3.10 Noise

3.10.1 Introduction

This section describes effects on noise that would be caused by implementation of the proposed TRTP. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for a range of Project alternatives, and recommends measures to reduce or avoid adverse impacts anticipated from Project construction and operation. In addition, existing laws and regulations relevant to noise are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with implementation of the Project.

Scoping Issues Addressed

During the scoping period for the EIR/EIS (August-October 2007), a series of scoping meetings were conducted with the public and government agencies, and written comments were received that identified issues and concerns with the Project. The following issues related to noise were raised during scoping:

- Property owners in the Chino Hills area expressed concern with the potential for 24-hour "humming" and "buzzing" from electrical lines.
- County of Los Angeles had concern with how the Project would impact county parks and whether or not a park patron's experience would be compromised with the construction of the 500-kV towers.
- Agencies and residents also expressed concern with the use of helicopters to construct towers, and how the noise associated with aircraft would impact recreationists and wildlife.

Noise-related concerns that are relevant to recreation, including the effects that Project-related noise would have on park patrons' recreational experiences, are addressed in the Wilderness and Recreation analysis for TRTP, which is presented as Section 3.15 of this EIR/EIS. Similarly, noise-related concerns that are relevant to wildlife and biological resources are addressed in the Biological Resources analysis for TRTP, which is presented as Section 3.4 of this EIR/EIS. Therefore, this analysis addresses direct noise concerns and potential impacts, including the corona noise noted above as a public scoping issue.

Summary and Comparison of Alternatives

Table 3.10-1 on the following page presents some key factors related to noise for the proposed Project and each alternative. It is important to note that the "Environmental Issues" indicated in Table 3.10-1 are not necessarily impact statements, but rather selected information items that provide a comparison between the alternatives. Specific impact statements that have been identified for the Project and alternatives, in accordance with the significance criteria introduced in Section 3.10.4.1 (Criteria for Determining Impact Significance) are described in Sections 3.10.6 through 3.10.11.

3.10.2 Affected Environment

In the following noise analysis, data was extensively used from the TRTP Noise Technical Report, dated December 2007 (CH2MHill, 2007). Ambient noise surveys were conducted at 14 representative locations to assess the existing ambient noise levels of the representative locations from July 31, 2007, through August 3, 2007; and from August 13, 2007, through August 15, 2007. Continuous unattended long-term monitoring stations were established at 12 locations between Palmdale (North Region) and Chino Hills (South Region). Because long-term monitoring locations were unavailable in the northern rural area of the

Table 3.10-1. Summary Comparison of Environmental Issues – Noise

Environmental Issues	Alternative 1 (No Project/Action)	Alternative 2 (SCE's Proposed Project)	Alternative 3 (West Lancaster)	Alternative 4 (Chino Hills Route)	Alternative 5 (Partial Underground)	Alternative 6 (Max. Helicopter in ANF)	Alternative 7 (66-kV Subtransmission)
Construction noise would substantially disturb sensitive receptors (Impact N-1)	Because unspecified transmission upgrades would be required, it is assumed these activities would generate construction noise similar to Alternative 2.	Sensitive noise receptors within close proximity (200 feet) to construction activities would be disturbed by substantial construction noise (i.e. results in an ambient noise increase of at least 5 dBA).	Slightly fewer sensitive receptors in the City of Lancaster would be subjected to construction noise than Alternative 2.	Fewer sensitive residential receptors within the City of Chino Hills would be subject to construction noise than Alternative 2.	Because of underground tunnel construction within the City of Chino Hills, construction noise would affect fewer sensitive receptors within the City of Chino Hills than Alternative 2.	Construction of additional helicopter staging areas and the increased use of helicopters would substantially increase construction noise. Small increase in the number of sensitive receptors subjected to construction noise in and around the ANF.	Slightly increased construction noise would occur in the areas where subtransmission lines would be re-routed or installed underground.
Construction noise levels would violate local standards (Impact N-2)	Because unspecified transmission upgrades would be required, it is assumed these activities would generate construction noise similar to Alternative 2.	Construction would not comply with noise ordinances adopted by the Cities of Baldwin Park, Duarte, La Habra Heights, Pasadena, and South El Monte.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations (Impact N-3)	Substantial noise effects would occur for any noise sensitive uses near possible new substations and new transmission facilities, which could result in operational and maintenance (O&M) noise, including corona noise.	Corona noise modeled for Alternative 2 indicates that corona noise would substantially increase (i.e. more than 5 dBA above existing ambient noise) along Segments 5, 6, 7, 8, 10, and 11, with fewer sensitive noise receptors present along 10, 6 and 11 (in the ANF).	Same as Alternative 2; however, due to the rerouting of the T/L in the City of Lancaster, slightly fewer sensitive receptors would be subjected to corona noise in the City of Lancaster.	Same as Alternative 2; however, by rerouting the proposed T/L through more rural areas of the City of Chino Hills, fewer sensitive residential receptors would be subjected to corona noise.	Same as Alternative 2; however, because a transmission segment would be placed underground within the City of Chino Hills, operational corona noise would affect fewer sensitive receptors.	Same as Alternative 2.	Same as Alternative 2; however, would avoid some amount of operational corona noise from 66-kV subtransmission lines along the two 66-kV underground segments.
Operational noise levels would violate local standards (Impact N-4)	Violations could occur similar to Alternative 2.	Operational noise would not comply with noise ordinances adopted by the County of Los Angeles and the Cities of Chino, South El Monte, and Whittier.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.

