D.13 Noise

This section describes the affected environment for Noise in Section D.13.1 and presents the relevant regulations and standards in Section D.13.2. Sections D.13.3 through D.13.5 describe the impacts of the Proposed Project and alternatives. Section D.13.6 presents the mitigation measures and mitigation monitoring requirements, and D.13.7 lists references cited.

D.13.1 Environmental Setting / Affected Environment

D.13.1.1 Regional Setting and Approach to Data Collection

The environmental setting for noise, including measurements of local noise levels, is drawn from a review of local, State, and federal regulations, policies, and ordinances, and information gathered by the applicant and from other sources, including:

- U.S. Environmental Protection Agency (U.S. EPA),
- California Department of Transportation (Caltrans),
- Plans, policies, and ordinances adopted by local jurisdictions, and
- Other information found in the Proponent's Environmental Assessment (PEA).

Local land uses and the sensitivity of those uses to potential changes in noise levels are discussed, and existing laws and regulations relevant to noise control are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid project impacts.

D.13.1.2 Environmental Setting by Segment

Community Noise Fundamentals. To describe environmental noise and to assess project impacts on areas that are sensitive to community noise, a measurement scale that simulates human perception is used. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels (dB) are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.

Community noise levels can be highly variable from day to day as well as between day and night. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The L25 is the noise level exceeded 25 percent of the time. The L50 is the median noise level that is exceeded fifty percent of the time during a measurement interval, and the L90 is the noise level that is exceeded 90 percent of the time (the 10th percentile).

The Ldn, or day-night average sound level, is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m. Community Noise Equivalent Level (CNEL) is another metric that is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. To easily estimate the day-night level caused by any noise source emitting steadily and continuously over 24-hours, the Ldn is 6.4 dBA higher than the source's Leq. For example, if the expected continuous noise level from equipment is 50.0 dBA Leq for every hour, the day-night noise level would be 56.4 dBA Ldn.

Community noise levels usually are closely related to the intensity of human activity. Noise levels generally are considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable (U.S. EPA, 1974).

Table D.13-1 shows typical sound levels of various environmental noise sources.

Table D.13-1. Typical Sound Levels Measured in the Environment and Industry

Noise Source and Distance	A-Weighted Sound Level (dBA)	Subjective Impression
Civil defense siren (100 ft)	130	Pain threshold
Jet takeoff (200 ft)	120	
Rock music concert (50 ft)	110	
Pile driver (50 ft)	100	Very loud
Ambulance siren (100 ft)	90	
Diesel locomotive (25 ft)	85	Loud
Pneumatic drill (50 ft)	80	
Freeway (100 ft)	70	Moderately loud
Vacuum cleaner (10 ft)	60	
Light traffic (100 ft)	50	
Large transformer (200 ft)	40	Quiet
Soft whisper (5 ft)	30	Threshold of hearing

Existing Noise Levels. A wide range of noise sources occurs near the Proposed Project. The existing transmission lines, which create corona noise that sounds like crackling and humming, are the most notable noise source in the immediate vicinity of the corridor. The noise from corona discharge and similar electrical phenomena associated with high-voltage power transmission is heard near an energized line as a crackling or hissing sound. This noise increases with the load carried by the line, irregularities on the conductor surface caused either by age or moisture, and wet ambient meteorological conditions, such as when high humidity, fog, or rain occur. At the ground level, directly underneath a single 220 kV circuit, the typical audible noise level with wet conductors is about 40 dBA (SCE, 2013). Surrounding land uses contribute many other noise sources, depending on the locations, described below.

In unincorporated areas and communities, predominantly open or rural land leads to existing noise levels being generally low. Noise levels in urban and suburban areas are mainly influenced by roadway and highway traffic, railroads, or aircraft. Baseline noise levels are typically around 30 dBA for quiet rural lands during the nighttime, when located away from traffic, whereas commercial and urban areas typically have noise levels between 60 and 70 dBA or higher (Caltrans, 2009). Noise levels are the highest (over 80 dBA) adjacent to major transportation facilities such as the interstate highways I-10 and I-15 or near industrial land uses. Region-serving airports, landing strips, and a helipad, which can create substantial noise, are also near the project route as described for each segment in Sections D.13.1.2.1 through D.13.1.2.6.

Table D.13-2 summarizes the baseline ambient noise levels along the project route. The locations of these measurement locations are shown in Figure D.13-1.

Table D.13-2. Existing Ambient Noise Levels

Location	Jurisdiction	SCE Monitor	Duration	Leq (dBA)	Ldn (dBA)
Segment 1					
Nelson Street	Loma Linda	LT-2	24 hr	40.7–55.8	54.3
Ragsdale Road	Loma Linda	ST-5	20 min	44.1	—
Juniper Street	Loma Linda	ST-6	20 min	48.1	—
Research Drive	Redlands	ST-7	20 min	63.1	—
Segment 2					
Prado Lane	Colton	LT-1	24 hr	25.2–52.5	46.7
Mt Vernon Ave	Grand Terrace	ST-1	20 min	57.0	—
Vista Grande Way	Grand Terrace	ST-2	20 min	54.0	—
Skyview Drive	Colton	ST-3	20 min	44.4	—
Reche Canyon Road	San Bernardino County	ST-4	20 min	50.5	—
Segment 3					
San Timoteo Canyon Rd, Fisherman's Retreat	Redlands	ST-8	20 min	51.8	—
Segment 4					
O'Grady Court, near El Casco	Beaumont	LT-3	24 hr	37.9–58.3	52.2
Venturi Ave	Beaumont	ST-9	20 min	39.2	—
Trevino Park	Beaumont	ST-10	20 min	47.6	—
Desert Lawn Drive	Beaumont	ST-11	20 min	56.5	—
Cedar View Drive, near Beaumont Ave	Beaumont	LT-4	24 hr	43.8–51.8	53.4
Cedar Hollow Road	Beaumont	ST-12	20 min	46.1	—
Hillside Drive	Banning	ST-13	20 min	46.2	—
Segment 5					
N. Murray Street	Banning	ST-14	20 min	47.6	—
Dailey Road	Morongo	ST-15	20 min	53.7	—
Malki Road, Community Center	Morongo	ST-16	20 min	60.5	—
Segment 6					
Kalsman Drive, Whitewater	Riverside County	ST-17	20 min	47.2	—
San Pierre Road, Whitewater	Riverside County	LT-5	24 hr	45.3–63.8	60.7

Leq: Equivalent noise level of all of the time-varying sound energy during the measurement period, or one hour for long-term measurements.
Ldn: day-night level calculated from 24 hours of equivalent sound level data with a 10 decibel penalty between 10:00 p.m. and 7:00 a.m.
Source: SCE, 2013 (PEA Table 4.12-3).

Noise-Sensitive Areas. Noise-sensitive receptors are areas where excessive noise may conflict with the intended use, examples include residential areas, schools, hospitals, day care centers, campgrounds, and certain other outdoor recreation areas. Noise-sensitive areas encountered near the Proposed Project and associated work areas include residences, schools, community parks, and other recreational uses. Land use designations and zoning appear on maps in EIS Section D.11, Land Use and BLM Realty; and recreation areas appear in EIS Section D.15, Recreation (see Figure D.15-1).

D.13.1.2.1 Segment 1: San Bernardino

Ambient Noise Levels. Ambient noise levels generally depend on the proximity of I-10 and other busy roads in the City of Redlands or the City of Loma Linda. Near I-10 and busy city streets, localized areas of noise levels over 70 Ldn can occur. The densely developed surroundings of Loma Linda and the existing

220 kV corridor near San Bernardino Substation each contribute to ambient noise levels in this portion of the route. San Bernardino International Airport, which causes elevated noise levels near the northernmost portion of the Proposed Project corridor, is situated 1 mile north of the San Bernardino Substation. Elevated noise levels may be caused at the Mountainview Power Plant site, adjacent to the San Bernardino Substation; however, the power plant was approved (CEC, 2001) on the basis that it would cause noise levels under 59 dBA L90 during daytime hours (10 a.m. to 4 p.m.) and 52 dBA L90 during nighttime hours (11 p.m. to 4 a.m.) at the closest sensitive receptor. SCE's four existing 220 kV transmission lines within Segment 1 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. Medium to high-density housing surrounds this part of the 220 kV corridor in the City of Loma Linda primarily near Beaumont and Lawton Avenues and near mission Road, and recreational open space and parks (Hulda Crooks Park) are found under the existing transmission line.

D.13.1.2.2 Segment 2: Colton and Loma Linda

Ambient Noise Levels. Ambient noise levels generally depend on the proximity of I-215 and other busy roads in the Cities of Colton, Grand Terrace, and Loma Linda, and levels under 50 Ldn occur in the mountainous terrain at the edge of the developed areas. Near I-215 and busy city streets, localized areas of noise levels over 70 Ldn can occur. The urban development within these cities results in elevated ambient noise levels where Segment 2 passes through developed areas of the route. The Loma Linda University Medical Center Heliport is 1.0 mile north of the right-of-way, between the Vista and San Bernardino Junction. SCE's existing 220 kV transmission lines in Segment 2 can cause 41 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. Medium to high-density housing surrounds this part of the 220 kV corridor in the Cities of Colton and Grand Terrace, and lower-density housing occurs in unincorporated San Bernardino County, near Reche Canyon Road. No sensitive uses are in Loma Linda along the Segment 2 portion of the corridor between Vista Substation and San Bernardino Junction. In the City of Colton, an elementary school is located within 700 feet northeast of the corridor.

D.13.1.2.3 Segment 3: San Timoteo Canyon

Ambient Noise Levels. Ambient noise levels are generally under 50 Ldn except in the vicinity of the Union Pacific Railroad lines and traffic along San Timoteo Canyon Road. SCE's four existing 220 kV transmission lines within Segment 3 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. The Segment 3 portion of the corridor occurs in the City of Redlands within the San Timoteo Canyon and in unincorporated Riverside County, where some low-density ranches occur. Rural residences are also scattered within about 500 feet of the corridor as it crosses the hills on the western side of the San Timoteo Canyon. The corridor also crosses undeveloped San Timoteo Canyon State Park with open space and trails.

D.13.1.2.4 Segment 4: Beaumont and Banning

Ambient Noise Levels. Ambient noise levels are generally between 50 and 60 Ldn due to urbanized uses adjacent to the Segment 4 portion of the corridor. Along the southern edge of the City of Calimesa, ambient noise levels are generally between 50 and 70 Ldn depending on the proximity the Union Pacific Railroad lines along Oak Valley Parkway and I-10. Near where the corridor crosses I-10 or the railroad, localized areas of noise levels over 70 Ldn can occur. Otherwise, localized areas of noise levels would be

up to 60 Ldn where busy roads occur in the corridor. The Banning Airport, which may cause elevated noise levels near the corridor, is about 1 mile south of the Proposed Project, south of I-10 on the eastern side of Banning. SCE's four existing 220 kV transmission lines within Segment 4 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. The Segment 4 portion of the corridor that occurs in the City of Calimesa is bordered by medium- to high-density residential uses. Medium- to high-density residential uses also occur adjacent to the corridor through the Cities of Beaumont and Banning. Other noise-sensitive land uses that surround the corridor include Beaumont High School and Junior High School, Nobel Creek Park, and other recreational activity areas.

