact to structures. This would be a significant impact. Implement of APM NOISE-5 (city noise variance and blasting guidelines) would reduce blasting impacts; however, impacts would still be significant because the APM does not address potential for structural damage and the nuisance to residents. Mitigation Measure Hazards-1 (site-specific blasting plan) would reduce impacts from blasting to a less-than-significant level by requiring implementation of a site-specific blasting plan that would determine potential impacts for blasting that specific site and would not allow blasting if damage or harm to residents were possible. Blasting would not be permitted at a site where the site-specific blasting plan found potential for damage to property or harm to residents. Per Mitigation Measure Hazards-1, SDG&E would be responsible for repairing any damaged property that occurs as a result of blasting. Impacts would be less than significant with mitigation.

Operation and Maintenance

Operation and maintenance of the transmission line would not generate groundborne vibrations. There would be no impact from operation and maintenance.

Mitigation Measures: Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Less than significant.

Impact Noise-4: Would Alternative 1 result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction? (*Less than significant; no mitigation required*)

Construction of Alternative 1 could cause noise levels of 55 dBA during site preparation for the cable pole and up to 67 dBA if blasting were required for excavation at the cable pole location (Table 4.8-16). The nearest sensitive receptors are located on Emden Road near Carmel Mountain Road. Existing ambient noise conditions are expected to be similar to Carmel Valley Road (68 dBA, refer to Table 4.8-3). Impacts would be less than significant. No mitigation is required.

Mitigation Measures: None required.

4.8.10 Alternatives 2a and 2b: Cable Pole at Pole P40 and Underground Alignment through City Open Space or City Water Utility Service Road (Avoids Cable Pole in Black Mountain Ranch Community Park)

Alternative 2 would involve installation of a new cable pole in the same location for both Alternatives 2a and 2b, approximately 300 feet south of Carmel Valley Road within existing SDG&E ROW, transitioning the Segment A overhead transmission line into the proposed Carmel Valley Road Segment B underground alignment via one of two underground alignment options. Alternative 2a would locate the underground duct bank west of SDG&E ROW through City of San Diego open space and into Carmel Valley Road. Alternative 2b would locate the

underground duct bank east of SDG&E ROW through a City of San Diego water utility service road and into Carmel Valley Road. Both Alternative 2a and 2b would avoid installation of a cable pole and underground duct bank within the Black Mountain Ranch Community Park. This alternative is described in more detail in Chapter 3: Alternatives.

4.8.10.1 Alternative 2 Environmental Setting

Alternative 2 would have the same noise environmental as the Proposed Project along Carmel Valley Road, as described in Section 4.8.3. Ambient noise levels along Carmel Valley Road in the vicinity of Alternative 2 would be the same as for the Proposed Project (Table 4.8-3). The closest receptor to Alternative 2 would be a residence on Emden Road, located approximately 1,302 feet from the cable pole and the nearest portion of the Alternative 2b underground alignment. The Alternative 2a underground alignment would be located approximately 1,074 feet from the nearest receptor on Emden Road.

The City of San Diego noise standards that apply to the Proposed Project would also apply to Alternative 2 (Table 4.8-9).

4.8.10.2 Alternative 2 Impacts and Mitigation Measures

Table 4.8.17 summarizes the noise impacts from Alternative 2.

Table 4.8-17 Summary of Alternative 2 Impacts to Noise

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Construction	Less than significant	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Construction	Significant	Significant APM NOISE-5	Less than significant MM Hazards-1
	Operation and Maintenance	No impact	---	---
Impact Noise-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction.	Construction	Less than significant	---	---
	Operation and Maintenance	No impact	---	---

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-5: Located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-6: Located within the vicinity of a private airstrip and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---

Alternative 2 would have no impact on three CEQA significance criteria for Noise: Impacts Noise-3, Noise-5, and Noise-6, as indicated in Table 4.8-17 above. Alternative 2 would have no impact on these criteria because Alternative 2 would not be located within an airport land use plan, within 2 miles of a public or public use airport, or in the vicinity of any private airstrips. Alternative 2 would not be part of the AIA defined in the MCAS Miramar Airport Land Use Plan that is subject to noise impacts associated with air traffic from MCAS Miramar. Alternative 2 would have no permanent noise impacts associated with construction, operation or maintenance. Construction activities would be temporary and would not permanently increase ambient noise levels. Operation of the new 230-kV transmission line would have no impact on corona noise because the line would be buried underground between the cable pole and Segment B within Carmel Valley Road.

Impact Noise-1: Would Alternative 2 expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? (*Less than significant; no mitigation required*)

Construction

Alternative 2 would require the same equipment used to install the cable pole and construct the underground duct bank as the Proposed Project (Tables 4.8-10). Foundation construction and installation of the cable pole would produce noise up to 55 dBA (Table 4.8-16), which would be quieter than the ambient noise levels in the area. Underground transmission line construction of Alternatives 2a and 2b would produce noise up to 55 dBA and 53 dBA, respectively. Noise produced from construction of Alternative 2 would not exceed City of San Diego noise standards. Impacts would be less than significant. No mitigation is required.

Similar to the Proposed Project, blasting may be required if hard rock is encountered at the cable pole location. Blasting would cause an intense peak noise level of up to 67 dBA at the

nearest receptor on Emden Road. Blasting would not violate the City of San Diego noise standard of 75 dBA. Impacts from blasting would be less than significant. No mitigation is required.

Operation and Maintenance
Operation and maintenance activities associated with Alternative 2 would include annual inspections and maintenance of the cable pole and underground transmission line on an as-needed basis. As described for the Proposed Project (refer to Section 4.8-8), maintenance activities would not increase noise levels; therefore, there would be no impact from maintenance and inspection activities.

Alternative 2 would have no impact from corona noise.

Mitigation Measures: None required.

Impact Noise-2: Would Alternative 2 expose persons to or generate excessive groundborne vibration or groundborne noise levels? (*Less than significant with mitigation*)

Construction
Alternative 2 would construct the cable pole and underground transmission line using the same heavy equipment as the Proposed Project and would generate minor groundborne vibration, as summarized in Table 4.8-14. The nearest building would be located approximately 150 feet from construction areas, and the nearest sensitive receptor would be located1,302 feet away. Vibrations would not be perceptible at distances farther than 50 feet from the vibration source. There would be no impact.

Blasting was analyzed for the Proposed Project and may also be required for construction of Alternative 2. If blasting is required, vibration and air blasts could cause impact to structures. This would be a significant impact. Implementation of APM NOISE-5 (city noise variance and blasting guidelines) would reduce blasting impacts; however, impacts would still be significant because the APM does not address potential for structural damage and the nuisance to residents. Mitigation Measure Hazards-1 (site-specific blasting plan) would reduce impacts from blasting to a less-than-significant level. Impacts would be less than significant with mitigation.

Operation
Operation and maintenance of the transmission line would not generate groundborne vibrations. There would be no impact from operation and maintenance.

Mitigation Measures: Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Less than significant.

Impact Noise-4: Would Alternative 2 result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction? (*Less than significant; no mitigation required*)

Construction of Alternative 2a and 2b could cause noise levels of 53 and 55 dBA, respectively, during trenching and up to 67 dBA if blasting were required for excavation at the cable pole location. Table 4.8-16 provides the maximum construction noise level for overhead and underground construction. Construction noise would not cause a significant (more than 10 dBA) increase over the baseline ambient noise level, which is anticipated to be similar to Carmel Valley Road (68 dBA). Impacts would be less than significant. No mitigation is required.

Mitigation Measures: None required.

4.8.11 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road Underground (Avoids Overhead in Northern Half of Segment A, Underground in Segment B, and Overhead in Segment C)

Alternative 3 would include installing an underground alignment starting at a new cable pole where the existing SDG&E ROW crosses Ivy Hill Road and ending at a new cable pole approximately 550 feet west of the Peñasquitos Junction (i.e., where Proposed Project Segments C and D meet). The underground alignment would follow Scripps Poway Parkway, Mercy Road, Black Mountain Road, and finally Park Village Road. Alternative 3 would bypass the northern half of Proposed Project Segment A and all of Proposed Project Segments B and C. This alternative is described in more detail in Chapter 3: Alternatives.

4.8.11.1 Alternative 3 Environmental Setting

Table 4.8-18 provides a list of the nearest sensitive receptors to Alternative 3. Figures 4.8-7 and 4.8-8 show all sensitive receptors within 1,000 feet of Alternative 3.