proposed Project, short-term attended measurements were collected at two locations in the northern Antelope Valley. The existing noise environment, including noise sensitive receptors, ambient noise, and corona noise, for each segment of the proposed Project is described below. The study area for the noise environment is defined as the area extending 2,000 feet from each side of the centerline of the proposed alignment or 2,000 feet from the perimeter of each substation.

3.10.2.1 Regional Setting

To describe environmental noise at the regional and local levels, and to assess impacts on areas sensitive to community noise, a frequency weighting measure that simulates human perception is customarily used. The frequency weighting scale known as A-weighting best reflects the human ear's reduced sensitivity 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 community noise goals. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. Figure 3.10-1 (Typical Range of Common Sounds Heard in the Environment) illustrates typical ranges of common sounds heard in the community noise environment.

The community noise environment and the consequences of human activities cause noise levels to be widely variable over time. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (L_{eq}) or by an aggregated level occurring over a 24-hour day-night period (Ldn). The L_{eq}, or equivalent sound level, is a single value for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The Ldn, or day-night sound level, is equal to the 24-hour equivalent sound level (in dBA) with a 10 dBA penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m. The community noise equivalent level (CNEL) is a metric similar to Ldn in that it is a 24-hour equivalent level in dBA that includes a 5 dBA penalty to evening sounds (between 7:00 p.m. and 10:00 p.m.) along with the 10 dBA nighttime penalty.

The proposed Project and alternatives would be located within both urban and rural areas of Los Angeles County, Kern County, and San Bernardino County. Community noise levels are usually closely related to the intensity of nearby human activity. Figure 3.10-2 (Outdoor Day/Night Sound Levels in Different Areas) illustrates the typical noise levels of varying types of land use. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In pristine 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 (e.g., downtown 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 (U.S. EPA, 1974).

The surrounding land uses dictate what future 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 that are subject to nighttime noise are often considered objectionable because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (U.S. EPA, 1974).

3.10.2.2 Alternative 2: SCE's Proposed Project

Existing Noise Conditions

A wide range of noise sources occurs near the proposed Project route. For most of the proposed route, the existing transmission lines, which create corona noise that sounds like crackling and humming, are the most notable noise sources 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 voltage of the line, irregularities on the conductor surface caused either by age or moisture, and wet ambient meteorological conditions, when high humidity, fog, or rain occur. Surrounding land uses contribute many other noise sources at various locations along the route, as described in detail for each segment below.

Occupied noise-sensitive land uses are dispersed along the Project corridor as part of the residential development near the route. Notable noise-sensitive land uses along the route are school facilities, park facilities, cemetery use, and residential homes. Other sensitive uses are designated as recreation areas, and are identified accordingly. These uses are affected by both existing mobile and non-mobile noise sources such as transportation facility use, commercial/industrial development, and adjacent residential uses. Table 3.10-2 (Ambient Noise Levels along Proposed Project Route) presents the results of the ambient noise measurements taken along the route. Locations of the noise measurements are shown in Figures 5.2-1 and Figure 5.2-2 of the TRTP Noise Technical Report (CH2MHill, 2007).