D.13.1.2.5 Segment 5: Morongo Tribal Lands and Surrounding Areas

Ambient Noise Levels. Localized areas of noise levels over 70 Ldn can occur due to commercial uses, industrial uses, and busy roads near the corridor, especially near the Morongo tribal lands, where I-10 is adjacent to the corridor. SCE's existing 220 kV transmission lines in Segment 5 cause 43 Ldn due to audible corona noise (SCE, 2014a).

Noise-Sensitive Receptors. Single-family homes with large lot residential classifications are adjacent to the edges of the transmission line corridor through the Morongo portion of unincorporated Riverside County.

D.13.1.2.6 Segment 6: Whitewater and Devers

Ambient Noise Levels. Noise sources related to industrial uses (including wind generating facilities), transportation facilities, commercial land uses, and dispersed residential uses generally create levels between 50 and 70 Ldn, depending on the proximity to noise sources on industrial land or the proximity of I-10 or Highway 62. SCE's four existing 220 kV transmission lines within Segment 6 can cause a combined noise level of 43 Ldn due to audible corona noise at the edges of this portion of the corridor (SCE, 2014a).

Noise-Sensitive Receptors. Single-family homes with large lot residential classifications are adjacent to and within the transmission line corridor through this portion of unincorporated Riverside County. Low-density homes occur adjacent to the edge of the corridor near Rushmore Avenue, near the boundary with Morongo tribal lands. The existing transmission structures are in the midst of residential uses within 100 feet of some homes in the Haugen-Lehmann area that lies east of Cottonwood Road and west of Desert View Avenue. Homes are also adjacent to the corridor as part of the Whitewater community, west of State Route 62 near Painted Hills Road. In Segment 6, the existing transmission lines cross the Pacific Crest Trail (PCT) that provides recreational access to the wilderness and other areas where quiet is an important feature.

D.13.1.3 Environmental Setting for Connected Actions

Common to all Areas. Community noise levels usually are closely related to the intensity of human activity. Because ambient noise conditions are localized, levels depend on the type and frequency of noise generating activities. In remote wilderness areas, the Ldn (equivalent level over a given time period) noise levels can be below 35 dBA. In small towns and lightly used residential areas, the Ldn is more likely around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas. The presence of a major highway, such as I-10, would contribute to the noise environment in its vicinity.

Desert Center Area. The Desert Center area is primarily BLM-administered lands, with some unincorporated Riverside County land interspersed. Population occurs here in the unincorporated town of Desert Center, the Lake Tamarisk Park development, and Eagle Mountain Village. Otherwise, the land is vacant. The nearest incorporated population centers are well outside the area, and include Blythe, Coachella, and Indio in Riverside County, and Twentynine Palms in San Bernardino County.

As with other desert areas, the Desert Center area likely has Leq noise levels below 35 dBA. In rural residential areas the Leq is typically around 50 or 60 dBA. For example, at rural residences nearest the Palen Solar Power Project, ambient noise was measured at 43 dBA Leq during daylight hours and 34 dBA Leq during evening hours.

Blythe Area. The Blythe area includes BLM-administered lands and privately owned developed, undeveloped, and agricultural lands in eastern Riverside County. Similar to other remote areas, the Blythe area likely experiences noise levels below 35 dBA Leq. In rural residential areas, including agricultural areas, the level is more likely to be around 50 or 60 dBA Leq. Periodic levels around 75 dBA are expected during daytime hours proximate to busier roadways and human activities in the City of Blythe.

D.13.2 Applicable Regulations, Plans, and Standards

D.13.2.1 Federal

Regulating environmental noise is generally the responsibility of local government. The U.S. EPA has published guidelines on recommended maximum noise levels to protect public health and welfare (U.S. EPA, 1974). With regard to noise exposure and workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise or equipment noise (29 CFR Section 1910.95, Code of Federal Regulations), and these safeguards help to avoid excessive noise at construction sites.

There are no federal noise standards that directly regulate environmental noise caused by the types of sources affiliated with the Proposed Project. Federally sponsored highway projects, aviation, and transit are subject to noise analysis procedures and abatement requirements. Table D.13-3 provides a summary of the noise levels recommended by the U.S. EPA for protecting public health and welfare with an adequate margin of safety.

Table D.13-3. Protective Noise Levels Recommended by U.S. EPA

Effect	Maximum Level	Exterior or Interior Area
Hearing loss	70 dB Leq(24)	All areas.
Outdoor activity interference and annoyance	55 dB Ldn	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	55 dB Leq (24)	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	45 dB Ldn	Indoor residential areas.
	45 dB Leq(24)	Other indoor areas with human activities such as schools, etc.

Leq(24) is the sound energy averaged over a 24-hour period.
Ldn is the Leq with a 10 dB nighttime penalty.
Source: U.S. EPA, 1974 (Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Table 1).

D.13.2.2 State

The State of California maintains recommendations for local jurisdictions in the General Plan Guidelines published by the Governor's Office of Planning and Research (OPR, 2003). Local governments have discretion to adopt the state-wide recommendations as necessary for the setting; the following information summarizes the local requirements.

D.13.2.3 Local

The California Public Utilities Commission (CPUC) regulates and authorizes the construction of investor-owned utility facilities and has exclusive jurisdiction over the siting and design of the Proposed Project. Although these projects are exempt from local land use and zoning regulations and permitting, CPUC takes into consideration local plans and policies.

Each local government aims to protect its residents from intrusive noise. Many communities specifically restrict the creation of disturbing noises at night, and daytime construction activities are usually exempt from noise limits.

City of Redlands

City of Redlands, General Plan. Exterior noise levels below 60 CNEL are generally considered to be acceptable and compatible for residential areas. The City of Redlands General Plan (1995) includes:

- **Noise Element Policy 9.0c.** Support measures to reduce noise emissions by motor vehicles, aircraft, and trains.
- **Noise Element Policy 9.0w.** Limit hours for all construction or demolition work where site-related noise is audible beyond the site boundary.
- **Noise Element Policy 9.0y.** Minimize impacts of loud trucks by requiring that maximum noise levels due to single events be controlled to 50 dB in bedrooms and 55 dB in other habitable spaces.

City of Redlands, Municipal Code. The Noise Ordinance for the City of Redlands generally prohibits any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to a reasonable person of normal sensitivity (Section 8.06.030, General Noise Regulations). The noise ordinance also prohibits daytime noise over 60 dBA (between 7:00 a.m. and 10:00 p.m.) and nighttime noise over 50 dBA at residential uses if it occurs over a cumulative period of more than 30 minutes in any hour. These limits are reduced to 55 dBA in the daytime and 45 dBA in the nighttime for any source that contains a steady tone or hum (Section 8.06.070, Exterior Noise Limits).

The Redlands Noise Ordinance also prohibits noise from construction work between weekday hours of 6:00 p.m. and 7:00 a.m., including Saturdays, or at any time on Sundays or holidays, if it creates a noise disturbance across a residential or commercial real property line. Emergency work by public utilities or governmental entities is exempt from this prohibition. Vibration that is perceptible on private property or 150 feet from the source is also prohibited. In all cases, engines powering construction equipment or machinery must be equipped with exhaust and air intake silencers in proper working order (Section 8.06.090, Noise Disturbances Prohibited).

City of Loma Linda

City of Loma Linda, General Plan. The City of Loma Linda General Plan (2009) identifies the following policies:

- **Noise Element Policy A.** Achieve and maintain exterior noise levels appropriate to planned land uses throughout Loma Linda as indicted below:
  - Residential Single-Family. 65 dBA within rear yards. Multifamily: 65 dBA within private yard or enclosed balcony spaces. Single/Multifamily, indoor noise level: 45 dBA with windows closed.
  - Schools Classrooms. 65 dBA exterior noise environment at the classroom location. Play and sports areas: 70 dBA.
  - Libraries, Churches, Hospitals, Nursing Homes. 60 dBA exterior noise environment at the building location.
  - Commercial/Industrial. 70 dBA exterior noise environment at the building location, unless additional interior mitigation is provided.
- **Noise Element Policy B.** Maintain a pattern of land uses that separates noise-sensitive land uses (e.g., residential, churches, schools, hospitals) from major noise sources to the extent possible, and guide noise tolerant land uses into the noisier portions of the Planning Area.
- **Noise Element Policy C.** Require new developments to limit noise impacts on adjacent properties through acoustical site planning, which may include, but is not limited to the following actions:
  - Increased setbacks from noise sources from adjacent buildings.
  - Screen and control noise sources, such as parking, and loading facilities, outdoor activities and mechanical equipment.
  - Use soundproofing materials and double-glazed windows.
  - Retain fences, walls, and landscaping that serve as noise buffers.
  - Orient delivery, loading docks, and outdoor work areas away from noise-sensitive areas.
- **Noise Element Policy H.** Discourage new projects that have potential to create ambient noise levels more than 5 dBA above existing background noise within 250 feet of sensitive receptors, (e.g., schools, hospitals, churches, residential uses, etc.).
- **Noise Element Policy I.** Require new noise sources to use best available control technology to minimize noise from all sources.
- **Noise Element Policy J.** Ensure that construction activities are regulated as to the hours of operation in order to avoid or mitigate noise impacts on adjacent noise-sensitive land uses.
- **Noise Element Policy K.** Require proposed development adjacent to occupied noise-sensitive uses to implement a construction-related noise mitigation plan that identifies the location of construction equipment storage and maintenance areas, and documents the methods that will be used to minimize impacts on adjacent noise-sensitive land uses, including, where needed, installation of temporary noise barriers.
- **Noise Element Policy L.** Require that all construction equipment utilize noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

City of Loma Linda, Municipal Code. The City of Loma Linda Noise Ordinance (Section 9.20.040, Land Use Compatibility for Community Noise Environments) stipulates that acceptable land use compatibility occurs when residential uses are exposed to noise below 55 dBA Ldn or CNEL and below 50 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.). Construction occurring any time except between 7:00 a.m. and 10:00 p.m. is considered to be a nuisance (Section 9.20.050, Prohibited Noises), except when a special temporary waiver is granted by the City Manager. Construction activities may exceed the acceptable

noise levels between 7:00 a.m. and 8:00 p.m. as long as a temporary noise waiver is obtained from the City Manager and the equipment is properly equipped with mufflers. Heavy construction is not permitted on weekends or holidays (Section 9.20.070, Temporary Permit Procedures).

City of Rancho Cucamonga

City of Rancho Cucamonga, General Plan. Exterior noise levels below 60 dBA Ldn or CNEL are generally considered to be acceptable and compatible for residential areas. The City of Rancho Cucamonga, General Plan (2010) includes the following policies:

- **Policy PS-13.3.** Consider the use of noise barriers or walls to reduce noise levels generated by ground transportation noise sources and industrial sources.
- **Policy PS-13.4.** Require that acceptable noise levels are maintained near residences, schools, health care facilities, religious institutions, and other noise-sensitive uses in accordance with the Development Code and noise standards contained in the General Plan.
- **Policy PS-13.6.** Implement appropriate standard construction noise controls for all construction projects.

City of Rancho Cucamonga, Development Code. The Rancho Cucamonga municipal code specifies that residential land uses shall not receive noise levels over 60 dBA between 10:00 p.m. and 7:00 a.m. or over 65 dBA in the daytime. Exempt activities include noise sources associated with, or vibration created by, construction, repair, remodeling, or grading of any real property, provided that when adjacent to a residential land use, school, church or similar type of use, the construction does not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a holiday, and provided noise levels created do not exceed the noise standard of 65 dBA when measured at the adjacent property line (Section 17.66.050, Noise Standards).