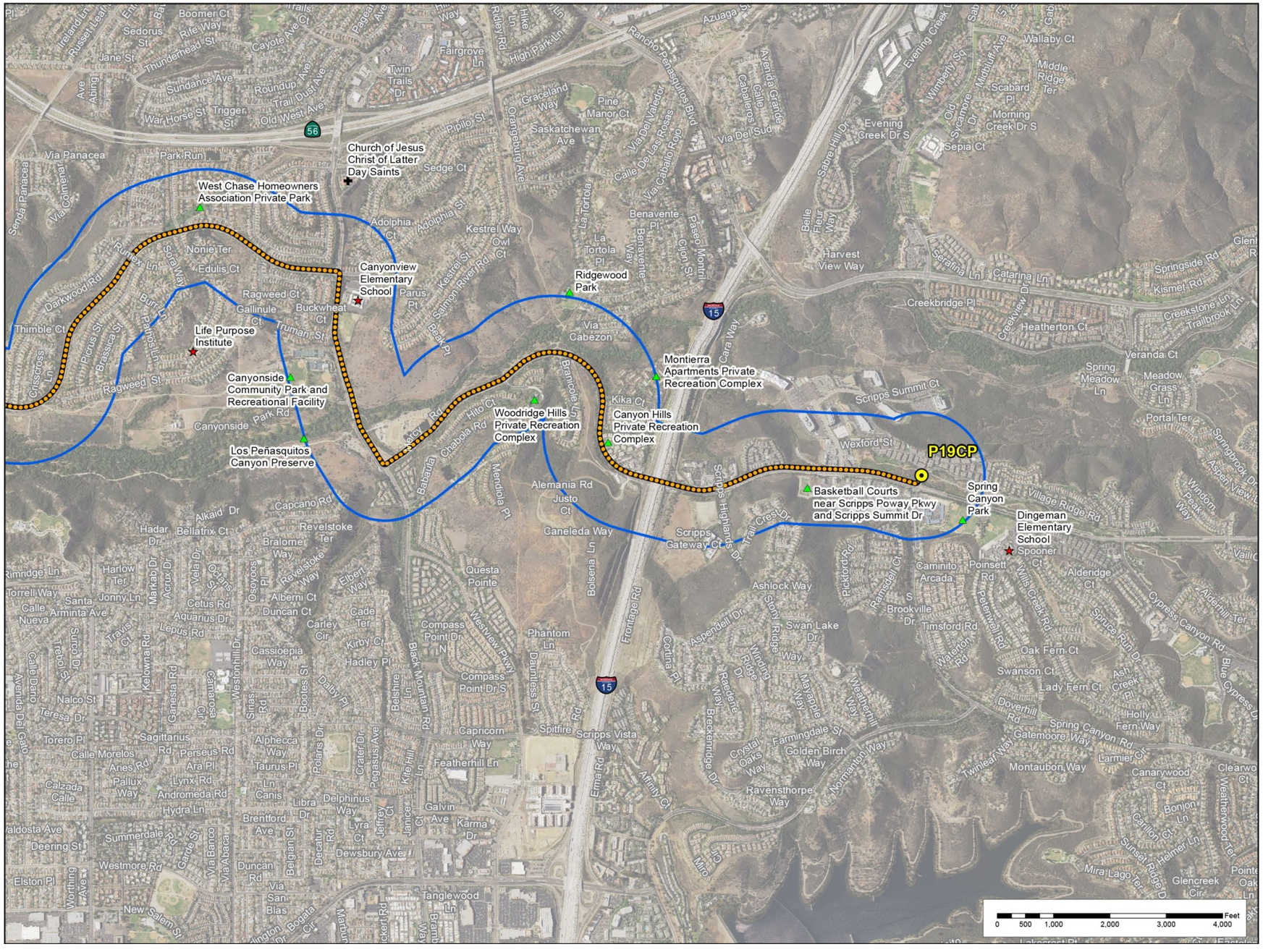
Alternative 3 passes through residential and commercial areas. Ambient noise levels would be consistent with the noise environments of the Proposed Project. Table 4.8-19 summarizes expected noise levels within the underground segment of Alternative 3.

The City of San Diego noise standards that apply to the Proposed Project would also apply to Alternative 3 (Table 4.8-9).

Table 4.8-18 Nearest Noise-Sensitive Receptors to Alternative 3

Receptor Type	Distance to Nearest Work Area (feet)	Project Feature
Residence	10	Underground work area
Park Village Elementary School	50	Underground work area

Figure 4.8-7 Sensitive Receptors within 1,000 feet of Alternative 3 (Map 1)



Sycamore-Peñasquitos 230-kV Transmission Line Project
Alternative Route 3
Sensitive Receptors
Map 1 of 2

Legend
- Alternative 3 (Underground)
- 1000 foot Buffer
- Cable Pole

Sensitive Receptor
- Church
- Park
- School

Map Created: 7/16/2015
Scale = 1:20,000

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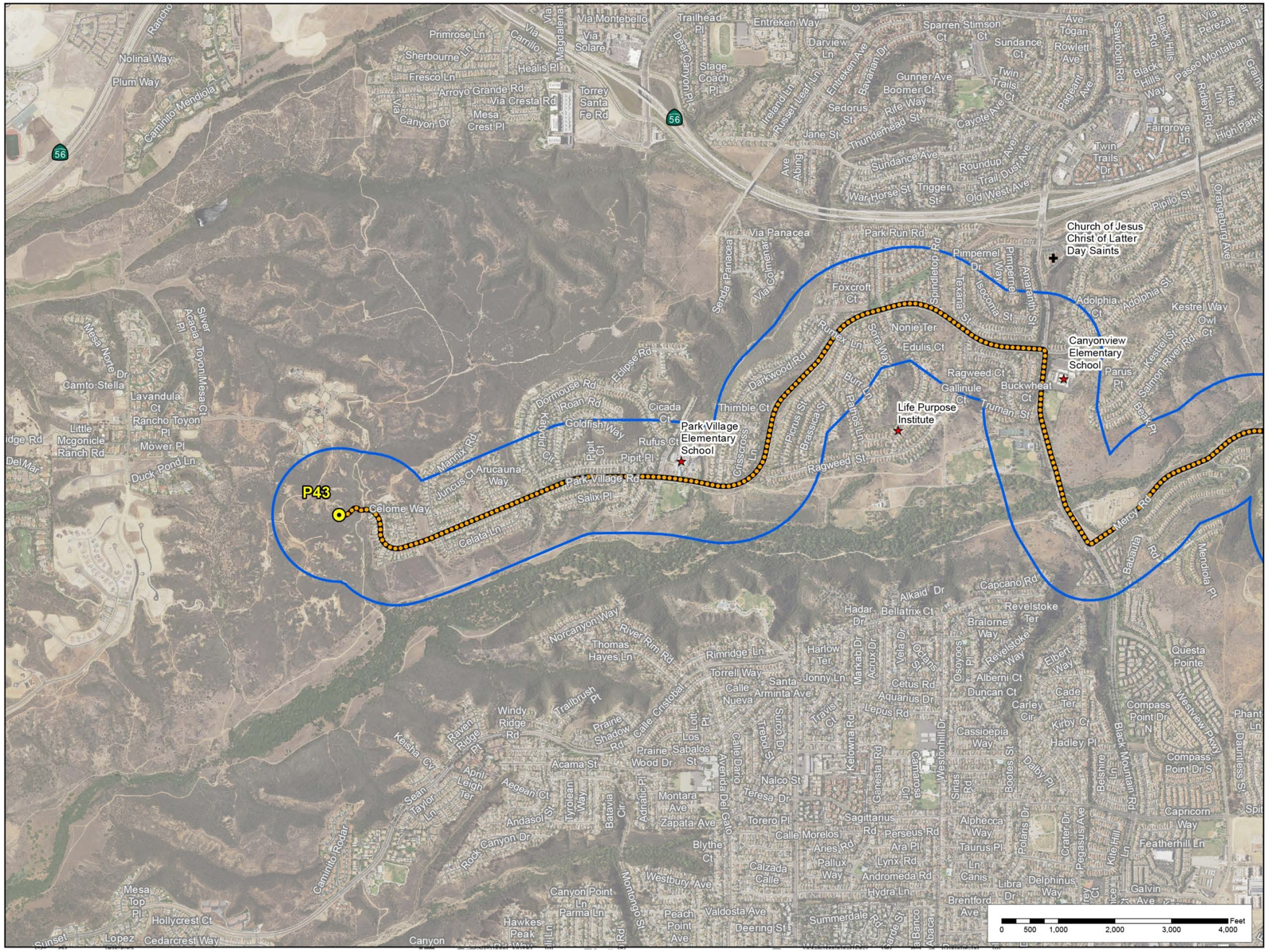
Figure 4.8-8 Sensitive Receptors within 1,000 feet of Alternative 3 (Map 2)



Sycamore-Peñasquitos 230-kV Transmission Line Project
Alternative Route 3
Sensitive Receptors
Map 2 of 2

Table 4.8-19 Alternative 3 Approximate Ambient Noise Levels

Alternative 3 Road Segment	Land Use Type	Similar Proposed Project Noise Environment (dBA)
Mercy Road, Black Mountain Road	Residential, near arterial roadways	Mona Lane (65 dBA)[1]
Park Village Road	Residential	Celome Way (40 dBA)[2]

Notes:

[1] Afternoon noise measurement

[2] Evening noise measurement

4.8.11.2 Alternative 3 Impacts and Mitigation Measures

Table 4.8.20 summarizes the noise impacts from Alternative 3.