Table 3.10-2. Ambient Noise Levels along Proposed Project Route

Location		Survey Period	L_{eq}	L_{max}	L_{min}	Primary Noise Sources and Nearby Transmission Line Sources
#	Description					
1[1]	Backus Road, Kern County (Segment 10)	August 1, 2007 9:15 a.m.	45.0	N/A	N/A	Traffic from Tehachapi Willow Springs Road.
2[1]	170th Avenue and Rosamond Boulevard, City of Rosamond (Segment 10)	August 1, 2007 9:52 a.m.	40.0	N/A	N/A	Traffic from Rosamond Boulevard.
3	Parkwood Drive, City of Palmdale (Segment 5)	July 31, 2007 to August 1, 2007	71.0	78.0	57.0	Traffic from residential street use and nearby construction activities. A number of existing transmission lines are located near the reading location.
4	Vincent Substation (Segment 9)	July 31, 2007 to August 1, 2007	50.0	55.0	45.0	Traffic from SR 14. A number of existing transmission lines are located near the reading location.
5	Valley View Park, City of Duarte (Segment 7)	August 14, 2007 to August 15, 2007	57.0	70.0	39.0	Traffic from residential street use and park activities.
6	Rose Hills Memorial Park Cemetery, City of Whittier (Segment 8)	August 14, 2007 to August 15, 2007	48.0	53.0	45.0	Cemetery activities. Two 220-kV transmission lines are located near the reading location.
7	Mesa Substation (Segment 9)	August 14, 2007 to August 15, 2007	59.0	63.0	52.0	Traffic from SR 60 and Potrero Grande Drive. Two 220-kV transmission lines are located near the reading location.
8	Skyline trail, City of Hacienda Heights (Segment 8)	August 14, 2007 to August 15, 2007	50.0	57.0	43.0	Traffic from residential street use. A number of existing transmission lines are located near the reading location.
9	Thoroughbred Street, City of Ontario (Segment 8)	August 2, 2007 to August 3, 2007	52.0	58.0	47.0	Traffic from residential street use. Two 220-kV transmission lines are located near the reading location.

Table 3.10-2. Ambient Noise Levels along Proposed Project Route

Location #	Location Description	Survey Period	L_{eq}	L_{max}	L_{min}	Primary Noise Sources and Nearby Transmission Line Sources
10	Pacific Crest Trail, Angeles National Forest (Segment 11)	July 31, 2007 to August 1, 2007	41.0	49.0	26.0	Los Angeles County Fire Camp activities. Two high elevation 220-kV transmission lines are located near the reading location.
11	Crossroads Park, City of Chino Hills (Segment 8)	August 2, 2007 to August 3, 2007	55.0	60.0	45.0	Traffic from Chino Hills Parkway and park activities. One 220-kV transmission line is located near the reading location.
12	Edam Street and Avila Avenue, City of Chino (Segment 8)	August 2, 2007 to August 3, 2007	53.0	60.0	43.0	Traffic from residential street use. Two 220-kV transmission lines are located near the reading location.
13	Eaton Blanche Park, City of Pasadena (Segment 11)	August 14, 2007 to August 15, 2007	51.0	61.0	43.0	Traffic from residential street use and park activities. One 220-kV double-circuit, two 66-kV, and one 220-kV single-circuit transmission line are located near the reading location.
14	Sally Tanner Park, City of Rosemead (Segment 11)	August 14, 2007 to August 15, 2007	53.0	57.0	47.0	Traffic from Mission Drive and nearby Water Bureau maintenance yard use. One 220-kV double-circuit, two 66-kV, and one 220-kV single-circuit transmission line are located near the reading location.

Notes: All measurements are in dBA.
N/A: Data is not available
1 Denotes short-term measurement, 10 minute reading in duration.
All other measurements were 24-hour in duration.
Source: Tehachapi Renewable Transmission Project Noise Technical Report, December 2007

Existing Transmission Line Corona Noise Levels. The electrical effects of high-voltage transmission lines fall into two broad categories: corona effects and electric field effects. Corona is the ionization of the air that occurs at the surface of the energized conductor and suspension hardware due to very high electric field strength at the surface of the metal during certain conditions. Corona may result in radio and television reception interference, audible noise, light, and production of ozone. The amount of corona produced by a transmission line is a function of the voltage of the line, the diameter of the conductor (or bundle of conductors), the elevation of the line above sea level, the condition of the conductor and hardware and the local weather conditions. Corona typically becomes a design concern for transmission lines at 345 kilovolts (kV) and above and is less noticeable on lines operated at lower voltages.

The electric field gradient that causes corona is the rate at which the strength of the electric field changes with distance and is directly related to the line voltage. The electric field gradient is greatest at the surface of the conductor. Large-diameter conductors have lower electric field gradients at the conductor surface and, hence, for identical line voltage larger conductor generates lower corona noise than smaller conductors. Irregularities (such as nicks and scrapes on the conductor surface) or sharp edges on suspension hardware concentrate the electric field at these locations and, thus, increase the electric field gradient and corona at these spots. Similarly, contamination on the conductor surface, such as dust or insects, can cause irregularities that are a source for corona. Corona also increases at higher elevations where the density of the atmosphere is less than at sea level. Raindrops, snow, fog, hoarfrost, and condensation accumulated on the conductor surface are sources of surface irregularities that can increase corona. During fair weather, the number of these sources of surface irregularities is lower and the corona effect is also low.

Corona generates audible noise during operation of transmission lines. The noise is generally characterized as a crackling, hissing, or humming noise. The noise is most noticeable during wet conductor conditions such as rain or fog. Audible noise from transmission lines is often masked by the background noise at locations beyond the edge of the ROW particularly where the line runs near a source

of background noise such as a freeway. However, during wet weather, the number of these sources of surface irregularities increases (for instance due to rain drops standing on the conductor and energized hardware) and corona effects are greater. During wet conditions or foul weather conditions, the conductor will produce the greatest amount of corona noise. However, during heavy rain the ambient noise generated by the falling raindrops will typically be greater than the noise generated by corona.