City of Yucaipa

City of Yucaipa, General Plan. Exterior noise levels below 60 dBA Ldn or CNEL are generally considered to be acceptable and compatible for residential areas. The City of Yucaipa, General Plan (2004) includes the following policies:

- **Noise Element Goal N-1, Policy A.** Require that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses.
- **Noise Element Goal N-1, Policy B.** Includes the daytime standards for stationary noise sources of 55 dBA Leq and 75 dBA Lmax and nighttime (10:00 p.m. to 7:00 a.m.) standards of 45 dBA Leq and 65 dBA Lmax.

City of Yucaipa, Development Code. The Yucaipa municipal code specifies that residential land uses that are affected by stationary source noise shall not receive noise levels over 55 dBA Ldn or 55 dBA for a cumulative period of more than 30 minutes in any hour (Section 87.0905, Noise). These limits are reduced to 50 dBA for any source that contains a simple tone. Exempt activities include temporary construction, repair, or demolition activities between 7 a.m. and 7 p.m., except on Sundays and holidays.

City of San Bernardino

The City of San Bernardino's municipal code limits construction-related noise to between the hours of 7:00 a.m. and 8:00 p.m. (Section 8.54.070, Disturbances from Construction Activity). The City of San Bernardino only has noise level standards for transportation-related noise and currently does not have noise level standards for operation-related noise.

Unincorporated San Bernardino County

San Bernardino County, General Plan. The San Bernardino County General Plan (2007) includes the following policies:

- **Noise Element Goal N1.** The County will abate and avoid excessive noise exposures through noise mitigation measures incorporated into the design of new noise-generating and new noise-sensitive land uses, while protecting areas within the County where the present noise environment is within acceptable limits.
- **Noise Element Goal N1, Policy N1.3.** When industrial, commercial, or other land uses, including locally regulated noise sources, are proposed for areas containing noise-sensitive land uses, noise levels generated by the proposed use will not exceed the performance standards of the Development Code.
- **Noise Element Goal N2, Policy N2.1.** The County will require appropriate and feasible on-site noise attenuating measures that may include noise walls, enclosure of noise-generating equipment, site planning to locate noise sources away from sensitive receptors, and other comparable features.

San Bernardino County, Development Code. The noise ordinance for unincorporated San Bernardino County in the Development Code (2009) defines residential areas as being "noise-impacted" if it is exposed to exterior noise levels above 55 Ldn. The code specifies 60 dBA Ldn as the standard for new residential development in areas exposed to traffic noise. The noise ordinance also prohibits causing daytime noise over 55 dBA (between 7:00 a.m. and 10:00 p.m.) and nighttime noise over 45 dBA at residential uses if it occurs over a cumulative period of more than 30 minutes in any hour. Construction noise is exempt if the activities occur between 7:00 a.m. and 7:00 p.m. on any day except Sundays and holidays (Section 83.01.080, Noise).

City of Colton

City of Colton, Municipal Code. The Colton Municipal Code includes a zoning performance standard that limits noise between properties to no more than 65 dBA (Section 18.42.040, Noise). No exemption is provided for noise construction activity, although vibration by temporary construction or demolition is allowed (Section 18.42.050, Vibration). Generally loud, unnecessary, and unusual nuisance noise is prohibited if it would disturb the peace or quiet of any residents who may reside in the vicinity (Section 9.16.010, Prohibited-Penalty).

City of Grand Terrace

City of Grand Terrace, General Plan. The City of Grand Terrace General Plan (April 2010) includes:

- **Noise Element Policy 6.3.3.** Consider noise impacts to residential neighborhoods when designating truck routes, freeway improvements, and major circulation corridors.
- **Noise Element Policy 6.1.2.** Minimize the impacts of construction noise on adjacent land uses by limiting the permitted hours of activity.

City of Grand Terrace, Municipal Code. The Grand Terrace Municipal Code includes a noise ordinance that generally limits excessive noise if it disturbs, offends, injures or endangers the peace, quiet, comfort, repose, health or safety of any neighborhood or person in the City of Grand Terrace (Section 8.108.020, Loud, annoying, excessive and unnecessary noises prohibited). Construction noise and vibration is exempted as long as it takes place between 7:00 a.m. and 8:00 p.m. any day except Sundays and holidays (Section 8.108.040, Special activities). Between 10:00 p.m. and 7:00 a.m., nighttime use of heavy-duty construction equipment shall not be within 50 feet of an occupied residence (Section 8.108.050, Prohibited Noise).

City of Calimesa

City of Calimesa, General Plan. The City of Calimesa General Plan (August 2014) defines noise levels under 60 dBA CNEL as being completely compatible with residential use and levels between 60 and 70 dBA CNEL as tentatively compatible. The General Plan also includes the following noise goals and policies:

- **Goal N-1.** Ensure that all land uses are protected from excessive and unwanted noise.
- **Goal N-2.** Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses in Calimesa.
- **Policy N-4.** Encourage noise-tolerant land uses such as commercial or industrial development to locate in areas already committed to land uses that are noise-producing.
- **Policy N-5.** Ensure that noise-sensitive uses do not encroach into areas needed by noise-generating uses.
- **Policy N-7.** Consider the following uses to be sensitive to noise and vibration, and discourage these uses in areas where existing or projected future noise levels would be in excess of 65 dBA CNEL and/or vibration would be more than 0.0787 peak particle velocity (inches per second): schools; hospitals; rest homes; long-term care facilities; mental care facilities; residential uses; libraries; passive recreation uses; and places of worship.
- **Policy N-31.** Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- **Policy N-32.** Require that all construction equipment be kept properly tuned and use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

City of Calimesa, Municipal Code. The City of Calimesa has developed sound level limits in its Noise Ordinance (Section 8.15.040, Sound Level Limits). The ordinance states that single and low-density residential zones shall not be subject to noise levels greater than 50 dBA Leq in the daytime and 40 dBA Leq in the nighttime. It also specifically states that public utility facilities shall be allowed to operate at 50 dBA Leq in any location, continuous over 24 hours, and that electrical transmission lines are subject to these limits at or beyond 6 feet from the utility easement (Section 8.15.040, Sound Level Limits).

The Calimesa Municipal Code (Section 8.15.080, Construction Equipment) includes exemptions from these limits for noise caused by construction activities, provided that the activity occurs between 7:00 a.m. and 7:00 p.m. on weekdays or between 10:00 a.m. and 5:00 p.m. on weekends or holidays. No construction equipment is allowed to cause noise in excess of 75 dBA for more than eight hours during any 24-hour period when measured at a residential property line or more than 78 dBA over 4 hours. No intermittent construction noise is allowed over 84 dBA Leq (1-hour) or over 90 dBA L25 during any 15-minute period is also prohibited.

City of Beaumont

City of Beaumont, General Plan. The City of Beaumont General Plan (March 2007) includes a Health and Safety Element that addresses community noise and identifies 55 dBA as the desirable maximum and 65 dBA as the maximum acceptable exterior noise levels for single-family residential uses. The General Plan also includes:

- **Safety Element Policy 24.** The City of Beaumont will protect public health and welfare by eliminating existing noise problems and by preventing significant degradation of the future acoustic environment.

City of Beaumont, Municipal Code. The noise ordinance for the City of Beaumont (Section 9.02.030, Prohibited Noise in Residential Zones) restricts construction and demolition noise affecting residential uses to occur only between the hours of 6:00 a.m. and 8:00 p.m., although construction and repair of public utilities are exempt from the ordinance (Section 9.02.060, Prohibited Noise-Exemptions).

City of Banning

City of Banning, General Plan. The City of Banning General Plan (2006) includes:

- **Noise Element Policy 1.** The City shall protect noise-sensitive land uses, including residential neighborhoods, schools, hospitals, libraries, churches, resorts and community open space, from potentially significant sources of community noise.

City of Banning, Municipal Code. The City of Banning restricts noise affecting residential uses so that they do not exceed 75 dBA Lmax in the daytime or 65 dBA Lmax in the nighttime (Section 8.44.050, Base Ambient Noise Level; Section 8.44.070, Maximum Residential Noise Levels). The standards also include daytime noise levels not to exceed 60 dBA L25, and nighttime levels not to exceed 50 dBA L25, or during any 15-minute period in an hour. Loud, unusual, and unnecessary noises are also prohibited, including equipment causing noise increases of more than 5 dBA over the ambient and back-up beepers that exceed 75 dBA.

Construction activities may exceed the limits of the City of Banning noise ordinance between the hours of 7:00 a.m. and 6:00 p.m. provided that it does not at any time cause noise greater than 55 dBA L25 for an interval of more than 15 minutes per hour when measured in the interior of the nearest residence or school (Section 8.44.090, Noises Prohibited). The City Building Inspector may permit construction outside of these daytime hours if the official determines that public health and safety would not be impaired by the construction noise.

Unincorporated Riverside County

Riverside County, General Plan. The Riverside County Comprehensive General Plan (2014) includes:

- **Noise Element Policy N.1.1.** Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.
- **Noise Element Policy N.1.3.** Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL: schools, hospitals, rest homes, long-term care facilities, mental care facilities, residential uses, libraries, passive recreation uses, and places of worship. [. . .] an acoustical study may be required in an area of 60 CNEL or greater. Any land use that is exposed to levels higher than 65 CNEL will require noise attenuation measures.
- **Noise Element Policy N.1.4.** Determine if existing land uses will present noise compatibility issues with the Proposed Project by undertaking site surveys.
- **Noise Element Policy N.1.5.** Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.
- **Noise Element Policy N.1.8.** Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines.
- **Noise Element Policy N.3.6.** Discourage projects that are incapable of successfully mitigating excessive noise.

- **Noise Element Policy N.12.1.** Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- **Noise Element Policy N.12.2.** Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- **Noise Element Policy N.12.4.** Require that all construction equipment utilizes noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- **Circulation Element Policy C.3.28.** Reduce transportation noise through proper roadway design and coordination of truck and vehicle routing.

Riverside County Code. The Riverside County noise ordinance (Ordinance 847, effective 2007) includes sound level standards of 55 dB Lmax (7 am to 10 pm) and 45 dB Lmax (10 pm to 7 am) for residential areas and rural communities. The ordinance limits construction within one-quarter of a mile of an occupied residence unless it occurs in the daytime, between the hours of 6:00 a.m. and 6:00 p.m. (June through September) or between the hours of 7:00 a.m. and 6:00 p.m. (October through May). Exceptions to the construction limitation may be made by the Director of Building and Safety.

D.13.3 Environmental Impacts of the Proposed Project

D.13.3.1 Approach to Impact Assessment

The combined maximum (Lmax) and average hourly (Leq) noise levels for construction work sites are predicted by using a national model and construction equipment noise database in the Roadway Construction Noise Model (RCNM) from the Federal Highway Administration (FHWA). Typical work sites would include overlapping or combined use of equipment such as a grader, dozer, and compactor along with trucks. The noise level estimates take into account a reference maximum noise level for each piece of equipment, the quantity of equipment, a usage factor percentage, the distance to receptor, and a ground effect factor. The results are the sum of noise levels that would be experienced by typical receptors at a certain distance, usually 50 feet. Calculations account for the reduction of noise with distance due to geometric divergence and determine the levels for receptors at other specific distances.