Table 4.8-20 Summary of Alternative 3 Impacts to Noise

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Construction	Significant	Significant APM NOISE-3	Significant and unavoidable MM Noise-1 MM Noise-2
	Operation and Maintenance	No impact	---	---
Impact Noise-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Construction	Significant	Significant APM NOISE-5	Less than significant MM Hazards-1
	Operation and Maintenance	Less than significant	---	---
Impact Noise-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction.	Construction	Significant	Significant APM NOISE-3	Significant and unavoidable MM Noise-1 MM Noise-2 MM Noise-6 MM Hazards-1
	Operation and Maintenance	No impact	---	---

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-5: Located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels.	Construction	Less than significant	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-6: Located within the vicinity of a private airstrip and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---

Alternative 3 would have no impact on two CEQA significance criteria for noise: Impacts Noise-3 and Noise-6, as indicated in Table 4.8-20 above. Alternative 3 would not have an impact on these criteria because Alternative 3 would not be located within the vicinity of any private airstrips, and Alternative 3 would have no permanent noise impacts associated with construction, operation or maintenance. Construction activities would be temporary and would not permanently increase ambient noise levels. Operation of the new 230-kV transmission line would have no impact on corona noise because the line would be buried underground.

Impact Noise-1: Would Alternative 3 expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? (*Less than significant with mitigation*)

Construction

I-15 Crossing

Alternative 3 would not require work outside of normal construction hours for removal and installation of conductor across major roadways like I-15 and SR-56. The underground transmission line that would be constructed within Mercy Road would cross under I-15 and would not require a freeway crossing that occurs outside of normal construction hours. There would be no noise impact outside of construction hours associated with crossing I-15.

Cable Poles

The same construction equipment and methods used for the Proposed Project would be required to construct the cable poles for Alternative 3. Blasting may also be required at the cable pole locations if hard rock is encountered. The maximum noise level at sensitive receptors is provided in Table 4.8-16. Noise from excavation and pole foundation would reach up to 78 dBA at the closest receptor (90 feet away at the property line; refer to Table 4.8-16). Noise from construction of the cable poles would exceed the City of San Diego standard, and impacts would be significant. Implementation of APM NOISE-3 would require SDG&E to send notification of construction activities to residents. However, impacts would remain significant because APM NOISE-3 would not reduce noise. Mitigation Measures Noise-1 and Noise-2

would reduce impacts through notifying residents, responding to complaints, and utilizing noise-suppression techniques. Noise barriers that are correctly placed and well-designed reduce construction equipment noise levels by up to 8 dBA; therefore, noise from cable pole construction would be reduced down to 70 dBA. Impacts would be less than significant with mitigation.

Blasting may be required if hard rock in encountered at the cable pole sites. Noise from a single blasting event would cause intense peak noise levels (up to 69 dBA at the nearest residence 90 feet away). Blasting would be very brief in duration (milliseconds), and the noise would dissipate quickly. Blasting noise would not violate City of San Diego noise limit of 75 dBA (L_{eq} 12-hour). Noise levels would not exceed noise standards and impacts would be less than significant. No mitigation is required.

Underground Transmission Line

Construction activities for Alternative 3 would be similar to and use the same equipment as Segment B of the Proposed Project. Construction noise levels adjusted for a 12-hour time period are expected to be 84 dBA at a distance of 50 feet. Sensitive receptors within 134 feet of the underground work areas would experience noise levels in excess of 75 dBA. The nearest sensitive receptors to the Alternative 3 underground transmission line are residences adjacent to Alternative 3 work areas at the property line. There are two schools within 135 feet of the Alternative 3 alignment. Receptors would experience noise impacts that exceed City of San Diego construction noise standards. Construction of Alternative 3 is expected to last 10 months but activities would only last for approximately 1 week in any one location (with construction hours between 7 AM and 7 PM). Noise levels would violate City of San Diego construction noise standards and would be a significant impact. SDG&E would notify residents of construction activities per APM NOISE-3, but implementation of APM NOISE-3 would not reduce noise levels and impacts would remain significant.

Mitigation Measures Noise-1 and Noise-2 would be required to reduce impacts through notifying residents of construction activities, responding to complaints, and utilizing noise-suppression techniques. Even with the implementation of APMs and mitigation measures, noise levels would exceed City of San Diego noise standards. Impacts would be significant and unavoidable.

Operation and Maintenance

Annual inspections and as-needed maintenance of the new underground transmission line would require the use of one vehicle, which would produce noise similar to vehicles already on roadways. Maintenance would not increase noise levels, and there would be no impact.

Alternative 3 would have no impact from corona noise along the underground alignment because the transmission line would be buried.

Mitigation Measures: Noise-1 and Noise-2 (refer to Section 4.8.8)

Significance after mitigation: Significant and unavoidable.

Impact Noise-2: Would Alternative 3 expose persons to or generate excessive groundborne vibration or groundborne noise levels? (*Less than significant with mitigation*)

Construction

Cable Poles

Blasting, as analyzed for the Proposed Project, may be required for construction of the cable poles for Alternative 3. Impacts of blasting on Alternative 3 would be the same as for the Proposed Project. If blasting is required, vibration and air blasts could impact structures. This impact would be significant. SDG&E would abide by the City of San Diego noise variance process and SDG&E blasting guidelines per APM NOISE-5, but it would not ensure that structures in the area are not damaged and residents are not bothered. Mitigation Measure Hazards-1 would reduce impacts to a less-than-significant level through preparation of a site-specific blasting plan.

Underground Transmission Line

Underground construction on Alternative 3 would have similar impacts to Segment B and would cause vibrations that would be a nuisance or annoyance. The level of groundborne vibration at sensitive receptors depends on the specific equipment used and the soil conditions surrounding the construction site. The nearest structures along the underground alignment are residences located as close as 20 feet from the underground work area. The worst-case vibration level from drilling would be 0.268 in/sec PPV. Transient vibration of this magnitude would be distinctly perceptible to residents and could damage fragile or extremely fragile structures (Table 4.8-5). Physical damage to structures would not occur because no vulnerable structures are close enough to the Alternative 3 underground work areas to be damaged by construction (SCIC 2015). Groundborne vibration dissipates rapidly with distance and would not be perceptible at distances farther than 50 feet from the vibration source. Receptors closer than 50 feet would experience intermittent and temporary groundborne vibration from construction of Alternative 3 because vibration-producing equipment would be moving along the alignment and would only be working in any one location on an intermittent basis. Vibration would only occur during daytime work hours. Upon completion of construction, vibration would cease. Therefore, groundborne vibration would not be excessive, and this impact would be less than significant. No mitigation is required.

Operation and Maintenance

Impacts from operation and maintenance of Alternative 3 would be the same as for the Proposed Project. Vibrations from inspection and maintenance of the transmission line would be the same as vibration experienced for current maintenance of existing transmission lines. Maintenance activities would be infrequent and would not generate excessive groundborne noise or vibration levels. Impacts would be less than significant. No mitigation is required.

Mitigation Measures: Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Less than significant.

Impact Noise-4: Would Alternative 3 result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction? (*Significant and unavoidable*)

Underground construction would be similar to Segment B of the Proposed Project. Equipment noise levels and the maximum noise levels by construction area and activity are provided in Tables 4.8-10 and 4.8-13, respectively. Construction could cause noise levels up to 78 dBA during cable pole site preparation, 97 dBA during underground construction, and 69 dBA near the cable pole locations if blasting were required. The increase in noise levels from construction would be a significant (more than 10 dBA) increase over baseline ambient noise levels and would be a significant impact. Implementation of APM NOISE-3 would notify residents of construction activities, but this APM would not reduce noise levels.

Mitigation Measures Noise-1, Noise-2, Noise-6 and Hazards-1 would be implemented to further reduce temporary noise impacts through notifying residents of construction activities, responding to complaints, utilizing noise-suppression techniques, preparing a site-specific blasting plan, and coordinating construction activities with schools. Even with mitigation measures, construction noise levels would be more than 10 dBA higher than ambient noise levels. Therefore, the impact from intermittent or temporary noise increases would be significant and unavoidable.

Mitigation Measures: Noise-1, Noise-2, and Noise-6 (refer to Section 4.8.8); and Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Significant and unavoidable.

Impact Noise-5: Would Alternative 3 be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels? (*Less than significant; no mitigation required)*

Alternative 3 is located within the MCAS Miramar AIA that are subject to noise impacts associated with fixed-wing aircraft flying at less than 3,000 feet AGL and/or helicopter flying at less than 1,500 feet AGL. Construction of Alternative 3 would not expose residents to excessive noise levels associated with airports. Construction workers may be exposed to noise generated by aircraft flying over the Alternative 3 work areas; however, aircraft noise levels would be less than the noise levels generated by construction equipment activities. The MCAS Miramar aircraft would therefore not expose construction workers to excessive noise levels. Impacts would be less than significant. No mitigation is required.

Operation and Maintenance

Alternative 3 involves a new 230-kV transmission line and does not require regular staffing. Maintenance and inspections would occasionally occur; however, inspections would be no more frequent than for the current power lines in the transmission corridor. SDG&E employees currently inspect transmission line within the AIA. Employees performing inspection duties

and maintenance on the power line would be exposed to the same noise from MCAS Miramar as in current conditions. No impact would occur.

Mitigation Measures: None required.

4.8.12 Alternative 4: Segment D 69-kV Partial Underground Alignment (Reduces New TSPs in Segment D)

Alternative 4 would include the installation of a double 69-kV underground alignment starting at two new cable poles (P48AA and P48BB) in Proposed Project Segment D near existing lattice tower E17. The underground alignment would follow Carmel Mountain Road and East Ocean Air Drive, ending at the Peñasquitos Substation. Within Proposed Project Segment D, an existing 69-kV line would be removed from the existing steel lattice towers, and a second 69-kV power line on existing H-frame structures would be de-energized and left in place. Construction within Proposed Project Segment D would be reduced under Alternative 4. The 230-kV transmission line would be installed on the existing steel lattice towers similar to the Proposed Project; however, the H-frame structures would not be removed, and no new TSPs would be installed between lattice tower E17 and the Peñasquitos Substation. This alternative is described in more detail in Chapter 3: Alternatives.