Existing corona noise was calculated at six representative locations along each segment of the proposed Project. The existing audible noise produced by corona at selected locations along the proposed Project route are listed in Table 3.10-3, and the locations are shown in Figures 5.3-1 through 5.3-5 of the TRTP Noise Technical Report (CH2MHill, 2007).

Table 3.10-3. Existing Audible Corona Noise along Proposed Project Route

Existing Corona Noise Location No.	Proposed Project Segment	Existing Audible Corona Noise at Edge of ROW (dBA)		Parameters Considered During Existing Corona Noise Determination
		Wet Weather Conditions	Fair Weather Conditions	
1	10	N/A	N/A	No existing line is present in the corridor; therefore, there is no corona-related noise, and modeling was not warranted.
2	6	<20.0 – 24.0	<20.0	The Existing Scenario that was modeled consisted of two 220-kV single-circuit lattice steel towers (LSTs) and one single-circuit LST to be built to 500-kV specifications and operated at 220 kV. Corona modeling inputs included 15 total conductors, of which 9 are energized phases and 6 are ground wires. An elevation of 4,900 feet above mean sea level (msl) was used for Location 2.
3	8	N/A	N/A	The existing line in Chino Hills is currently idle (not energized); therefore, there is no corona-related noise, and modeling was not warranted.
4	7	22.0 – 25.0	<20.0	The Location 4 Existing Scenario was modeled with one 220-kV double-circuit LST and one 220-kV single-circuit LST. The corona modeling inputs included 12 total conductors, of which 9 are energized phases and 3 are ground wires. An elevation of 1,400 feet above msl was used for Location 4.
5	South of Vincent Substation	<20.0 – 22.0	<20.0	The Location 5 Existing Scenario was modeled with eight 220-kV single-circuit LSTs. The corona modeling inputs included 40 total conductors, of which 24 are energized phases and 16 are ground wires. An elevation of 3,225 feet above msl was used for Location 5.
6	8	23.0 – 25.0	<20.0	The Location 6 Existing Scenario was modeled with one 220-kV double-circuit LST and one 220-kV single-circuit LST. The corona modeling inputs included 12 total conductors, of which 9 are energized phases and 3 are ground wires. An elevation of 700 feet above msl was used for Location 6.
7	4	50.0 – 51.0	25.0 – 26.0	The Location 7 Existing Scenario was modeled with one 500-kV single-circuit LST and two 220-kV single-circuit LSTs. Corona modeling inputs included 15 total conductors, of which 9 are energized phases and 6 are ground wires. An elevation of 2,600 feet was used for Location 7.

Source: Tehachapi Renewable Transmission Project Noise Technical Report, December 2007
N/A: No Existing Transmission Lines Location

A summary of noise conditions along each segment of the proposed Project route is presented below. While the following descriptions include a summary of sensitive noise receptors located along each segment by land use type, a complete list of sensitive receptors located along each segment is provided in Table 5.3-4 and shown in Figures 5.4-1 and 5.4-2 of the TRTP Noise Technical Report (CH2MHill, 2007).

Segment 4

Ambient Noise Levels. Segment 4 starts at the future Cottonwind Substation location and ends at the existing Antelope Substation. The noise measurements taken at the junction of 170th Avenue and Rosamond Boulevard, Noise Measurement Location 2 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), are representative of the noise levels in the Segment 4 study area and other less developed rural locations. The L_{eq} noise level measured during one daytime 10-minute period at this site was 40 dBA.

Calculated existing transmission line corona noise along this segment is represented at Existing Corona Noise Location 7 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route). Existing fair weather corona noise varies between 25 and 26 dBA at the edge of the study area while rainy weather corona noise was estimated to vary between 50 and 51 dBA at the edge of the study area.

Noise-Sensitive Receptors. There are very few residences along the Segment 4 study area. There are no hospitals, libraries, schools, places of worship, or other facilities in the study area. The setting is rural and undeveloped in nature and includes agricultural farmlands.

Segment 5

Ambient Noise Levels. Segment 5 starts at the existing Antelope Substation and ends at the existing Vincent Substation. The Segment 5 study area passes through or near the western limits of the cities of Lancaster and Palmdale. The noise measurements taken at the end of Parkwood Drive, Noise Measurement Location 3 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), in a residential area next to the existing transmission line along the southern portion of the Segment 5 is representative of noise levels along this segment. The hourly L_{eq} noise level measured over a 24-hour period was 71 dBA. The monitoring results were likely elevated by high winds and construction activities in the distance (approximately 0.25 mile away) that were noted during field visits. Under calmer conditions the expected noise level would be lower. The monitoring location was located above the residential area, near the side of a hill. In the vicinity of State Route (SR) 14 near the southerly end of Segment 5, noise levels are louder due to SR 14 traffic.