Table D.13-4 shows that, aside from helicopters, the loudest equipment would cause intermittent noise at levels of 85 dBA Lmax or lower.

Table D.13-4. Typical Noise Levels for Individual Construction Equipment

Equipment	Typical Lmax (dBA, at 50 feet)	Typical Leq (dBA, at 50 feet)
Drill rig, auger	84	77
Crane	81	73
Backhoe	78	74
Excavator	81	77
Grader	85	81
Compactor	83	76
Dozer	82	78
Dump truck, haul truck	76	73
Truck, crew truck	75	62-71
Helicopter, crew (Bell 500)	est. 95.9 dBA at 100 feet	
Helicopter, for lifting (Kmax)	est. 84 dBA at 250 feet	

Lmax: Maximum noise level from Actual Measured in RCNM (FHWA, 2006).
Leq: Equivalent noise level for one hour incorporating the Acoustical Usage Factor.
Helicopter estimates are for approximately 15 minutes of use in one hour (equivalent to L25 over one hour).
Source: SCE, 2013 (PEA Appendix K).

D.13.3.1.1 Applicant Proposed Measures

SCE proposed no Applicant Proposed Measures (APMs) relevant to noise.

D.13.3.2 Impact Criteria

The level of noise impacts depends on whether the project would increase noise levels above the existing ambient levels by introducing new sources of noise. NEPA does not have specific significance criteria. However, NEPA regulations contain guidance regarding significance analysis. Specifically, consideration of "significance" involves an analysis of both context and intensity (Title 40 Code of Federal Regulations 1508.27). Using the following criteria for the purposes of analysis, the project or an alternative would create potential noise impacts if:

- The Proposed Project would conflict with applicable noise restrictions or standards imposed by regulatory agencies.
- The Proposed Project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.
- Operation of the Proposed Project would result in a substantial permanent increase in ambient noise levels above levels existing without the project at sensitive receptors.
- The Proposed Project would result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project at sensitive receptors.

Given that environmental noise levels vary widely over time, a three dBA change is the minimum change in environmental noise that is perceptible and recognizable by the human ear. Permanent increases in day-night environmental noise levels of more than five dBA (Ldn or CNEL) are considered to be substantial. Intermittent noise sources, such as those typical during construction, are temporary or periodic and normally cease after a short duration. Factors to be considered in determining the level of an adverse impact caused by an intermittent source include: (1) the resulting noise level, (2) the duration and frequency of the noise, (3) the number of people affected, and (4) the land use designation of the affected receptor sites.

D.13.3.3 Impacts and Mitigation Measures

Impacts During Construction and Restoration Activities

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Proposed Project would involve use of heavy equipment such as drill rigs, cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction of foundations for new towers, poles, and shoo-fly structures would require use of a drill rig or large auger at each location. Pile driving equipment could be used for the installation of soldier pile-type retaining walls, though most are expected to be drilled piers. Access and spur roads would require use of graders, compactors, dozers, and trucks. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

SCE's description of the project includes the potential for rock blasting and/or use of explosives for implosive sleeves during construction of foundations and to fuse wire segments, respectively. However, if these construction methods are used, they would create instantaneous or short-term noise.

Construction Noise Disturbances. Intermittently elevated noise levels would occur in the vicinity of substations undergoing modifications, along the linear routes of the new and modified 220 kV transmission and 66 kV subtransmission facilities, along the routes of new telecommunications infrastructure, at staging yards, and at helicopter staging areas including local airports. Aside from the increased noise at project worksites, construction-related truck traffic and worker commutes would increase noise along region-serving roadways, city streets, and ROW access and spur roads. Most activity would occur within the ROW of the linear facilities throughout the corridor.

Noise from equipment and traffic during construction would occur for approximately 36 to 48 months throughout approximately 48 miles of 220 kV corridor. The increased noise levels would be highly variable depending on the proximity of the source to any receptor and the intensity of the construction or restoration activity. Construction noise is made up of intermittent peaks and lower levels of continuous or residual noise from equipment movements or sporadic activity. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels.

All construction noise would diminish over distance and would be reduced by any intervening structures or topography. At any one site, a combination of multiple pieces of equipment may be present. Aggregated peak noise levels of up to about 85 dBA Lmax would occur for locations within 50 feet from the construction without accounting for controls or intervening barriers (SCE, 2013). Certain instances would result in greater levels of noise exposure, with peak noise levels up to 88.2 dBA Lmax occurring where some construction activity and boundaries of staging yards would be as near as 10 to 15 feet from some residences. At 100 feet from work sites, the distance would attenuate the peak levels to about 79 dBA Lmax, and at 200 feet to 73 dBA Lmax. Continuously steady construction noise levels (Leq) would be roughly one to 10 dBA below the Lmax levels.

Table D.13-5 summarizes the noise levels that would intermittently occur near sites of heavy equipment use at various distances, excluding helicopters. These levels show that at distances over 1,400 feet, steady construction noise would be under 55 dBA or under the level that would avoid interfering with outdoor activities (see Table D.13-3). Construction at these distances would tend to fade into daytime background noise levels, except for sites isolated from existing urban or suburban noise. For residential areas, schools, hospitals, and outdoor recreation areas within 1,400 feet, including the Pacific Crest Trail in Segment 6, the resulting noise levels would substantially disturb sensitive receptors during construction activity. Mitigation Measure N-1a (Implement best management practices for construction noise) is recommended as a means of reducing the adverse effects of temporary construction noise.

Table D.13-5. Construction Noise Levels Versus Distance

Distance from Sources (ft)	Typical Lmax (dBA)	Typical Leq (dBA)
50	85.0	83.6
100	79.0	77.5
135	76.4	74.9
200	73.0	71.5
400	66.9	65.5
1,200	57.4	56.0
1,400	56.1	54.6

Note: Combined effects of heavy equipment used during 220 kV and 66 kV installation or access and spur roads construction, excluding helicopters.

Source: SCE, 2013 (PEA Appendix K) at distances calculated by Aspen Environmental Group.

Table D.13-6 summarizes the modeled noise levels for specific locations, including substations and along the linear telecommunications facilities.

Table D.13-6. Construction Noise Levels Modeled for Specific Locations (dBA)

Location	Typical Receptor Distance (ft)	Receptor Jurisdiction	Lmax (dBA)	Leq (dBA)
San Bernardino Substation	875	Redlands	59.5	52.3
Vista Substation	50	Grand Terrace	84.4	83.3
El Casco Substation	950	Calimesa	55.1	49.5
Devers Substation	1,000	Riverside County	58.4	50.3
Etiwanda Substation	50	Rancho Cucamonga	75.0	71.0
Telecommunications Facilities	50	Typical Facilities	77.6	76.8

Source: SCE, 2013 (PEA Appendix K).

Table D.13-7 summarizes the anticipated construction noise levels that would occur at staging areas for the Proposed Project.

Table D.13-7. Construction Staging Area Noise Levels Modeled (dBA)

Location	Typical Receptor Distance (ft)	Receptor Jurisdiction	Lmax (dBA)	Leq (dBA)
Staging Yards (Typical)	50	Any Staging Yard	75.0	65.0
Mountain View No.1 Material and Equipment Staging Area	14	San Bernardino	86.1	76.1
Lugonia Material and Equipment Staging Area	1,094	Redlands	48.2	38.2
Grand Terrace Material and Equipment Staging Area	320	Grand Terrace	58.9	48.9
San Timoteo Material and Equipment Staging Area	11	Riverside County	88.2	78.2
Poultry Material and Equipment Staging Area	52	Riverside County	74.7	64.7
Beaumont No. 1 Material and Equipment Staging Area	374	Beaumont	57.5	47.5
Beaumont No. 2 Material and Equipment Staging Area	253	Beaumont	60.9	50.9
Matich Yard	50	Banning	75	65
Hathaway No. 1 Material and Equipment Staging Area	52	Banning	74.7	64.7
Hathaway No. 2 Material and Equipment Staging Area	54	Banning	74.3	64.3
Devers Material and Equipment Staging Area	2,000	Riverside County	25.5	15.5

Source: SCE, 2013 (PEA Appendix K).

Helicopters. The range of proposed helicopter activities for the construction of the transmission lines could include delivery of equipment and materials from staging yards to structure sites, structure placement, hardware installation, and conductor and/or optical ground wire (OPGW) stringing operations. Helicopter use could occur at any location in the Proposed Project area, including staging areas, ground locations in close proximity to conductor and/or OPGW pulling, tensioning, and splice sites, including locations in previously disturbed areas near construction sites. In addition, helicopters may need to land within SCE ROWs, which could include landing on access or spur roads. Refueling could occur in the staging areas, ROWs or access or spur roads, or at local airports (SCE, 2013).

Helicopter operations would likely cause annoyance to residences in the vicinity. These would be temporary impacts, as helicopters string conductors or deliver loads and then leave an area. SCE's Preliminary Helicopter Use Plan appears in this EIS at the end of Section D.16 (Transportation and Traffic). The final Helicopter Use Plan that must be created with SCE's selected construction contractor. The Helicopter Use Plan is described in Mitigation Measure T-7a (Prepare and implement a final helicopter use plan), in Section D.16.3.3 (Transportation and Traffic, Impacts and Mitigation Measures).

SCE identifies two specific helicopter models that typically would be used to carry loads, the Bell 500 (MD 500) and the Kaman Kmax. Each helicopter could be operated as near as 250 feet from the ground and

residences. Residences and other locations along the project corridor would experience between 84 and 88 dBA Leq, depending on the helicopter type (SCE, 2013). Because hovering would generally occur for 15-minute periods, the impact could be up to 88 dBA L25 in any given hour of helicopter operations as experienced by receptors within 250 feet of the hovering. Mitigation Measure N-1b (Implement a helicopter noise control strategy) is recommended.

Project components and activities would occur in the vicinity of an existing heliport (Loma Linda University Medical Center) and public airports in San Bernardino, Redlands, and Banning. There are no private airstrips in the vicinity of the project. The Proposed Project would not introduce people to excessive noise from these public airports. Project-related helicopter operations would temporarily add to existing noise levels near local airports because project-related landings and take-offs would occasionally occur at public airports, where helicopters and support equipment may be based (SCE, 2013). Because project-related helicopter operations would occur only occasionally at local airports, the Proposed Project would not substantially change the levels of noise from aircraft in the vicinity of existing public airports or private airstrips.

Construction Noise Compliance with Local Ordinances. Noise ordinances usually provide exemptions for construction activities occurring during normal daytime, weekday hours. In the cities of Calimesa and Banning, the local noise ordinances contain specific noise level standards for construction activity. In the City of Calimesa, SCE proposes to coordinate with the city to minimize any potential conflicts with the local noise standards. In all locations, SCE proposes to consult with relevant jurisdictions before commencing work within those localities for time-sensitive work or nighttime work outside of the time periods allowed by the local jurisdiction for construction. For example, it may be necessary to work during the nighttime or outside normal work hours to facilitate major crossings, or when loads on the lines are reduced.

Any location near heavy equipment used during construction of facilities for the 220 kV and 66 kV components or during access and spur roads construction could occasionally experience construction noise at levels shown in Table D.13-5. A combined level of 83.6 dBA Leq at 50 feet and 85.0 dBA Lmax at 50 feet would occur. Other than the cities of Calimesa and Banning, none of the other jurisdictions along the corridor has specific construction noise level standards. The City of Calimesa's standard of 78 dBA over 4 hours would be exceeded at any distance less than 95 feet from the edge of construction activity.