4.8.12.1 Alternative 4 Environmental Setting

Table 4.8-21 provides a list of the nearest sensitive receptors to the Alternative 4 underground segment. Figure 4.8-9 shows all sensitive receptors within 1,000 feet of the Alternative 4 underground alignment.

Alternative 4 passes through residential areas. Ambient noise levels would be consistent with the noise environment of Proposed Project Segment D at Duck Pond Lane, Gallop Crest Court, and Sycamore Canyon Park Trail because Alternative 4 would be constructed near these noise survey locations (Table 4.8-3).

The City of San Diego noise standards that apply to the Proposed Project would also apply to Alternative 4 (Table 4.8-9).

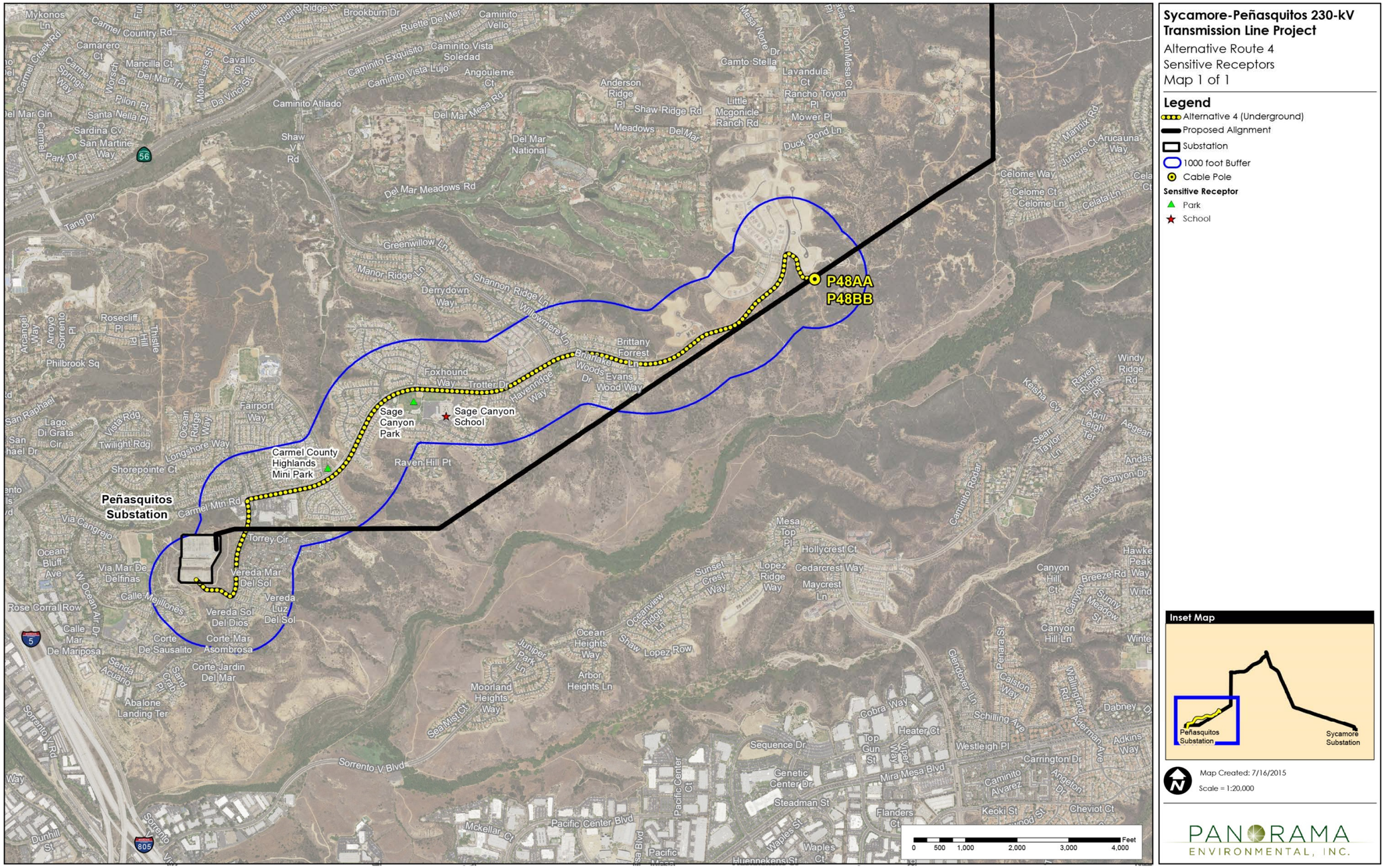
Table 4.8-21 Nearest Noise-Sensitive Receptors to Alternative 4

Receptor Type[1]	Distance to Nearest Work Area (feet)	Project Feature[5]
Residence	40	Underground Segment F work area
Sage Canyon School	25 feet to property; 220 feet to nearest building	Underground Segment F work area

Notes:

[1] Alternative 4 would include sensitive receptors along Segments A, B, C, and D of the Proposed Project (Table 4.8-2).

Figure 4.8-9 Sensitive Receptors within 1,000 feet of Alternative 4



Sycamore-Peñasquitos 230-kV Transmission Line Project
Alternative Route 4
Sensitive Receptors
Map 1 of 1

Legend
- Alternative 4 (Underground)
- Proposed Alignment
- Substation
- 1000 foot Buffer
- Cable Pole

Sensitive Receptor
- Park
- School

Inset Map

Map Created: 7/16/2015
Scale = 1:20,000

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4.8.12.2 Alternative 4 Impacts and Mitigation Measures

Table 4.8.22 summarizes the noise impacts from Alternative 4.

Table 4.8-22 Summary of Alternative 4 Impacts to Noise

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Construction	Significant	Significant APM NOISE-3	Significant and unavoidable MM Noise-1 MM Noise-2
	Operation and Maintenance	No impact	---	---
Impact Noise-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Construction	Significant	Significant APM NOISE-5	Less than significant MM Hazards-1
	Operation and Maintenance	Less than significant	---	---
Impact Noise-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction.	Construction	Significant	Significant APM NOISE-3	Significant and unavoidable MM Noise-1 MM Noise-2 MM Noise-6 MM Hazards-1
	Operation and Maintenance	No impact	---	---
Impact Noise-5: Located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels.	Construction	Less than significant	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-6: Located within the vicinity of a private airstrip and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---

Alternative 4 would have no impact on two CEQA significance criteria for noise: Impact Noise-3 and Noise-6, as indicated in Table 4.8-22 above. Alternative 4 would not be located in the vicinity of any private airstrips. Alternative 4 would have no permanent noise impacts associated with construction, operation or maintenance. Construction activities would be temporary and would not permanently increase ambient noise levels. Operation of the new 69-kV power lines would have no impact on corona noise because the lines currently exist in the ROW and would be buried underground.

Impact Noise-1: Would Alternative 4 expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? (*Significant and unavoidable*)

Construction

Cable Poles

The same construction equipment and methods used for the Proposed Project would be required to construct the cable poles for Alternative 4. Blasting may also be required at the cable pole locations if hard rock is encountered. The maximum noise level at sensitive receptors is provided in Table 4.8-16. Noise from excavation and pole foundation would reach up to 68 dBA at the closest receptor (290 feet away at the property line). Noise from construction of the cable poles would not exceed the City of San Diego standard, and impacts would be less than significant. No mitigation is required.

Blasting may be required if hard rock in encountered at the cable pole sites. Noise from a single blasting event would cause intense peak noise levels (up to 59 dBA at the nearest residence 290 feet away). Blasting noise would not violate City of San Diego noise limit of 75 dBA (L_{eq} 12-hour), and impacts would be less than significant. No mitigation is required.

Underground Transmission Line

Underground construction of Alternative 4 would be similar to Segment B and would have similar impacts. Construction of Alternative 4 is expected to last 9 months but activities would only last for approximately 1 week in any one location (with construction hours between 7 AM and 7 PM).Cumulative noise from construction equipment used during trenching may reach 84 dBA at a distance of 50 feet. Sensitive receptors within 134 feet of the underground work area would experience noise levels in excess of 75 dBA. The nearest receptor is a residence located 25 feet away from the underground work area. Noise levels would exceed City of San Diego construction noise standards. This impact would be significant. SDG&E would notify residents of construction activities per APM NOISE-3, but implementation of APM NOISE-3 would not reduce noise levels in the construction area. Impacts would still be significant.

Mitigation Measures Noise-1 and Noise-2 would be required to reduce impacts through notifying residents of construction activities, responding to complaints, and utilizing noise-suppression techniques. Even with the implementation of APMs and mitigation measures, noise levels would exceed City of San Diego noise standards. Impacts would be significant and unavoidable.

Operation and Maintenance

The underground 69-kV power lines would require annual inspections and as-needed maintenance similar to Segment B. Annual inspections and as-needed maintenance of the new underground transmission line would require the use of one vehicle, which would produce noise similar to vehicles already on roadways. Maintenance would not increase ambient noise levels, and there would be no impact.