Existing Corona Noise Location 4 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route) represents existing transmission line corona noise along this segment. While Existing Corona Noise Location 4 is located along Segment 7, the characteristics of the existing transmission lines along both Segment 5 and Segment 7 are similar. Existing fair weather corona noise was estimated to be less than 20 dBA at the edge of the study area, while rainy weather corona noise was estimated to range from 22 dBA to 25 dBA.

Noise-Sensitive Receptors. Noise-sensitive uses encountered near the route and work areas along Segment 5 include residential areas and a long-term care facility. In addition, multiple large-scale residential developments are proposed or under construction along the segment.

Segment 6

Ambient Noise Levels. Segment 6 starts at the existing Vincent Substation and ends at the southern boundary of the Angeles National Forest (ANF) and is located almost entirely within the ANF. The setting is rural at the north end of the segment and generally undeveloped open space across the ANF. The primary noise receptors along this segment are recreational use within the ANF. No noise measurements were conducted along Segment 6; however, the ambient noise measurement conducted in

the ANF portion of Segment 11, Noise Measurement Location 10 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), is representative of the noise level along this segment. The hourly L_{eq} noise levels measured over a 24-hour period are expected to be 41 dBA along this segment.

Existing Corona Noise Location 2 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route) represents existing transmission line corona noise along this segment. While Existing Corona Noise Location 2 is located along Segment 11, the characteristics of the existing transmission lines of both segments are similar. Existing fair weather corona noise was estimated to be less than 20 dBA at the edge of the study area, while rainy weather corona noise was estimated to range from less than 20 dBA to 24 dBA.

Noise-Sensitive Receptors. In addition to residences near the Angeles Forest Highway immediately south of the Vincent Substation (not within the ANF), there are several residences within the ANF on private inholdings. Other than these residential receptors, there are no hospitals, libraries, schools, places of worship, or other sensitive receptors in the Segment 6 study area.

Segment 7

Ambient Noise Levels. Segment 7 starts at the northern, undeveloped boundary of Duarte before emerging into the populated residential area of Duarte and ends at the existing Mesa Substation. A noise measurement was conducted along this segment in a residential area, Noise Measurement Location 5 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route). The hourly L_{eq} noise levels measured over a 24-hour period at this site measured 57 dBA.

Existing Corona Noise Location 4 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route) represents existing transmission line corona noise along this segment. Existing fair weather corona noise was estimated to be less than 20 dBA at the edge of the study area, while existing rainy weather corona noise was estimated to range from 22 dBA to 25 dBA.

Noise-Sensitive Receptors. Noise-sensitive receptors along Segment 7 include residences, schools, healthcare facilities, and nature and wildlife preserves and parks.

Segment 8

Ambient Noise Levels. Segment 8 starts near the existing Mesa Substation and ends at the existing Mira Loma Substation. This segment traverses highly developed and densely populated areas of the Los Angeles metropolitan area. Noise measurement surveys were conducted along this segment in residential areas, Noise Measurement Locations 9 and 12 from Table 3.10-2 (Ambient Noise Levels Along Proposed Project Route), and in parks and open space areas, Noise Measurement Locations 6 and 8 from Table 3.10-2. The hourly L_{eq} noise levels measured over 24-hour periods ranged from 43 to 60 dBA at these locations.

Existing Corona Noise Locations 6 and 8 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route) represent existing transmission line corona noise along this segment. Existing fair weather corona noise was estimated to be less than 20 dBA at the edge of the study area, while rainy weather corona noise was estimated to range from 23 dBA to 25 dBA. The existing transmission line along this segment is not energized near Existing Corona Noise Location 3; therefore, there is no existing corona noise at this location.

Noise-Sensitive Receptors. Noise-sensitive receptors along Segment 8 include residences, residential neighborhoods, schools, healthcare facilities, and nature and wildlife preserves and parks.

Segment 9 (Substations)

Ambient Noise Levels. Segment 9 includes construction of the new Whirlwind Substation, expansion of the Antelope and Vincent Substations (the only substations where the proposed Project has the potential to change the noise levels), and minor upgrades of the Mesa, Gould, and Mira Loma Substations. SR 14 is located less than one mile from the Vincent Substation. The Mesa Substation is near SR 60 and Potrero Grande Road and the surrounding area is affected by noise from these roads. Noise measurements were conducted next to the Vincent and Mesa substations, Noise Measurement Locations 4 and 7 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route). The hourly L_{eq} noise levels measured over 24-hour periods was 50 dBA at the Vincent Substation site and 59 dBA at the Mesa Substation site.