Helicopter noise could be up to 88 dBA L25 in any given hour of helicopter operations as experienced by receptors within 250 feet of the hovering. Locations in Calimesa within 250 feet would experience helicopter noise exceeding the 90 dBA L25 standard. Because most structures that house receiving land uses would not sufficiently insulate occupants from helicopter noise (20 dBA typical exterior-to-interior reduction), helicopter noise at 88 dBA on the exterior would translate to 68 dBA for interiors, which would also exceed the City of Banning's interior standard of 55 dBA L25 for construction.

In its PEA (Section 4.12.2.3), SCE states that it would comply with local noise ordinances to the extent practicable. In addition, SCE states that where work may need to occur outside of local ordinance timeframes, SCE would coordinate with local authorities to minimize conflicts with the applicable ordinances. The discussion above demonstrates that violations of local standards could occur and work could be needed outside of the time periods allowed. In order to minimize the impact of the project conflicting with local noise ordinances, mitigation has been developed to avoid potential violations during construction or to minimize the effect of unavoidable violations. With implementation of the recommended mitigation measures, the construction activities would either comply with local noise ordinances, or SCE would coordinate with local authorities to implement controls and reduce noise impacts during periods of ordinance violation, if there is a need to work outside of normal daytime, weekday hours. Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) would reduce the potential for violations of the local standards by requiring feasible noise controls.

Summary for Construction Noise. Receptors would be intermittently exposed to noise levels that could disturb sensitive receptors and interfere with outdoor activities in areas located within 1,400 feet of active construction. Additionally, the noise of helicopter overflights and work during the nighttime or outside normal work hours would not only exceed ambient levels but also would be likely to create violations of local standards. To reduce the adverse effects of temporary construction noise, the following mitigation measures are proposed.

Mitigation Measures for Impact N-1

N-1a **Implement best management practices for construction noise.** SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors and to avoid possible violations of local rules, standards, and ordinances during construction:

- Construction noise shall be confined to daytime, weekday hours (7:00 a.m. to 6:00 p.m.) or an alternative schedule developed by SCE based on its coordination with the local jurisdiction.
- Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Stationary noise sources (e.g., generators, pumps) at staging areas and on the ROW within 1,4000 feet of sensitive receptors shall be shielded at the source to the extent feasible. Examples of feasible shielding may include an enclosure, temporary sound walls, or acoustic blankets. For best performance, sound walls or acoustic blankets shall have a height of no less than 8 feet, a Sound Transmission Class (STC) of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts.
- Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible.
- Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, its engine should be shut off.

N-1b **Implement a helicopter noise control strategy.** As part of the final Helicopter Use Plan, SCE shall include a helicopter noise control strategy that identifies the established helicopter flight corridors and minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground. The noise control strategy shall prohibit helicopter hovering (greater than 15 minutes) within 250 feet of residences in any vertical or horizontal direction.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities along the linear routes of the new and modified 220 kV transmission and 66 kV subtransmission facilities, along the routes of new telecommunications infrastructure, and at staging yards would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit. The highest levels of vibration would be caused by a typical large bulldozer or by caisson drilling with an auger for the concrete footings of structures.

The Proposed Project may include the use of explosives or blasting that could cause ground-borne vibration. Impact pile driving equipment could be also used for the installation of soldier pile-type

retaining walls, though most are expected to be drilled piers. These activities would not be expected to be at levels capable of causing structural damage to buildings in the immediate vicinity. Other construction activities would not involve sources likely to cause any structural damage outside of the work areas.

Vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, impact pile driving for installing retaining walls, and drilling or rock blasting for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. The impact results in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site. Construction of new towers or poles may occur as near as 40 feet from the nearest residences (SCE, 2013). Vibration levels would be perceptible at this distance from the source.

Installing towers, poles, or underground duct banks and conduit could cause vibration levels that could cause some persons to become annoyed, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. Project-related vibration would not occur at levels that could cause any structural damage. Impacts from vibrations would be temporary (e.g., no more than two or three days at each site) and localized and, therefore, would not be excessive.

Impacts During Operations and Maintenance

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

The Proposed Project would introduce long-term sources of noise related to the audible corona effect of the 220 kV lines, which occurs with normal and routine operation. Project transmission line corona noise would occur in the same corridor as the existing 220 kV system, where the typical level with wet conductors is about 40 dBA, and Proposed Project noise would be of the same nature. The Proposed Project would not introduce any new notable noise source at project substations, subtransmission lines, and telecommunications facilities, and the 66 kV subtransmission lines would not be a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions.

The addition of the upgraded 220 kV transmission lines would change the corona noise levels along all portions of the corridor. Along the corridor, except in Segment 2, SCE expects the upgraded 220 kV lines to cause a maximum of 36.9 dBA Leq at the edge of the ROW under heavy rain conditions and 33.4 dBA during high humidity or normal rain; in Segment 2, the maximum would be 34.9 dBA Leq under heavy rain conditions and 31.4 dBA during high humidity or normal rain (SCE, 2013; SCE, 2014a). During a heavy rain, the sound of rain on surfaces would generally be greater than the worst-case corona noise.

The highest corona noise levels would comply with all local ordinances including the City of Calimesa requirement that public utility facilities cause no more than 50 dBA Leq continuous over 24 hours. Corona noise levels could decrease along the edges of the existing 220 kV transmission lines as a result of the Proposed Project for the locations where the proposed reconfiguration of the transmission structures causes lines to be further from receptors than in the existing conditions.

Table D.13-8 shows the existing calculated project plus existing worst-case noise levels expected with the corona noise from the Proposed Project along the corridor. Corona noise during high humidity, fog, or rain would exceed ambient fair weather corona noise levels, with the greatest potential for impact during nighttime hours when ambient noise levels are lowest. During heavy rain and the most-quiet nighttime hours, the increase over short-term minimum noise levels (Lmin) could be as great as 10 dBA (e.g., monitoring location LT-1), which would be a substantial difference of more than five dBA. However, the difference would not be substantial over a 24-hour period when daytime ambient levels are higher. For all locations, permanent day-night or 24-hour noise levels (Ldn or CNEL) would not substantially increase due to corona noise for any segment of the Proposed Project.

Table D.13-8. Proposed Project Corona Noise Levels

Location	Jurisdiction	SCE Monitor	Observed During 24-hr Period	Existing (dBA)	Project plus Existing (dBA)
Segment 1					
Nelson Street	Loma Linda	LT-2	Leq (min.)	40.7	42.2
		LT-2	Leq (max.)	55.8	55.9
		LT-2	Ldn	54.3	54.7
Segment 2					
Prado Lane	Colton	LT-1	Leq (min.)	25.2	35.3
		LT-1	Leq (max.)	52.5	52.6
		LT-1	Ldn	46.7	47.8
Segment 3					
No 24-hour measurements in Segment 3		—	—	—	—
Segment 4					
O'Grady Court, near El Casco	Beaumont	LT-3	Leq (min.)	37.9	40.4
		LT-3	Leq (max.)	58.3	58.3
		LT-3	Ldn	52.2	52.7
Cedar View Drive, near Beaumont Ave	Beaumont	LT-4	Leq (min.)	43.8	44.6
		LT-4	Leq (max.)	51.8	51.9
		LT-4	Ldn	53.4	53.8
Segment 5					
No 24-hour measurements in Segment 5		—	—	—	—
Segment 6					
San Pierre Road, Whitewater	Riverside County	LT-5	Leq (min.)	45.3	45.9
		LT-5	Leq (max.)	63.8	63.8
		LT-5	Ldn	60.7	60.8

Leq: Equivalent noise level of all of the time-varying sound energy during one hour (observed by SCE during 24-hr measurement).
Ldn: day-night level calculated from 24 hours of equivalent sound level data with a 10 decibel penalty between 10:00 p.m. and 7:00 a.m.
Source: SCE, 2013 (PEA Table 4.12-3), with Project (during heavy rain) plus Existing calculated by Aspen Environmental Group.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

SCE proposes to accomplish normal and routine operation of the lines through SCE control systems based remotely and manually along the corridors and at substations, as required. As in the existing conditions, SCE would inspect the transmission, subtransmission, telecommunications, and distribution overhead facilities at least once per year via ground and/or aerial observation. Maintenance would occur as needed and could include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and structures, tree trimming, brush and weed control, and access

road maintenance. Each of these activities normally requires daytime use of crew trucks with occasional short-term assistance via helicopter (SCE, 2013). The operation-related activities would not be notably different from that caused by inspection and maintenance of the existing facilities, and the noise from these temporary but recurring activities would not be notably different. The occasional nature of such continued maintenance activities ensures that permanent ambient noise levels would not be adversely affected.

D.13.3.4 Impacts of Connected Actions

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Desert Center Area. The Palen Solar Power Project site is in the Desert Center area. The environmental analysis for this project concluded that during construction any increase in noise levels at the nearest off-site residences would be temporary, and would not generate continuously high noise levels, although occasional single-event disturbances from grading, trenching, and construction are possible. Mitigation applied to the project for temporary construction noise impacts included:

- Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.
- The project owner shall submit to the CPM for review and approval a noise control program.
- Project will design and implement noise mitigation measures that include noise restrictions.
- If a traditional high-pressure steam blow process is used, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 89 dBA measured at a distance of 100 feet.

The Desert Harvest Solar Project also is the Desert Center area. The environmental analysis for this solar project concluded that construction of the facility would involve a few periods when construction activity would be within 6,500 feet of the closest occupied residence. This project was also subject to the National Park Service performance standard for noise mitigation, which is to limit noise levels at the Park boundary to 35 dBA. The analysis found construction would meet this stated goal. Mitigation for temporary construction noise impacts included:

- Limiting construction hours near occupied residences.
- Generate no net increase in noise within Joshua Tree National Park. If noise as a result of on-site project construction exceeds 35 dBA Leq (1-hour) within the Park boundary, a noise attenuation barrier is to be erected around the project construction activities.

Other projects identified as connected actions in the Desert Center area include the development of solar PV projects on 2,400 acres. The specific locations of these solar developments are unknown. Because each regional and local jurisdiction defines its own noise regulations and standards, any specifics regarding applicable noise regulations also are unknown for these projects. However, typical noise levels during construction and expected mitigation measures for these projects would be similar to those described for other solar projects, including the Desert Harvest project.

Blythe Area. Connected actions in the Blythe area include 3 individual solar PV projects requiring 4,200 acres. The precise locations of these solar projects are unknown. Applicable noise regulations thus also are unknown, but likely would be those of Riverside County. Typical noise levels during construction and expected mitigation measures for these connected action projects would be similar to those described for solar projects elsewhere in the desert.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Common to all Areas. Construction and site restoration activities may result in minor amounts of groundborne vibration. Impacts from construction vibration would be temporary and localized, because groundborne vibration would be infrequent and it attenuates rapidly as distance from the source increases. Therefore, vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities, but persons and buildings further than 100-300 feet away from construction activity typically would not be impacted by construction vibration. Due to typical setback requirements, the primary source of possible construction vibration at the perimeter of a solar PV facility is associated primarily with fence and landscape installation. Equipment used during these construction activities would not produce adverse vibration levels. Therefore, it is expected that construction-related vibration from the project would not occur at levels that could disturb people or cause any structural damage.