Corona noise would not increase as a result of undergrounding two 69-kV power lines because the power lines would be buried. There would be no impact.

Mitigation Measures: Noise-1 and Noise-2 (refer to Section 4.8.8)

Significance after mitigation: Significant and unavoidable.

Impact Noise-2: Would Alternative 4 expose persons to or generate excessive groundborne vibration or groundborne noise levels? (*Less than significant with mitigation*)

Cable Poles

Blasting may be required for construction of the cable poles for Alternative 4. Impacts of blasting would be the same as for the Proposed Project. If blasting is required, vibration and air blasts could impact structures. This impact would be significant. SDG&E would meet and confer with the City of San Diego to discuss temporarily deviating from the requirements of the noise standards and would abide by SDG&E blasting guidelines per APM NOISE-5, but it would not ensure that structures in the area are not damaged and residents are not bothered. Mitigation Measure Hazards-1 would reduce impacts to a less-than-significant level through preparation and implementation of a site-specific blasting plan.

Underground Transmission Line

Construction of the underground 69-kV power lines would include underground construction similar to Segment B. Underground excavation would generate vibration levels that would be a nuisance or annoyance. The level of groundborne vibration at sensitive receptors depends on the specific type of equipment used and the soil conditions surrounding the construction site. Construction-related vibration levels may reach 0.1450 in/sec PPV at the nearest structure (residences 35 feet away). Frequent intermittent vibration of this level would be barely perceptible to humans but could cause damage to extremely fragile buildings and historical structures (Table 4.8-5). Physical damage would not occur because no vulnerable structures are close enough to underground work areas to be damaged by construction (SCIC 2015). Groundborne vibration dissipates rapidly with distance and vibrations would not be perceptible at distances farther than 50 feet from the vibration source. Groundborne vibration would be intermittent and temporary because vibration-producing equipment would be moving along the alignment and would only be working in any one location on an intermittent basis. Vibration would only occur during daytime hours. Upon completion of construction, vibration would cease. Therefore, groundborne vibration would not be excessive, and this impact would be less than significant. No mitigation is required.

Operation and Maintenance

Vibrations from inspection and maintenance of the transmission line would be the same as vibration experienced for current maintenance of existing transmission lines. Maintenance activities would be infrequent and would not generate excessive groundborne noise or vibration levels. Impacts would be less than significant. No mitigation is required.

Mitigation Measures: Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Less than significant.

Impact Noise-4: Would Alternative 4 result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction? (*Significant and unavoidable*)

As discussed in Impact Noise-1 above, construction from site preparation for cable poles would be 68 dBA, which is below the City of San Diego noise limit for construction activities. Impacts from cable pole construction would be less than significant. No mitigation is required.

Underground construction would be similar to Segment B. Equipment noise levels and the maximum noise levels by construction area and activity are provided in Tables 4.8-10 and 4.8-13, respectively. Temporary noise levels could reach up to 94 dBA during underground construction. The increase in noise levels from underground construction would be a significant increase (more than 10 dBA) over baseline ambient noise levels. This impact would be significant. Implementation of APM NOISE-3 would notify residents of construction activities, but this APM would not reduce noise levels.

Mitigation Measures Noise-1, Noise-2, Hazards-1, and Noise-6 would be implemented to further reduce temporary noise impacts through notifying residents of construction activities, responding to complaints, utilizing noise-suppression techniques, preparing a site-specific blasting plan, and coordinating construction activities with schools. Even with mitigation measures, construction noise levels from underground construction would be more than 10 dBA higher than ambient noise levels. Therefore, the impact from intermittent or temporary noise increases would be significant and unavoidable.

Mitigation Measures: Noise-1, Noise-2, and Noise-6 (refer to Section 4.8.7); and Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Significant and unavoidable.

Impact Noise-5: Would Alternative 4 be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels? (*Less than significant; no mitigation required*)

Construction

Alternative 4 is located within the MCAS Miramar AIA that are subject to noise impacts associated with fixed-wing aircraft flying at less than 3,000 feet AGL and/or helicopter flying at

less than 1,500 feet AGL. Construction of Alternative 4 would not expose residents to excessive noise levels associated with airports. Construction workers may be exposed to noise generated by aircraft flying over the Alternative 4 work areas; however, aircraft noise levels would be less than the noise levels generated by construction equipment activities. The MCAS Miramar aircraft would therefore not expose construction workers to excessive noise levels. Impacts would be less than significant. No mitigation is required.

Operation and Maintenance

Alternative 4 involves a new 230-kV transmission line and does not require regular staffing. Maintenance and inspections would occasionally occur; however, inspections would be no more frequent than for the current power lines in the transmission corridor. SDG&E employees currently inspect transmission line within the AIA. Employees performing inspection duties and maintenance on the power line would be exposed to the same noise from MCAS Miramar as in current conditions. No impact would occur.

Mitigation Measures: None required.

4.8.13 Alternative 5: Pomerado Road to Miramar Area North Combination Underground/Overhead (Avoids All Proposed Project Segments)

Alternative 5 would include underground installation of the transmission line with the exception of the east and west ends where the transmission line would be installed in an overhead within existing SDG&E ROWs. Under this alternative, the alignment would exit the Sycamore Canyon Substation at MCAS Miramar an overhead line and travel westerly within an existing SDG&E ROW toward Stonebridge Parkway. The transmission line would transition to underground beneath Stonebridge Parkway in the vicinity of Greenstone Court, then continue underground on Pomerado Road, Miramar Road, Kearny Villa Road, Black Mountain Road, Activity Road, Camino Ruiz, Miralani Drive, Arjons Drive, Trade Place, Camino Santa Fe, Carroll Road/Carroll Canyon Road and Scranton Road. The transmission line would temporarily transition to an overhead alignment via two new cable poles and two new interset poles, where it would cross I-15. At the western end of the underground portion, the line would transition back to overhead structures located within an existing SDG&E ROW heading northward into the Peñasquitos Substation. Alternative 5 would avoid construction within the Proposed Project alignment with the exception of approximately 3,400 feet of existing SDG&E ROW in Segment A connecting to the Sycamore Canyon Substation. This alternative is described in more detail in Chapter 3: Alternatives.

4.8.13.1 Alternative 5 Environmental Setting

Table 4.8-23 provides a list of the nearest sensitive receptors to Alternative 5. Receptors between the Sycamore Canyon Substation and P5 would be the same as the Proposed Project because this portion of Alternative 5 would be the same as the Proposed Project. Figures 4.8-10 through 4.8-12 show all sensitive receptors within 1,000 feet of the Alternative 5 alignment.

Ambient noise measurements were conducted along Segment A and are provided in Section 4.8.3. The noise environment along the Alternative 5 alignment at Stonebridge Parkway,

Pomerado Road, and I-15 would be similar to ambient noise levels along the Proposed Project alignment because the residential and transportation noise sources in these areas would be similar to those in the Proposed Project area. The noise levels in the industrial segment of the underground alignment between I-15 and Lusk Boulevard would differ from the noise environment in the Proposed Project area. Noise levels in the industrial area would be higher during the daytime than noise levels in the Proposed Project area land uses with the exception of noise levels at I-15 and SR-56; however, nighttime noise levels in the industrial area would be lower than in the residential communities of the Proposed Project. Table 4.8-24 summarizes expected noise levels along the Alternative 5 underground alignment.

The City of San Diego noise standards that apply to the Proposed Project would also apply to Alternative 4 (Table 4.8-9).

Table 4.8-23 Nearest Noise-Sensitive Receptors to Alternative 5

Receptor Type[1]	Distance to Nearest Work Area (feet)	Project Feature
Residence	130	Segment A tower work location
Residence	80	Underground work area
Residence	130	Overhead alignment entering Peñasquitos Substation
California Miramar University	140	Underground work area
Holy Hands Church of God in Christ Church	40	Underground work area

Notes:

[1] Sensitive receptors along the eastern overhead alignment out of Sycamore Canyon Substation are the same as for the Proposed Project.