Existing transformer noise at the Vincent Substation results in 51 dBA at the closest residence, while at the Antelope Substation the existing transformer noise at the closest residence is 46 dBA (CH2MHill, 2007). In addition to the substation noise from the transformers, there is existing noise from the transmission lines entering, leaving, and within the substation. Existing Corona Noise Location 5 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route) represents existing transmission line corona noise within this segment. Existing fair weather corona noise was estimated to be less than 20 dBA at the transmission line. Rainy weather corona noise was estimated to range from 28 dBA at 50 feet from the transmission line to less than 20 dBA at 2,000 feet from the line.

Noise-Sensitive Receptors. Several sensitive noise receptors are located in the general vicinity of the Antelope, Vincent, and Mesa Substations. The area near the Vincent Substation is rural in character, and is surrounded by scattered residences. Furthermore, a residential area is located to the north of the Mesa Substation.

Segment 10

Ambient Noise Levels. Segment 10 starts at the Windhub Substation and ends at the proposed new Whirlwind Substation. The noise measurements conducted along this segment at the west paved terminus of Backus Road and at the junction of Rosamond Boulevard and 170th Street, Noise Measurement Locations 1 and 2 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), are considered to be generally representative of the noise levels along Segment 10. The L_{eq} noise levels measured over 10-minute periods were 45 dBA at Noise Reading Location 1 and 40 dBA at Noise Reading Location 2.

There are no existing transmission lines along this segment of the proposed alignment and, therefore, there is no existing corona noise.

Noise-Sensitive Receptors. Few residences are located along Segment 10. There are no hospitals, libraries, schools, places of worship, or other facilities. The setting is rural and undeveloped in nature and includes agricultural farmlands.

Segment 11

Ambient Noise Levels. Segment 11 starts at the existing Vincent Substation and ends at the existing Mesa Substation. Most of the northern portion of Segment 11 is located within the ANF. The noise measurements conducted along this segment were collected at the Pacific Crest Trail in the ANF and residential areas outside the ANF, as shown by Noise Measurement Locations 10, 13, and 14 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route). The hourly L_{eq} noise levels measured over

a 24-hour period ranged from 41 dBA at Noise Reading Location 10, from 51 dBA at Noise Reading Location 13, and 53 dBA at Noise Reading Location 14.

Existing Corona Noise Locations 2 and 4 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route) represents existing transmission line corona noise along this segment. While Existing Corona Noise Location 2 is located along Segment 6 and Existing Corona Noise Location 4 is located along Segment 7, the characteristics of the existing transmission lines along these segments are similar. Existing fair weather corona noise was estimated to be less than 20 dBA at the edge of the study area, while existing rainy weather corona noise was estimated to range from 22 dBA to 25 dBA.

Noise-Sensitive Receptors. The setting is rural at the north end of the segment. There are no residences, hospitals, libraries, schools, places of worship, or other facilities near the alignment in the ANF. The primary noise receptors along this segment are people hiking or camping in the ANF, and residences located near Vincent Substation. The southern portion of Segment 11 enters La Cañada Flintridge and the northern end of Pasadena and continues south into populated areas in the San Gabriel Valley. Noise receptors located south of the ANF on this segment include residences, industries, businesses, schools, and hospitals.

Noise Modeling Results

Noise generated by construction activities, substation operation, and transmission line operation was modeled and presented in the TRTP Noise Technical Report (CH2MHill, 2007). The following summarizes these noise modeling results.

Temporary Construction Noise

Construction noise at any specific receptor is dominated by the closest and loudest equipment, and the types and numbers of construction equipment near any specific receptor location would vary over time. In order to make reasonably conservative estimates of construction noise, construction equipment noise levels at various distances were used based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance).

Table 3.10-4. Estimated Construction Equipment Noise Levels Versus Distance

Distance from ROW or Substation Property Line (ft)	L_{eq} Noise Level (dBA)
50	83.0
100	79.0
200	74.0
400	69.0
800	63.0
1,600	58.0
3,200	52.0
6,400	46.0

Source: Tehachapi Renewable Transmission Project Noise Technical Report, December 2007

Substation Operational Noise

The following presents the predicted noise levels from the Vincent, Antelope, and Whirlwind Substations (the only substations where the proposed Project has the potential to result in a change in noise levels).

- ***Vincent.*** Modifications to the Vincent Substation include one new Static VAR Compensator (SVC) that is anticipated to result in a noise level of 60 dBA or less at the fence line. The closest residents are located

approximately 400 feet from the fence line. At this distance the noise level from the SVC is predicted to be 46 dBA and is anticipated to increase the substation noise level by 2 dBA to 53 dBA.