Impact N-3: Operational noise levels would increase

Common to all Areas. Typical noise sources associated with solar facility operations and maintenance include employee vehicles accessing the site, power inverters, tracking motors on individual panels (if installed), and maintenance of the panels, such as cleaning and repair. Based on a review of noise assessments prepared for solar development projects in Southern California, a typical power inverter generates 66 dBA Leq measured at a distance of 50 feet without an enclosure. The tracking motors that tilt an array of panels typically generate 38 dBA Leq at 50 feet. Maintenance, panel washing, and cleaning of the facility generate approximately 76 dBA Leq at 50 feet. However, this noise would be periodic and temporary. Because solar facilities operations and maintenance require a small number of employees, increased traffic noise associated with employees would be negligible. Noise from operational activities is primarily limited to daytime hours and would occur within the project site, with little noise spillover into adjacent areas. Therefore, operation of the connected action solar PV project is not expected to result in adverse permanent increases to ambient noise levels at nearby receptors. For example, for the Palen Solar Power Project the environmental analysis concluded that daytime noise level increases would not exceed 3 dBA above the ambient noise level at the nearest sensitive receptor. In general, a difference of 3 dBA or less is not a perceptible change in environmental noise.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

The potential for adverse increases in ambient noise levels from routine inspection and maintenance activities of the connected action projects is low, as discussed above for Impact N-3. The analysis presented for Impact N-3 applies to Impact N-4.

D.13.4 Environmental Impacts of Project Alternatives

Three alternatives are considered in this section; all of these alternatives would be located within the existing WOD ROW. The No Action Alternative is evaluated in Section D.13.5. Alternatives are described in detail in Appendix 5 (Alternatives Screening Report) and are summarized in Section C.

Noise conditions within the ROW are described by segment in Section D.13.1.2 above; the description of the environmental setting would apply equally to the alternatives.

D.13.4.1 Tower Relocation Alternative

The Tower Relocation Alternative would locate certain transmission structures in Segments 4, 5, and 6 farther from existing homes than would be the case under the Proposed Project.

Four impacts related to noise were identified for the Proposed Project. These impacts also would apply to the Tower Relocation Alternative, which overall would be the same as the Proposed Project, with the exception of the relocated transmission towers that are described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.13.3.3, except where otherwise noted.

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Proposed Project would involve use of heavy equipment such as drill rigs, cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction of foundations for new towers, poles, and shoo-fly structures would require use of a drill rig or large auger at each location. Access and spur roads would require use of graders, compactors, dozers, and trucks. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

Noise from equipment and traffic during construction would occur throughout approximately 48 miles of 220 kV corridor. Because of construction phasing, noise at any one work location would be periodic rather than constant for the duration of the construction period. The increased noise levels would be highly variable depending on the proximity of the source to any receptor and the intensity of the construction or restoration activity. Construction noise is made up of intermittent peaks and lower levels of continuous or residual noise from equipment movements or sporadic activity. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels.

All construction noise would diminish over distance and would be reduced by any intervening structures or topography. At any one site, a combination of multiple pieces of equipment may be present. Aggregated peak noise levels of up to about 85 dBA Lmax would occur for locations within 50 feet from the construction without accounting for controls or intervening barriers (SCE, 2013). Certain instances would result in greater levels of noise exposure, with peak noise levels up to 88.2 dBA Lmax occurring where some construction activity and boundaries of staging yards would be as near as 10 to 15 feet from some residences. At 100 feet from work sites, the distance would attenuate the peak levels to about 79 dBA Lmax, and at 200 feet to 73 dBA Lmax. Continuously steady construction noise levels (Leq) would be roughly one to 10 dBA below the Lmax levels.

Receptors would be intermittently exposed to noise levels that could disturb sensitive receptors and interfere with outdoor activities in areas located within 1,400 feet of active construction. Additionally, the noise of helicopter overflights and work during the nighttime or outside normal work hours would not only exceed ambient levels but also would be likely to create violations of local standards.

The relocated towers would be moved approximately 50 feet farther from the southern edge of the ROW. The adjustment to the location of these towers would reduce the severity of the adverse noise effect for the nearest sensitive receptors, because the construction would occur further from residences. The level

of construction noise attenuates with increased distance from the source. Noise levels decrease by approximately 6 dBA with each doubling of distance from the source. For the relocated towers in Segments 4, 5, and 6, noise levels would decrease at the nearest sensitive receptors proportionally. These decreases in construction noise levels would reduce the severity of this adverse effect for noise. However, noise levels for construction of the relocated towers would remain above 55 dBA or above the level that would avoid interfering with outdoor activities. During the construction timeframe for the relocated towers, ambient noise levels would be increased by more than 5 dBA Leq, which represents a substantial adverse effect. Although this alternative would decrease noise levels for several sensitive receptors, the extended construction timeframe for this alternative (up to one year longer than the Proposed Project) would increase the duration of this adverse effect.

Noise from equipment and traffic during construction of the Tower Relocation Alternative would occur for approximately 36 to 60 months throughout approximately 48 miles of 220 kV corridor, which would be up to one year longer than construction noise for the Proposed Project. This extended construction timeframe would increase the duration of this adverse effect.

Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) are a means of reducing the adverse effects of temporary construction noise.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit. The highest levels of vibration would be caused by a typical large bulldozer or by caisson drilling with an auger for the concrete footings of structures.

Vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, impact pile driving for installing retaining walls, and drilling or rock blasting for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. The impact results in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site.

Installing towers, poles, or underground duct banks and conduit could cause vibration levels that could cause some persons to become annoyed, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. Project-related vibration would not occur at levels that could cause any structural damage. Impacts from vibrations would be temporary (e.g., no more than two or three days at each site) and localized and, therefore, would not be excessive.

As with the Proposed Project, vibration from construction equipment and activities in the Tower Relocation Alternative would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, and drilling for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. This adverse effect would

result in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site.

The 50-foot adjustment to the location of these towers would reduce the severity of adverse groundborne vibration due to construction of those towers for the nearest sensitive receptors. In the Proposed Project, construction of new towers or poles may occur as near as 40 feet from the nearest residences. Vibration levels would be perceptible at this distance from the source. Installing towers, poles, or underground duct banks and conduit could cause vibration levels that could annoy some people, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. The Tower Relocation Alternative would ensure that sensitive receptors near to the relocated towers are not adversely affected by groundborne vibration by moving construction activity more than 50 feet away from the nearest sensitive receptors. However, even with the relocation of several towers farther away from the nearest sensitive receptors, the use of heavy construction equipment and temporary disturbance activities (such as during grading or for installing retaining walls) would remain an adverse effect for locations closer than 150 feet to sensitive receptors.

Construction-related vibration in this alternative would not occur at levels that would cause any structural damage. Adverse effects from vibrations would be temporary and localized and, therefore, would not be excessive.

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

The Proposed Project would introduce long-term sources of noise related to the audible corona effect of the 220 kV lines, which occurs with normal and routine operation. Project transmission line corona noise would occur in the same corridor as the existing 220 kV system, where the typical level with wet conductors is about 40 dBA, and Proposed Project noise would be of the same nature. The Proposed Project would not introduce any new notable noise source at project substations, subtransmission lines, and telecommunications facilities, and the 66 kV subtransmission lines would not be a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions.

The addition of the upgraded 220 kV transmission lines would change the corona noise levels along all portions of the corridor. Along the corridor, except in Segment 2, SCE expects the upgraded 220 kV lines to cause a maximum of 36.9 dBA Leq at the edge of the ROW under heavy rain conditions and 33.4 dBA during high humidity or normal rain; in Segment 2, the maximum would be 34.9 dBA Leq under heavy rain conditions and 31.4 dBA during high humidity or normal rain (SCE, 2013; SCE, 2014a). During a heavy rain, the sound of rain on surfaces would generally be greater than the worst-case corona noise.

The increased distance from the relocated towers to the nearest residences would reduce the severity of the operational adverse noise effect due to corona noise. The level of corona noise attenuates with increased distance from the source. Corona noise levels would decrease along the edges of the existing 220 kV transmission lines as a result of this alternative for the locations where the reconfiguration of the transmission structures causes lines to be further from receptors than in the existing conditions.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

SCE proposes to accomplish normal and routine operation of the lines through SCE control systems based remotely and manually along the corridors and at substations, as required. As in the existing conditions, SCE would inspect the transmission, subtransmission, telecommunications, and distribution overhead facilities at least once per year via ground and/or aerial observation. Maintenance would occur as needed and could include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and structures, tree trimming, brush and weed control, and access road maintenance. Each of these activities normally requires daytime use of crew trucks with occasional short-term assistance via helicopter (SCE, 2013). The operation-related activities would not be notably different from that caused by inspection and maintenance of the existing facilities, and the noise from these temporary but recurring activities would not be notably different. The occasional nature of such continued maintenance activities ensures that permanent ambient noise levels would not be adversely affected.

The adjustment to the location of particular towers under the Tower Relocation Alternative would not substantially alter operational noise levels from periodic inspection and maintenance activities compared to the Proposed Project.

D.13.4.2 Iowa Street 66 kV Underground Alternative

The Iowa Street 66 kV Underground Alternative would place a 1,600-foot segment of subtransmission line underground, rather than overhead.

Four impacts were identified under the Proposed Project for noise. These impacts also would apply to the Iowa Street 66 kV Underground Alternative, which overall would be the same as the Proposed Project, with the exception of the underground portion of the subtransmission line that is described above and in Appendix 5. The full text of all mitigation measures referenced in this section is presented in Section D.13.3.3, except where otherwise noted.

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Iowa Street 66 kV Underground Alternative would involve use of heavy equipment such cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

Construction of this underground segment in Iowa Street would increase the severity of the adverse noise effect for the nearest sensitive receptors to this portion of the project as compared to the Proposed Project. For the underground subtransmission line, noise levels would increase at the nearest sensitive receptors due to the increased ground disturbance, including trenching. During the construction timeframe for the underground subtransmission line, ambient noise levels would be increased by more than 5 dBA Leq, which represents a substantial adverse effect. Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) are recommended as a means of reducing the adverse effects of temporary construction noise.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit.

The same as in the Proposed Project, vibration from construction equipment and activities in the Iowa Street 66 kV Underground Alternative would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces, and drilling for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. This adverse effect would result in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Construction-related vibration in this alternative would not occur at levels that would cause any structural damage. Adverse effects from vibrations would be temporary and localized and, therefore, would not be excessive.

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

An overhead 66 kV subtransmission line is not a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions. This alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. For receptors nearest to the underground portion of the subtransmission line, any corona noise would be eliminated because the conductors would be entirely buried for that 1,600-foot segment.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

This alternative would place a 1,600-foot segment of 66 kV subtransmission line underground instead of on overhead poles. Given the developed nature of Iowa Street, installation of this short underground segment would not substantially alter operational noise resulting from periodic inspection and maintenance activities compared to the Proposed Project.

D.13.4.3 Phased Build Alternative

The Phased Build Alternative would retain existing double-circuit 220 kV transmission structures to the extent feasible, remove single-circuit structures, add new double-circuit 220 kV structures, and string all structures with higher-capacity conductors.

Four impacts were identified under the Proposed Project for noise. These impacts also would apply to the Phased Build Alternative, which would be located in the same corridor as the Proposed Project and would involve similar although less extensive construction activities. The full text of all mitigation measures referenced in this section is presented in Section D.13.3.3, except where otherwise noted.