Table 4.8-24 Alternative 5 Approximate Ambient Noise Levels

Alternative 3 Road Segment	Land Use Type	Similar Proposed Project Noise Environment (dBA)
Stonebridge Parkway and Pomerado Road	Residential	Ivy Hill Drive (47.0 dBA) [1]
I-15 to crossing of Lusk Boulevard	Commercial/Industrial	65 dBA[2]
Overhead segment from Lusk Boulevard to Peñasquitos Substation	Open Space/Residential	Sycamore Canyon Park Trail (41.6 dBA) [3]

Notes:

[1] Evening noise measurement

[2] City of San Diego General Plan (2008) compatible noise level (dBA CNEL) for industrial land use

[3] Afternoon noise measurement

Source: SDG&E 2014a, SDG&E 2014b

Figure 4.8-10 Sensitive Receptors within 1,000 feet of Alternative 5 (Map 1)

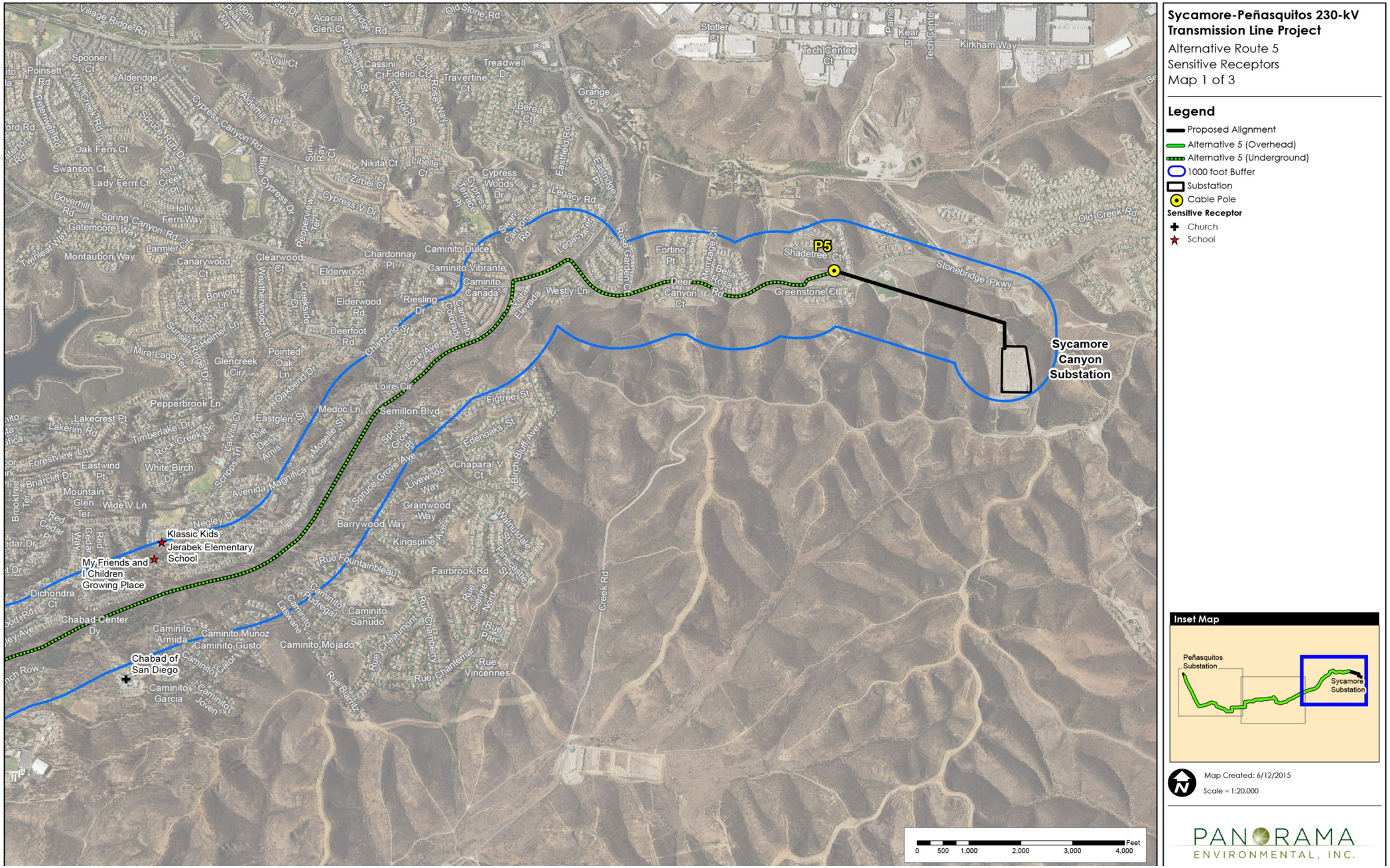


Figure 4.8-11 Sensitive Receptors within 1,000 feet of Alternative 5 (Map 2)

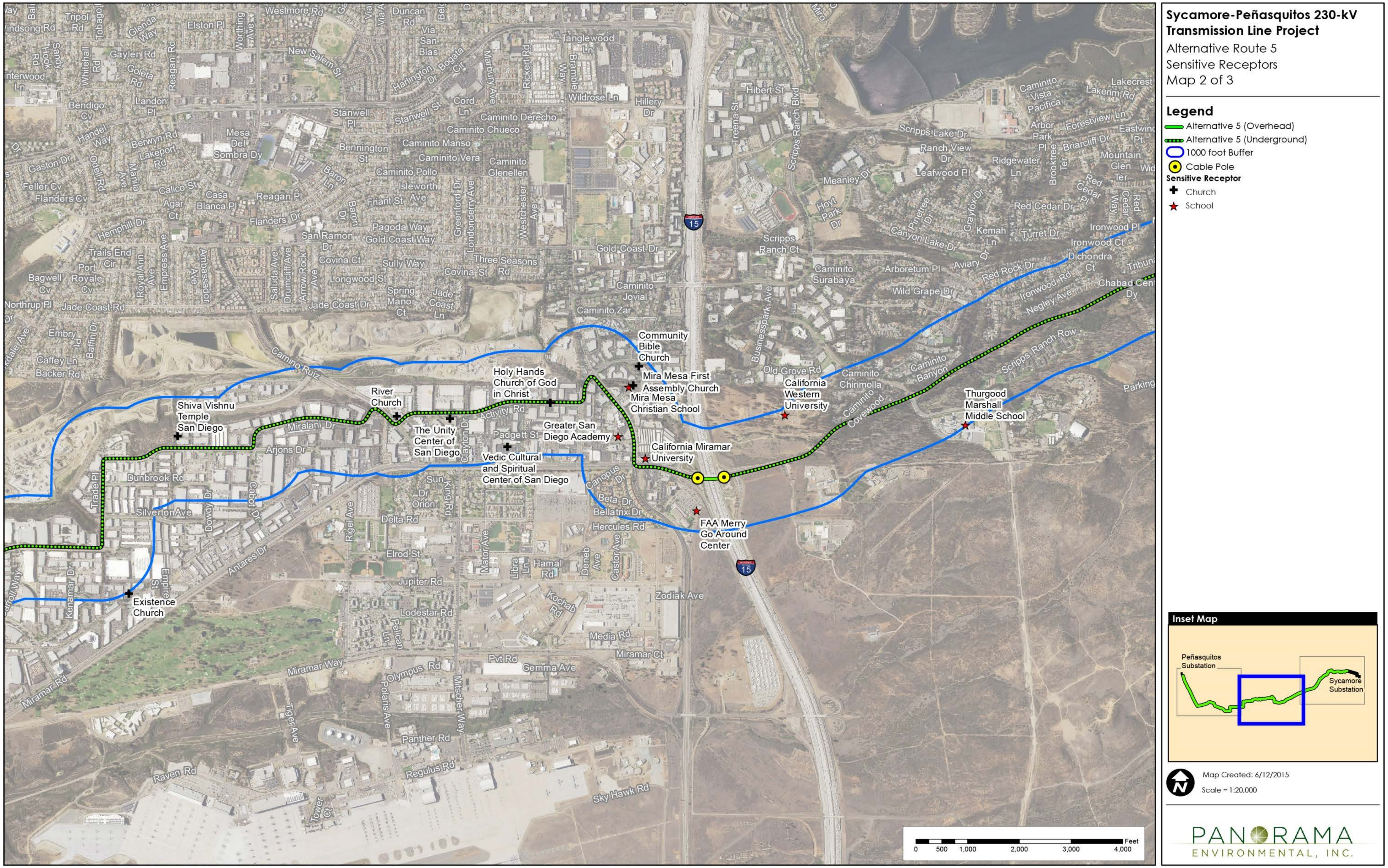
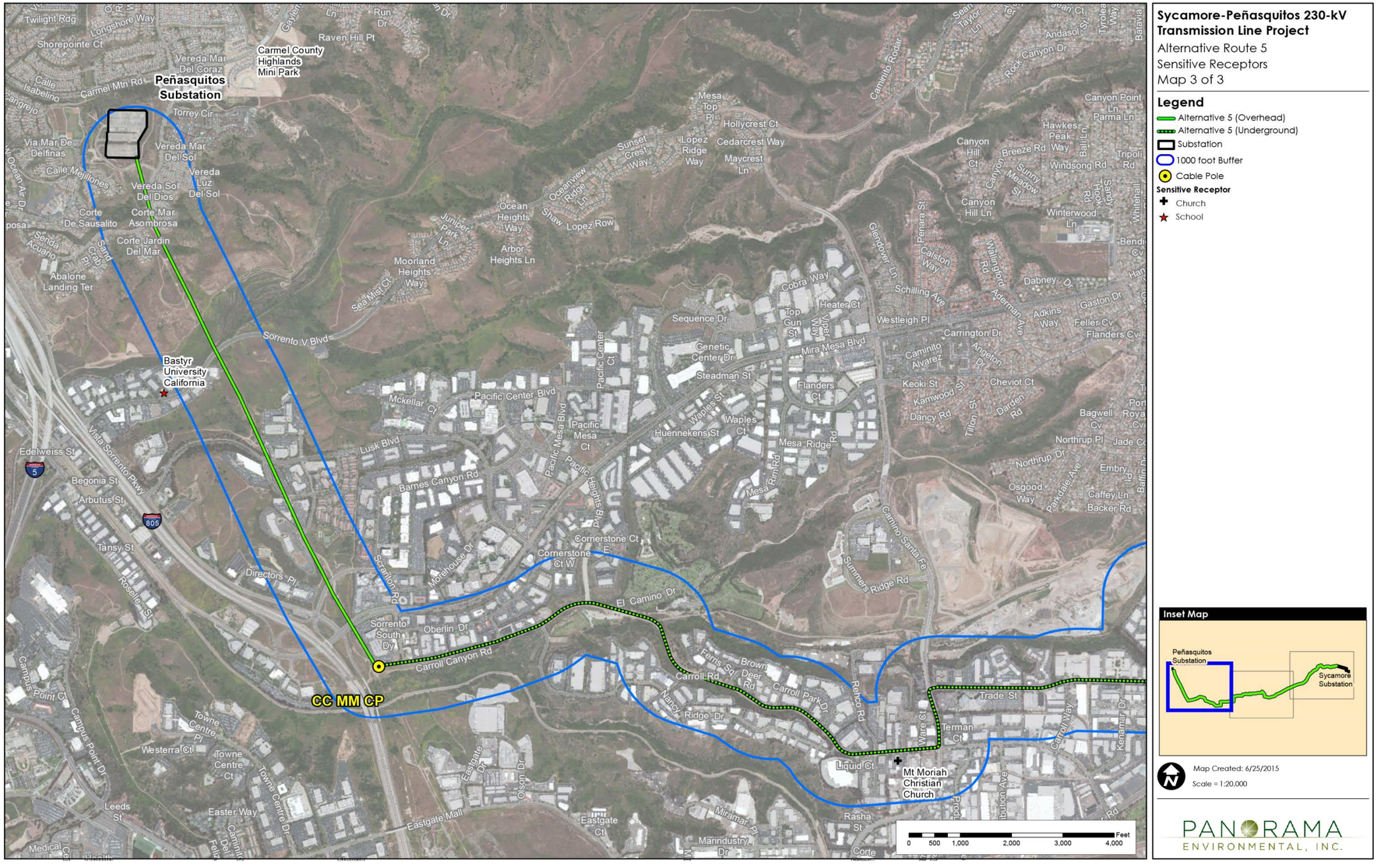