- ***Antelope.*** The closest residence to the proposed SVC location is approximately 3,000 feet. Project modifications to the Antelope Substation include one new SVC that is anticipated to result in 65 dBA or less at the fence line. At 3,000 feet from the fence line, the noise level from the SVC is predicted to be 42 dBA. This is anticipated to result in less than a 2 dBA increase to 48 dBA at the closest residence to the SVC.
- ***Whirlwind.*** No residences have been identified within 3,000 feet of any of the proposed locations for the Whirlwind Substation. The new Whirlwind Substation would include four single-phase 373-megavolt amperes (MVA) transformers. The predicted noise level from these transformers is 40 dBA at 3,000 feet.

Corona Noise

Seven locations from the proposed Project were selected for future corona noise modeling. Future corona noise was calculated at seven representative locations along each segment of the proposed Project. Figures 6-1 through 6-10 from the TRTP Noise Technical Report (CH2MHill, 2007) show the location of each existing corona noise location number and proposed Project segment. For comparison purposes, these locations are identical to those showing existing corona noise as presented above in Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route). The results of the modeling are summarized below in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route).

Table 3.10-5. Modeled Future Audible Corona Noise along Proposed Project Route

Corona Modeling Location #	Proposed Project Segment	Modeled Future Audible Corona Noise at Edge of ROW (dBA)		Parameters Considered During Corona Noise Modeling
		Wet Weather Conditions	Fair Weather Conditions	
1	10	52.0 - 55.0	27.0 - 30.0	One 500-kV single-circuit LST was modeled for the Location 1 proposed scenario. The corona modeling inputs included five total conductors, of which three are energized phases and two are ground wires. The elevation used in the corona modeling for Location 1 was 3,150 feet.
2	6	47.0 - 60.0	22.0 – 35.0	The Location 2 proposed scenario was modeled with one 220-kV single-circuit LST, one single-circuit LST to be built to 500-kV specifications and operated at 220 kV, and one 500-kV single-circuit LST. Corona modeling inputs included 15 total conductors, of which 9 are energized phases and 6 are ground wires. An elevation of 4,900 feet was used for Location 2.
3	8	56.0 – 58.0	32.0 – 35.0	The Location 3 proposed scenario was modeled with one split-phased 500-kV double-circuit tubular steel pole (TSP), with both circuits energized. Corona modeling inputs included eight total conductors, of which six are energized phases and two are ground wires. The elevation used in the Corona modeling for Location 3 was 950 feet.
4	7	51.0 – 54.0	26.0 – 29.0	The Location 4 LST proposed scenario was modeled with one 220-kV double-circuit LST, with the right side de-energized, and one 500-kV double-circuit LST. The 500-kV double-circuit LST is to be built to 500-kV specifications, and operated at 220 kV on the left and operated at 500 kV on the right. The corona modeling inputs included 15 total conductors, of which 9 are energized phases, 3 are de-energized phases, and 3 are ground wires. An elevation of 1,400 feet was used for Location 4. The Location 4 TSP proposed scenario was modeled with one 220-kV double-circuit LST, with the right side de-energized, and one 500-kV double-circuit TSP. The 500-kV double-circuit TSP is to be built to 500-kV specifications, and operated at 220 kV on the left and operated at 500 kV on the right. The corona modeling inputs included 15 total conductors, of which 9 are energized phases, 3 are de-energized phases, and 3 are ground wires. An elevation of 1,400 feet was used for Location 4.

Table 3.10-5. Modeled Future Audible Corona Noise along Proposed Project Route

Corona Modeling Location #	Proposed Project Segment	Modeled Future Audible Corona Noise at Edge of ROW (dBA)		Parameters Considered During Corona Noise Modeling
		Wet Weather Conditions	Fair Weather Conditions	
5	South of Vincent Substation	49.0	24.0	The Location 5 proposed scenario was modeled with the following eight transmission lines: • Six 220-kV single-circuit LSTs • One single-circuit TSP, to be built to 500-kV specifications and operated at 220 kV • One 500-kV single-circuit TSP The corona modeling inputs included 38 total conductors, of which 24 are energized phases and 14 are ground wires. An elevation of 3,225 feet was used for Location 5.
6	8	51.0 – 52.0	26.0 - 27.0	One 220-kV double-circuit LST and one 500-kV double-circuit LST, with the right side de-energized, were modeled for the Location 6 proposed scenario. The corona modeling inputs included 15 total conductors, of which 9 are energized phases, 3 are de-energized phases, and 3 are ground wires. The elevation used in the corona modeling for Location 6 was 700 feet
7	4	52.0 – 56.0	26.0 – 31.0	The Location 7 proposed scenario was modeled with two 500-kV single-circuit LSTs and two 220-kV single-circuit LST. Corona modeling inputs included 20 total conductors, of which 12 are energized phases and 8 are ground wires. An elevation of 2,600 feet was used for Segment 4.