Impact N-1: Construction noise could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances

Construction of the Proposed Project would involve use of heavy equipment such as drill rigs, cranes, trucks, excavators, backhoes, and smaller equipment potentially including compressors, generators, and welders. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction of foundations for new towers, poles, and shoo-fly structures would

require use of a drill rig or large auger at each location. Pile driving equipment could be used for the installation of soldier pile-type retaining walls, though most are expected to be drilled piers. Access and spur roads would require use of graders, compactors, dozers, and trucks. Construction-related traffic noise on local streets would be from heavy-duty and medium-duty trucks for transport of materials, including steel, concrete, water, debris, and excavation spoils, and for transport of equipment; light-duty vehicles would carry commuting workers and crews.

SCE's description of the project includes the potential for rock blasting and/or use of explosives for implosive sleeves during construction of foundations and to fuse wire segments, respectively. However, if these construction methods are used, they would create instantaneous or short-term noise.

Construction Noise Disturbances. Intermittently elevated noise levels would occur in the vicinity of substations undergoing modifications, along the linear routes of the new and modified 220 kV transmission and 66 kV subtransmission facilities, along the routes of new telecommunications infrastructure, at staging yards, and at helicopter staging areas including local airports. Aside from the increased noise at project worksites, construction-related truck traffic and worker commutes would increase noise along region-serving roadways, city streets, and ROW access and spur roads. Most activity would occur within the ROW of the linear facilities throughout the corridor.

Noise from equipment and traffic during construction would occur for approximately 36 to 48 months throughout approximately 48 miles of 220 kV corridor. The increased noise levels would be highly variable depending on the proximity of the source to any receptor and the intensity of the construction or restoration activity. Construction noise is made up of intermittent peaks and lower levels of continuous or residual noise from equipment movements or sporadic activity. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels.

All construction noise would diminish over distance and would be reduced by any intervening structures or topography. At any one site, a combination of multiple pieces of equipment may be present. Aggregated peak noise levels of up to about 85 dBA Lmax would occur for locations within 50 feet from the construction without accounting for controls or intervening barriers (SCE, 2013). Certain instances would result in greater levels of noise exposure, with peak noise levels up to 88.2 dBA Lmax occurring where some construction activity and boundaries of staging yards would be as near as 10 to 15 feet from some residences. At 100 feet from work sites, the distance would attenuate the peak levels to about 79 dBA Lmax, and at 200 feet to 73 dBA Lmax. Continuously steady construction noise levels (Leq) would be roughly one to 10 dBA below the Lmax levels.

At distances over 1,400 feet, steady construction noise would be under 55 dBA or under the level that would avoid interfering with outdoor activities. Construction at these distances would tend to fade into daytime background noise levels, except for sites isolated from existing urban or suburban noise. For residential areas, schools, hospitals, and outdoor recreation areas within 1,400 feet, including the Pacific Crest Trail in Segment 6, the resulting noise levels would substantially disturb sensitive receptors during construction activity.

The range of proposed helicopter activities for the construction of the transmission lines could include delivery of equipment and materials from staging yards to structure sites, structure placement, hardware installation, and conductor and/or optical ground wire (OPGW) stringing operations. Helicopter use could occur at any location in the Proposed Project area, including staging areas, ground locations in close proximity to conductor and/or OPGW pulling, tensioning, and splice sites, including locations in previously disturbed areas near construction sites. In addition, helicopters may need to land within SCE ROWs, which

could include landing on access or spur roads. Refueling could occur in the staging areas, ROWs or access or spur roads, or at local airports (SCE, 2013).

Helicopter operations would likely cause annoyance to residences in the vicinity. These would be temporary impacts, as helicopters string conductors or deliver loads and then leave an area. Project components and activities would occur in the vicinity of an existing heliport (Loma Linda University Medical Center) and public airports in San Bernardino, Redlands, and Banning. There are no private airstrips in the vicinity of the project. Project-related helicopter operations would temporarily add to existing noise levels near local airports because project-related landings and take-offs would occasionally occur at public airports, where helicopters and support equipment may be based (SCE, 2013). Because project-related helicopter operations would occur only occasionally at local airports, the activity would not substantially change the levels of noise from aircraft in the vicinity of existing public airports or private airstrips.

The Phased Build Alternative would require similar noise-generating activities as the Proposed Project. The same as for the Proposed Project, construction of the Phased Build Alternative would involve the use of heavy equipment. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Most construction activity would occur within the ROW of the linear facilities throughout the corridor.

Structures in the Phased Build Alternative would be located further from the edge of the ROW compared to the Proposed Project. In these locations, the severity of the substantial adverse noise effect for the nearest sensitive receptors would be reduced. The level of construction noise attenuates with increased distance from the source. For the new and existing structures that would be further from the edge of the ROW than the Proposed Project structures that they would be replacing, noise levels would decrease at the nearest sensitive receptors proportionally. These decreases in construction noise levels would reduce the severity of this adverse effect for noise. However, noise levels for construction of the new structures in this alternative would remain above 55 dBA or above the level that would avoid interfering with outdoor activities. During the construction timeframe for this alternative, ambient noise levels would be increased by more than 5 dBA Leq, which represents a substantial adverse effect. This alternative would decrease noise levels for several sensitive receptors, and would decrease overall noise levels due to the reduction in construction activity.

For residential areas, schools, hospitals, and outdoor recreation areas within 1,400 feet, the resulting noise levels would substantially disturb sensitive receptors during construction activity. Additionally, the noise of helicopter overflights and work during the nighttime or outside normal work hours would not only exceed ambient levels but also would be likely to create violations of local standards. Mitigation Measures N-1a (Implement best management practices for construction noise) and N-1b (Implement a helicopter noise control strategy) are recommended as a means of reducing the adverse effects of temporary construction noise.

Impact N-2: Construction activity would temporarily cause groundborne vibration

Construction and restoration activities may result in some minor amounts of ground-borne vibration; however, ground-borne vibration attenuates rapidly as distance from the source increases. Project activities would create vibration through the use of equipment such as excavators, dozers, and trucks and a drill rig or auger truck for installing the foundations of towers and poles or for underground duct banks and conduit. The highest levels of vibration would be caused by a typical large bulldozer or by caisson drilling with an auger for the concrete footings of structures.

Vibration from construction equipment and activities would be perceptible to people in the immediate vicinity of construction activities. Use of a large bulldozer or other heavy equipment on uneven surfaces,

impact pile driving for installing retaining walls, and drilling or rock blasting for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity. The impact results in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site.

Installing towers could cause vibration levels that could cause some persons to become annoyed, and this would temporarily impact persons in buildings within about 50 feet of construction equipment. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. Persons in buildings further than 150 feet away from construction activity would not be impacted by construction vibration. Project-related vibration would not occur at levels that could cause any structural damage. Impacts from vibrations would be temporary (e.g., no more than two or three days at each site) and localized and, therefore, would not be excessive.

As for the Proposed Project, vibration from construction equipment and activities in the Phased Build Alternative would be perceptible to people in the immediate vicinity of construction activities. This adverse effect would be slightly reduced in comparison with the Proposed Project, due to the reduced amount of construction required.

Like the Tower Relocation Alternative, some structures in this alternative would be located further from the edge of the ROW compared to the Proposed Project structures. In these locations, the severity of adverse groundborne vibration due to construction of those towers for the nearest sensitive receptors would be reduced.

The Phased Build Alternative would ensure that sensitive receptors near to new structures are not adversely affected by groundborne vibration by moving construction activity more than 50 feet away from the nearest sensitive receptors. Installing retaining walls using pile drivers or rock blasting for foundations would temporarily impact persons in buildings within about 150 feet of the installation. However, even with the reduced construction activity and the increased distance between new structures and the edge of the ROW, the use of heavy construction equipment and temporary disturbance activities (such as during grading or for installing retaining walls) would remain an adverse effect for locations closer than 150 feet to sensitive receptors. Construction-related vibration in this alternative would not occur at levels that would cause any structural damage. Adverse effects from vibrations would be temporary and localized and, therefore, would not be excessive.

Impact N-3: Operational noise levels would increase due to corona noise from operation of the transmission lines and other project components

The WOD Upgrade project would introduce long-term sources of noise related to the audible corona effect of the 220 kV lines, which occurs with normal and routine operation. Project transmission line corona noise would occur in the same corridor as the existing 220 kV system, where the typical level with wet conductors is about 40 dBA, and Proposed Project noise would be of the same nature. The project would not introduce any new notable noise source at project substations, subtransmission lines, and telecommunications facilities, and the 66 kV subtransmission lines would not be a notable source of corona noise because at the lower voltages of subtransmission, the corona effect would not create enough noise to be audible even in quiet background conditions.

The addition of the upgraded 220 kV transmission lines would change the corona noise levels along all portions of the corridor. Along the corridor, except in Segment 2, SCE expects the upgraded 220 kV lines to cause a maximum of 36.9 dBA Leq at the edge of the ROW under heavy rain conditions and 33.4 dBA

during high humidity or normal rain; in Segment 2, the maximum would be 34.9 dBA Leq under heavy rain conditions and 31.4 dBA during high humidity or normal rain (SCE, 2013; SCE, 2014a). During a heavy rain, the sound of rain on surfaces would generally be greater than the worst-case corona noise.

The highest corona noise levels would comply with all local ordinances including the City of Calimesa requirement that public utility facilities cause no more than 50 dBA Leq continuous over 24 hours. Corona noise levels could decrease along the edges of the existing 220 kV transmission lines where the proposed reconfiguration of the transmission structures causes lines to be further from receptors than in the existing conditions.

Corona noise during high humidity, fog, or rain would exceed ambient fair weather corona noise levels, with the greatest potential for impact during nighttime hours when ambient noise levels are lowest. During heavy rain and the most-quiet nighttime hours, the increase over short-term minimum noise levels (Lmin) could be as great as 10 dBA, which would be a substantial difference of more than five dBA. However, the difference would not be substantial over a 24-hour period when daytime ambient levels are higher. For all locations, permanent day-night or 24-hour noise levels (Ldn or CNEL) would not substantially increase due to corona noise for any segment of the Proposed Project.

The potential for corona discharges with the Phased Build Alternative are likely greater than those expected with the Proposed Project due to the conductor surface gradient (see Section D.21, Electrical Interference and Safety), but the conductors as a source of audible corona noise would be further from the edge of the ROW under the Phased Build Alternative. Like the Tower Relocation Alternative, some structures in this alternative would be located further from the edge of the ROW compared to the Proposed Project. In these locations, the severity of the operational adverse noise effect due to corona noise for the nearest sensitive receptors would be reduced. For sensitive receptors nearest to the new and existing structures in this alternative, the corona noise would be reduced proportionally compared to the Proposed Project.

Corona noise levels at the edge of the ROW would be less than those of the Proposed Project. For all locations, permanent day-night or 24-hour noise levels (Ldn or CNEL) would not substantially increase due to corona noise for any segment of the Phased Build Alternative.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels

SCE proposes to accomplish normal and routine operation of the lines through SCE control systems based remotely and manually along the corridors and at substations, as required. As in the existing conditions, SCE would inspect the transmission, subtransmission, telecommunications, and distribution overhead facilities at least once per year via ground and/or aerial observation. Maintenance would occur as needed and could include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and structures, tree trimming, brush and weed control, and access road maintenance. Each of these activities normally requires daytime use of crew trucks with occasional short-term assistance via helicopter (SCE, 2013).