Figure 4.8-12 Sensitive Receptors within 1,000 feet of Alternative 5 (Map 3)



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4.8.13.2 Alternative 5 Impacts and Mitigation Measures

Table 4.8-25 summarizes the noise impacts from Alternative 5.

Table 4.8-25 Summary of Alternative 5 Impacts to Noise

Significance Criteria	Project Phase	Significance Prior to APMs	Significance after APMs and before Mitigation	Significance after Mitigation
Impact Noise-1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Construction	Significant	Significant APM NOISE-3	Significant and unavoidable MM Noise-1 MM Noise-2
	Operation and Maintenance	Significant	---	Significant and unavoidable MM Noise-4 MM Noise-5
Impact Noise-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Construction	Significant	Significant APM NOISE-5	Less than significant MM Hazards-1
	Operation and Maintenance	Less than significant	---	---
Impact Noise-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels.	Construction	No impact	---	---
	Operation and Maintenance	Less than significant	---	---
Impact Noise-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction.	Construction	Significant	Significant APM NOISE-3 APM NOISE-4	Significant and unavoidable MM Noise-1 MM Noise-2 MM Noise-6 MM Hazards-1
	Operation and Maintenance	No impact	---	---
Impact Noise-5: Located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels.	Construction	Less than significant	---	---
	Operation and Maintenance	No impact	---	---
Impact Noise-6: Located within the vicinity of a private airstrip and would expose people residing or working in the project corridor to excessive noise levels.	Construction	No impact	---	---
	Operation and Maintenance	No impact	---	---

Alternative 5 would have no impact on one CEQA significance criterion for noise impacts: Impact Noise-6, as indicated in Table 4.8-25. Alternative 5 would have no impact on this criterion because Alternative 5 would not be located within the vicinity of a private airstrip.

Impact Noise-1: Would Alternative 5 expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? (*Significant and unavoidable*)

Construction

Construction Hours

Construction of Alternative 5 is anticipated to take approximately 12 months. City of San Diego construction hours of 7 AM to 7 PM apply to Alternative 5. Night and weekend construction may be required for activities at staging yards or where equipment and materials are stored in the ROW. Work outside of normal construction hours may also be required for activities involving construction over I-15. Night and evening work is not permitted by the City of San Diego. Implementation of APM NOISE-5 would require SDG&E to meet and confer with the City of San Diego to discuss temporarily deviating from the requirements of the noise standards; however, coordination with local jurisdictions would not reduce noise impacts of night construction, and impacts would still be significant.

Mitigation Measures Noise-1 and Noise-2 would be required to reduce impacts during night construction through notifying residents of construction activities, responding to complaints, and utilizing noise-suppression techniques. Even after implementation of mitigation measures, it is possible that noise during night and weekend construction could exceed noise standards. The impact would be significant and unavoidable.

Overhead Transmission Line

The Alternative 5 eastern overhead alignment (part of Proposed Project Segment A) would require construction of five new TSPs including a cable pole, two cable poles and two TSPs near the crossing of I-15, and a cable pole at the end of Carroll Canyon Road. TSP and cable pole construction would require heavy equipment similar to the equipment used for construction of TSPs and cable poles for the Proposed Project transmission segments.

Helicopters would be required during construction of the Alternative 5 overhead alignments. The five structures in the eastern overhead alignment and the structures in the western overhead alignment are located at least 130 feet from the nearest residence. Heavy-lift helicopters would not be used for overhead transmission line construction; however, light- and medium-lift helicopters would still be used for stringing the new conductor along existing towers and tower construction along the eastern overhead alignment. Helicopter noise associated with overhead transmission line construction could reach up to 69 dBA at the nearest receptor (a residence 130 feet from a transmission line work area) and would not exceed City of San Diego noise standards (75 dBA). Impacts would be less than significant. No mitigation is required.

Blasting may be required for TSP construction along the eastern overhead alignment. Impacts from blasting for Alternative 5 would be the same as the Proposed Project. Blasting noise may

reach 86 dBA at the nearest receptor, a residence 130 feet away. A single blasting event would take milliseconds and sound would dissipate rapidly. The blasting noise would not exceed City of San Diego noise standards (75 dBA) because standards are based on construction noise averaged over 12 hours. Impacts would be less than significant. No mitigation is required.

Underground Transmission Line

Construction activities for the underground segment would be similar and use the same equipment as Segment B of the Proposed Project. Construction noise levels adjusted for a 12-hour time period are expected to be 84 dBA at a distance of 50 feet. The nearest sensitive receptor is the Holy Hands Church of God in Christ located 40 feet from the underground work area on Activity Road, where the noise level would be up to 94 dBA (Table 4.8-16). Sensitive receptors within 134 feet of the underground work areas would experience noise levels in excess of 75 dBA (refer to Table 4.8-23 for receptors closer than 134 feet). Noise levels would violate the City of San Diego noise standard and would be a significant impact. SDG&E would notify residents of construction activities per APM NOISE-3, but it would not reduce noise levels and impacts would remain significant.

Mitigation Measures Noise-1 and Noise-2 would reduce noise through notifying residents, responding to complaints, and utilizing noise-suppression techniques; however, noise levels would still exceed 75 dBA and would therefore be significant. Impacts would be significant and unavoidable.

Operation and Maintenance

The constructed 230-kV transmission line would require annual inspections and as-needed maintenance. Impacts would be similar to the Proposed Project. Annual inspections and as-needed maintenance of the new transmission line would be similar in duration and frequency to the maintenance activities that are currently performed for existing transmission lines. Maintenance would not increase existing noise levels, and there would be no impact.

Alternative 5 would include overhead 230-kV transmission lines that would produce corona noise. The nearest receptor to the Alternative 5 overhead transmission line is 130 feet from the transmission line. Maximum corona noise at 130 feet would be 48 dBA during wet weather and would exceed the City of San Diego nighttime noise standard of 40 dBA. This impact would be significant.

Mitigation Measure Noise-4 would reduce noise levels at the transmission line poles through use of corona rings, but corona noise from the transmission line would not be reduced. Mitigation Measure Noise-5, which required SDG&E to respond to corona noise complaints, would be required but would not guarantee a reduction in corona noise in all circumstances. The impact would be significant and unavoidable.

Mitigation Measures: Noise-1, Noise-2, Noise-4, and Noise-5 (refer to Section 4.8.8)

Significance after mitigation: Significant and unavoidable.

Impact Noise-2: Would Alternative 5 expose persons to or generate excessive groundborne vibration or groundborne noise levels? (*Less than significant with mitigation*)

Construction

Overhead Transmission Line

Alternative 5 requires construction of 10 new transmission structures (6 TSPs and 4 cable poles) and would require the same heavy equipment as the Proposed Project, including potential blasting. Alternative 5 would have the same groundborne vibration impacts as the Proposed Project (Section 4.8.8, Impact Noise-2). SDG&E would meet and confer with the City of San Diego to discuss temporarily deviating from the requirements of the noise standards and would abide by SDG&E blasting guidelines per APM NOISE-5, but impacts may still occur because APM NOISE-5 does not address structural damage.

Mitigation Measure Hazards-1 would reduce impacts from blasting to a less-than-significant level through preparation of a site-specific blasting plan. Impacts would be less than significant with mitigation.

Trucks and cranes would be required during construction of overhead transmission line near Peñasquitos Substation. A loaded truck could produce vibration in the immediate vicinity of work but would dissipate rapidly and would not be perceptible beyond a distance of 50 feet from the work area. The nearest receptor to overhead transmission line construction areas is a residence 130 feet away from the overhead segment near Peñasquitos Substation. Vibration would not be detectible at this distance. There would be no impact.

Underground Transmission Line

Underground excavation could cause vibration levels that would be a nuisance or annoyance. The level of groundborne vibration at sensitive receptors depends on the specific equipment used and the soil conditions surrounding the construction site. The nearest structures along the underground alignment are residences and places of worship located as close as 40 feet from the underground work area. The worst-case vibration level from drilling would be 0.0967 in/sec PPV. Transient vibration of this magnitude would be barely perceptible to residents and would not have the potential to damage even extremely fragile historic structures (Table 4.8-5). Groundborne vibration dissipates rapidly with distance and would not be perceptible at distances farther than 50 feet from the vibration source. The impact would be less than significant. No mitigation is required.

Operation and Maintenance

Impacts from operation and maintenance of Alternative 5 would be the same as for the Proposed Project (Section 4.8.8, Impact Noise-2). Vibrations from inspection and maintenance of the transmission line would be the same as vibration experienced for current maintenance of existing transmission lines. Maintenance activities would be infrequent and would not generate

excessive groundborne noise or vibration levels. Heavy equipment would not be required for maintenance. Impacts would be less than significant. No mitigation is required.

Mitigation Measures: Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Less than significant.

Impact Noise-3: Would Alternative 5 result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels? (*Less than significant*; *no mitigation required*)

Construction

Construction of Alternative 5 is expected to last 12 months. Noise generated during construction would be temporary and would not result in a permanent increase in ambient noise levels within the vicinity of the new transmission line. There would be no impact.

Operation and Maintenance

Ambient noise levels in the vicinity of the Alternative 5 overhead alignment would be the same as for the Proposed Project (Tables 4.8-3 and 4.8-24). Corona noise from the new transmission line would be the only permanent noise source associated with Alternative 5 and would only be experienced in areas with overhead transmission line. Alternative 5 would cause an increase of approximately 3 dBA to the existing noise environment because both overhead transmission line corridors currently contain 230-kV transmission lines that would produce corona noise of a similar magnitude. The nearest sensitive receptors to the Alternative 5 overhead alignment is 130 feet away from the transmission line. The permanent increase in noise levels from corona noise would be negligible. The impact would be less than significant.

Mitigation Measures: None required.

Impact Noise-4: Would Alternative 5 result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction? (*Significant and unavoidable*)

Overhead Transmission Line

Alternative 5 would involve overhead construction near Sycamore Canyon and Peñasquitos Substations. Construction along the eastern overhead alignment could cause noise levels of 90 dBA at 50 feet during site preparation and up to 97 dBA if blasting is required. Construction noise of this level would cause significant (more than 10 dBA) increase (up to 50 dBA) over baseline ambient noise levels. This impact would be significant. SDG&E would notify residents of construction activities per APM NOISE-3, but noise impacts would still be significant because notification would not reduce noise.

Mitigation Measures Noise-1, Noise-2, and Hazards-1 would be implemented to reduce temporary noise impacts through notifying residents, responding to complaints, utilizing noise-suppression techniques, and preparing a site-specific blasting plan. Even with mitigation measures, construction noise levels would be more than 10 dBA higher than ambient noise levels.

Therefore, the impact from intermittent or temporary noise increases would be significant and unavoidable.

Helicopters would be required during construction of Alternative 5. Heavy-lift helicopters would not be used, but light- and medium-lift helicopters would still be used for stringing the new conductor along existing towers near Peñasquitos Substation and TSP construction along the eastern overhead alignment. Helicopter noise associated with overhead transmission line construction could reach up to 82 dBA at the nearest receptor (a residence 130 feet from a tower work area). This would be an increase of more than 10 dBA over existing noise conditions and would be a significant impact.

Implementation of APMs NOISE-3 and NOISE-4 would require notification of residents and restrict helicopter use, but impacts would remain significant.

Mitigation Measures Noise-1, Noise-2, Hazards-1, and Noise-6 would be implemented to reduce temporary noise impacts through notifying residents of construction activities, responding to complaints, utilizing noise-suppression techniques, preparing a site-specific blasting plan, and coordinating construction activities with schools. Even with mitigation measures, construction noise levels would be more than 10 dBA higher than ambient noise levels. Therefore, the impact from intermittent or temporary noise increases would be significant and unavoidable.

Underground Transmission Line

Refer to Tables 4.8-10 and 4.8-13 for equipment noise levels and the maximum noise levels by construction area and activity, respectively. Table 4.8-16 provides the maximum noise of underground construction at the nearest sensitive receptor. Underground construction could generate noise levels of up to 94 dBA. Ambient noise levels along the underground alignment are expected to be around 40 dBA (Table 4.8-24). Construction noise would cause a significant increase (more than 10 dBA) over pre-construction ambient noise levels at the nearest sensitive receptor. SDG&E would notify residents of construction activities per APM NOISE-3, but it would not reduce noise levels or notify all impacted receptors and impacts would remain significant.

Mitigation Measures Noise-1 and Noise-2 would reduce impacts through notifying residents, responding to complaints, and utilizing noise-suppression techniques; however, the increase in the ambient noise level would remain significant (more than 10 dBA). Impacts would be significant and unavoidable.

Mitigation Measures: Noise-1, Noise-2, and Noise-6 (refer to Section 4.8.8); and Hazards-1 (refer to Section 4.11: Hazards and Hazardous Materials)

Significance after mitigation: Significant and unavoidable.

Impact Noise-5: Would Alternative 5 be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and would expose people residing or working in the project corridor to excessive noise levels? (*Less than significant; no mitigation required*)

Construction

Alternative 5 would be located within 1 mile of MCAS Miramar. Portions of the Alternative 5 alignment would be located within the MCAS Miramar land use plan and are part of the AIA that are subject to noise impacts associated with air traffic. Construction workers may be exposed to noise up to 75 dBA generated by aircraft flying over the construction areas, but noise from construction activities would be louder than that from aircraft. The MCAS Miramar aircraft would therefore not expose construction workers to excessive noise levels. Impacts would be less than significant. No mitigation is required.

Operation and Maintenance

SDG&E employees currently perform inspections or conduct maintenance activities on the existing transmission lines in the area. These employees would be exposed to the same noise from MCAS Miramar during inspection on the Alternative 5 transmission line as in current conditions. No impact would occur.

Mitigation Measures: None required.

4.8.14 No Project Alternative

The No Project Alternative would include construction of the CAISO approved Mission—Peñasquitos 230-kV transmission line and Second Poway—Pomerado 69-kV power line. The No Project Alternative would also involve installation of a series reactor at Sycamore Canyon Substation. Noise impacts from the No Project Alternative would be greater than the Proposed Project because construction would occur along one more mile than the Proposed Project. This alternative is described in more detail in Chapter 3: Alternatives. Noise impacts from operation of the No Project Alternative would be greater than impacts from the Proposed Project because additional corona noise would be produced along approximately 1.2 more miles than the Proposed Project and, between Mission Substation and Peñasquitos Junction, would combine with existing corona noise to be louder than corona noise produced from the Proposed Project.

4.8.14.1 Mission—Peñasquitos 230-kV Transmission Line and Second Poway—Pomerado 69-kV Power Line

Construction of the Mission—Peñasquitos transmission line and Second Poway—Pomerado power line would require new structures to accommodate the new transmission and power lines. Pole replacements and conductor stringing could require the use of helicopters, which would generate noise in close proximity to sensitive receptors. Excavation activities would require the use of construction equipment, which would generate temporary noise from construction. If hard rock is encountered at the new pole locations, blasting may be required. Construction of the No Project Alternative could therefore result in significant noise impacts along these two transmission routes. These impacts could be reduced to less than significant

through implementation of standard mitigation measures similar to those defined for the Proposed Project.

There would be no permanent noise impact from operation and maintenance of the Second Poway – Pomerado power line because the power line would be a 69-kV power line, which does not produce audible corona noise.

The Mission—Peñasquitos transmission line is a 230-kV transmission line which could result in significant impacts from a permanent increase in corona noise. Corona noise from the Mission—Peñasquitos line would combine with corona noise from two other 230-kV transmission lines between Mission Substation and Peñasquitos Junction. While noise from the two existing lines likely already exceeds the City of San Diego nighttime noise threshold, noise from the Mission—Peñasquitos line would increase total corona noise emitted from the transmission corridor and result in a significant impact. Along Proposed Project Segment D, corona noise from the Mission—Peñasquitos transmission line would be comparable to the Proposed Project, which would also be significant. There are limited options for mitigating corona noise, none of which would effectively mitigate the effects of corona noise. This impact would likely remain significant and unavoidable, similar to the Proposed Project.

4.8.14.2 Series Reactor at Sycamore Canyon Substation

Installation of a series reactor at Sycamore Canyon Substation would have a less than significant noise impact from construction activities. The nearest sensitive receptor is located more than a quarter-mile from the substation, and construction noise would attenuate with distance from the construction site. From a distance of a quarter-mile, sensitive receptors would likely not be able to distinguish construction noise from the ambient noise level. Noise from operation of the series reactor would similarly be undistinguishable from the ambient noise level. Impacts would be less than significant.

4.8.15 References

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