High-capacity conductors would be installed on a combination of new and existing 220 kV structures. The adjustment to the location of these structures compared to the Proposed Project would not alter operational noise levels from inspection and maintenance activities. The operation-related activities would not be notably different from those activities for the existing facilities or for the Proposed Project facilities and the noise from those temporary but recurring activities would not be notably different. The occasional nature of such continued maintenance activities in this alternative ensures that permanent ambient noise levels would not be adversely affected.

D.13.5 Environmental Impacts of No Action Alternative

D.13.5.1 No Action Alternative Option 1

The No Action Alternative Option 1 is described in Section C.6.3.1. It would consist of a new 500 kV circuit, primarily following the Devers-Valley transmission corridor and extending 26 miles between Devers Substation. It would also require a new 40-acre substation south of Beaumont, and 4 new 220 kV circuits extending 7 miles from the new Beaumont Substation to El Casco Substation, primarily following the existing El Casco 115 kV ROW. The remainder of the No Action Alternative, from El Casco Substation to the San Bernardino and Vista Substations, would be identical to the Proposed Project. Information on environmental resources and project impacts is derived from the Devers–Palo Verde 500 kV No. 2 Project EIR/EIS (CPUC and BLM, 2006) and the El Casco System Project Draft EIR (CPUC, 2007); which include nearly all of the No Action alignment.

No Action Alternative Transmission Lines and Beaumont Substation. Noise is a concern to nearby sensitive receptors, land uses such as residences, school, nursing homes, parks and hospitals. The No Action Alternative Option 1 alignment and the Beaumont Substation are largely in rural or remote settings, but a few sections of the transmission line pass near residential communities like Cabazon, which are sensitive receptors. The route also passes through noise-sensitive natural and wilderness areas, where quiet is an expectation for visitors.

Compliance with noise ordinances and conditions imposed by agencies having land use jurisdiction would help ensure that this impact is addressed to the extent feasible. In areas of sensitivity, time-of-day restrictions on construction would help alleviated impacts. Use of heavy equipment and helicopters is inherently noisy, but the impacts are of relatively short duration, occurring only during active construction and not constantly. For the Devers to Valley alignment, the DPV2 EIR/EIS identified that increased corona noise from operation of transmission lines would be a significant and unavoidable impact. It is expected that the same would apply to the substation and the lines to El Casco; the impact would apply where sensitive receptors are nearby.

D.13.5.2 No Action Alternative Option 2

No Action Alternative Option 2 would require the construction of over 40 miles of new 500 kV transmission line, following the existing Valley-Serrano 500 kV line. The alternative is described in Section C.6.3.2, and illustrated on Figure C-6b. High levels of noise associated with construction of this No Action Alternative Option 2 could disturb nearby sensitive receptors, including residential areas, schools, hospitals, day care centers, campgrounds, and other outdoor recreation areas. Areas that are particularly sensitive to increases in noise levels include the Lake Mathews-Estelle Mountain reserve and the Cleveland National Forest. The same as for the Proposed Project, construction of this alternative would involve the use of heavy equipment, such as bulldozers, cranes, and drilling rigs. Helicopters would be needed to transport construction materials and to string the conductors for the overhead line. Construction activity would occur within and adjacent to the ROW, but construction noise would exceed ambient noise levels and could violate local noise standards for nearby receptors. In noise-sensitive areas, time-of-day restrictions on construction would further reduce adverse noise effects. The use of heavy equipment and helicopters is inherently noisy, but the impacts would be temporary, short-term, and dispersed along the length of the approximately 40-mile corridor during the construction period. Therefore, it is unlikely that sensitive receptors would be exposed to excessive noise levels for an extended period of time.

Operational noise levels would be increased due to corona noise from the new 500 kV circuit, but the increase in operational noise would not substantially exceed existing noise levels because the existing 500 kV transmission line produces similar levels of operational noise.

D.13.6 Mitigation Monitoring, Compliance, and Reporting

Table D.13-9 presents the mitigation monitoring program for noise.

Table D.13-9. Mitigation Monitoring Program – Noise

MITIGATION MEASURE	**N-1a: Implement best management practices for construction noise.** SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors and to avoid possible violations of local rules, standards, and ordinances during construction: ▪ Construction noise shall be confined to daytime, weekday hours (7:00 a.m. to 6:00 p.m.) or an alternative schedule established by the local jurisdiction. ▪ Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. ▪ Stationary noise sources (e.g., generators, pumps) at staging areas and on the ROW within 1,4000 feet of sensitive receptors shall be shielded at the source to the extent feasible. Examples of feasible shielding may include an enclosure, temporary sound walls, or acoustic blankets. For best performance, sound walls or acoustic blankets shall have a height of no less than 8 feet, a Sound Transmission Class (STC) of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts. ▪ Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible. ▪ Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, its engine should be shut off.
Location	Construction activity in all segments.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE implements construction noise management practices.
Effectiveness Criteria	Noise-sensitive receptors are not subject to unnecessary noise or noise in violation of local rules, standards, or ordinances.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office.
Timing	During all phases of construction.
MITIGATION MEASURE	**N-1b: Implement a helicopter noise control strategy.** As part of the final Helicopter Use Plan, SCE shall include a helicopter noise control strategy that identifies the established helicopter flight corridors and minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground. The noise control strategy shall prohibit helicopter hovering (greater than 15 minutes) within 250 feet of residences in any vertical or horizontal direction.
Location	Construction activity involving helicopter use.
Monitoring / Reporting Action	CPUC/BLM monitor verifies that SCE submits a final Helicopter Use Plan with a noise control strategy.
Effectiveness Criteria	Noise-sensitive receptors are avoided.
Responsible Agency	CPUC; BLM Palm Springs–South Coast Field Office.
Timing	Forty-five days prior to construction and during all phases of construction.

D.13.7 References

Caltrans (California Department of Transportation). 2009. *Technical Noise Supplement*. November.

CPUC (California Public Utilities Commission). 2007. SCE El Casco System Project Draft EIR, individual resource Sections. http://www.cpuc.ca.gov/environment/info/aspen/elcasco/toc-deir.htm. Accessed April 15, 2015.

CPUC and BLM (Bureau of Land Management). 2006. SCE Devers–Palo Verde 500 kV No. 2 Project EIR/EIS, Sections on West of Devers Alternative. http://www.cpuc.ca.gov/environment/info/aspen/dpv2/toc-deir.htm. Accessed April 15, 2015.

CPUC and USDA (United States Department of Agriculture) Forest Service. 1984. Devers-Valley 500 kV, Serrano-Valley 500 kV and Serrano–Villa Park 220 kV Transmission Line Project Final EIS/EIR. August.

FHWA (Federal Highway Administration). 2006. *Roadway Construction Noise Model (RCNM), User's Guide*. January.

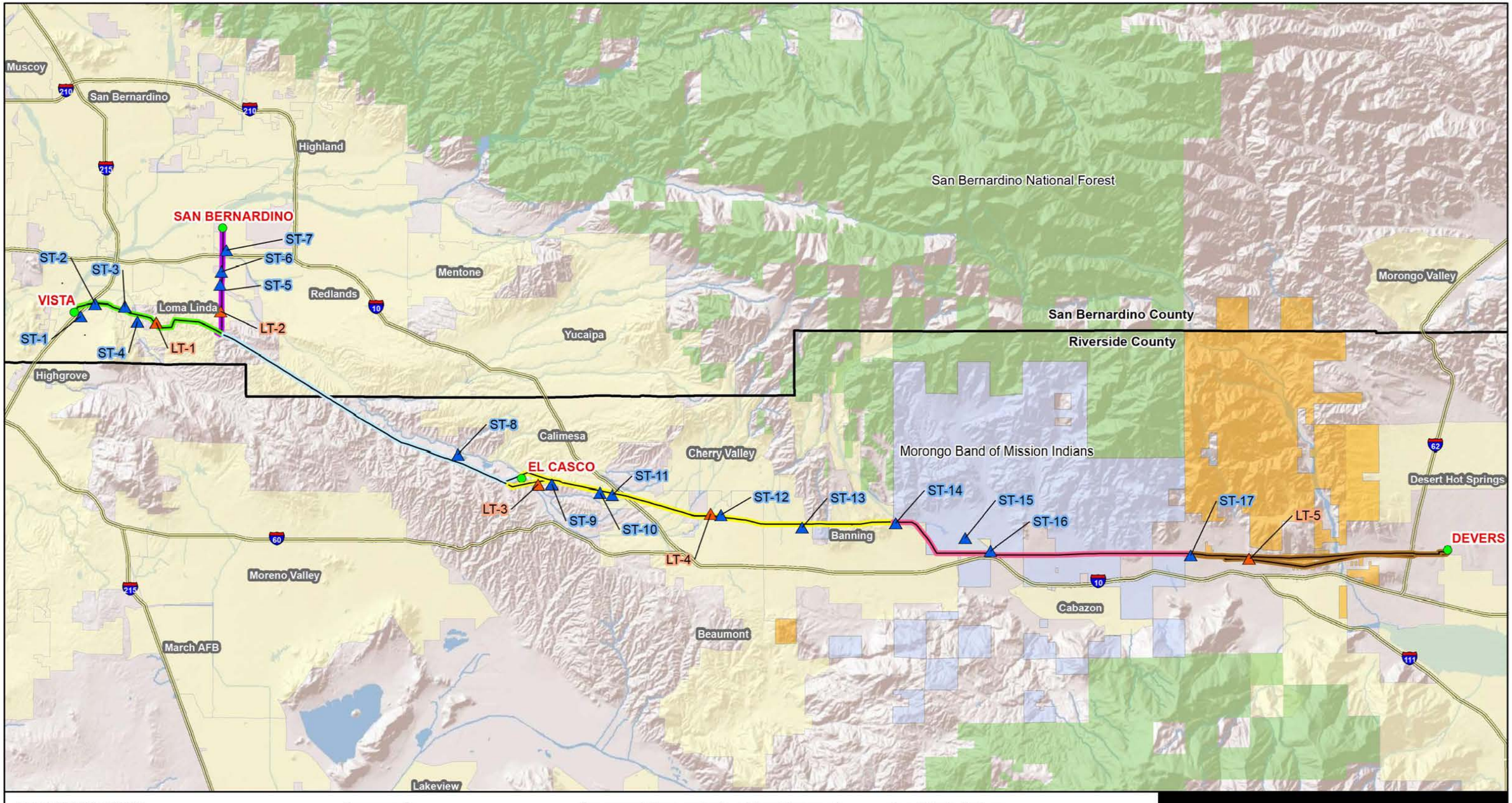
FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*. May.

OPR (Office of Planning and Research). 2003. State of California General Plan Guidelines. http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf. Accessed August 27, 2014.

SCE (Southern California Edison). 2014a. Response to Completeness Question 17 (Supplemental Corona Noise Analysis).

_____. 2013. Proponent's Environmental Assessment West of Devers Upgrade Project.

U.S. EPA (U.S. Environmental Protection Agency). 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. No. 550/9-74-004, Washington, D.C.



West of Devers Upgrade Project

Figure D.13-1
Noise Monitoring Locations

This page intentionally blank.