Source: Tehachapi Renewable Transmission Project Noise Technical Report, December 2007

Maintenance Noise

Maintenance activities associated with substations and transmission lines would typically result in noise levels below those associated with construction-related activities, and are anticipated to involve fewer pieces of heavy equipment, occur less frequently, and to be of shorter duration. Maintenance activities are primarily inspection-related (for example, annual inspection of the transmission line from vehicles or helicopters). Other maintenance activities include washing of insulators to ensure proper function and would be conducted on an as-needed basis, but are anticipated to occur less than once per year.

3.10.2.3 Alternative 3: West Lancaster Alternative

Alternative 3 is identical to the proposed Project, except for one deviation along Segment 4. This alternative would re-route the new 500-kV T/L in Segment 4 along 115th Street West rather than 110th Street West. This alternative would deviate from the proposed route at approximately S4 MP 14.9,where the new 500-kV T/L would turn south down 115th Street West for approximately 2.9 miles and turn east for approximately 0.5 mile, rejoining the proposed route at S4 MP 17.9. This re-route traverses through undeveloped land with scattered residential use along West Avenue I and J and would increase the overall distance of Segment 4 by approximately 0.4 mile.

Existing Noise Condition

The Alternative 3 re-route would occur within Project Segment 4, which starts at the future Cottonwind Substation location and ends at the existing Antelope Substation. The noise measurements taken at the junction of 170th Avenue and Rosamond Boulevard, Noise Measurement Location 2 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route) are representative of the noise levels in the

Alternative 3 re-route study area and other less developed rural locations. The L_{eq} noise level measured during one daytime 10-minute period at this site was 40 dBA.

Noise-Sensitive Receptors. There are very few residences along the Alternative 3 re-route area. There are no hospitals, libraries, schools, places of worship, or other facilities in the study area. The setting is rural and undeveloped in nature and includes agricultural farmlands.

3.10.2.4 Alternative 4: Chino Hills Route Alternatives

Under Alternative 4, the proposed transmission line would follow the same route as the proposed Project along all segments of the proposed Project except Segment 8. Alternative 4 would diverge from the proposed Project route at S8A MP 19.2 and turn to the southeast, crossing through part of Orange County before entering San Bernardino and the Chino Hills State Park (CHSP).

As mentioned, the proposed routes for Alternative 4 would cross through parts of Orange County and San Bernardino County, which the proposed Project would not enter. The routing options for Alternative 4 would also cross through the CHSP, which is managed by the California Department of Parks and Recreation, with assistance from the Chino Hills State Park Interpretive Association (CHSPIA), a non-profit volunteer organization (CHSPIA, 2007). The four different routing options (Routes A through D) which are included under Alternative 4 are discussed in further detail below.

Route A

Ambient Noise Levels. This alternative would deviate from the proposed Project route at Segment 8 Mile Post (MP) 19.2 and run parallel to the existing Walnut/Olinda-Mira Loma 220-kV transmission line for 6.2 miles, 2.3 miles of which would be within the CHSP. Route A would be situated within an existing utility corridor, but would require that the corridor be widened by 150 feet along the length of Route A. It is assumed in this analysis that the noise measurement taken at Crossroads Park in the City of Chino Hills, Noise Measurement Location 11 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), is considered representative of the noise levels in the Alternative 4 Route A study area due to the proximity of the locations and the similar less developed rural nature of the locations. The L_{eq} noise level measured during one 24-hour period at Measurement Location 11 from 3.10-2 (Ambient Noise Levels along Proposed Project Route) was 55 dBA.

Noise-Sensitive Receptors. The setting is rural and undeveloped in nature. There are very few residences along the Route A study area, with the only residential units being low density rural residences within the City of Brea. There are no hospitals, libraries, schools, places of worship, or other facilities within 0.25 mile of the Route A ROW. The major sensitive receptors along Route A would be recreational facilities located within the CHSP. Those include mostly a number of multi-use trails all within one mile of the proposed Route A ROW.

Route B

Ambient Noise Levels. Route B would follow the same path as Route A into CHSP, but instead of terminating at a new switching station, Route B would continue to just beyond the eastern Park boundary, eventually terminating at a new switching station outside of the CHSP. As with the Route A alternative, it is assumed in this analysis that the noise measurement taken at Crossroads Park in the City of Chino Hills, Noise Measurement Location 11 from 3.10-2 (Ambient Noise Levels along Proposed Project Route), is considered representative of the noise levels in the Alternative 4 Route B study area due to the proximity of the locations and the similar less developed rural nature of the locations. The L_{eq} noise level

measured during one 24-hour period at Measurement Location 11 from 3.10-2 (Ambient Noise Levels along Proposed Project Route) was 55 dBA.

Noise-Sensitive Receptors. The setting is rural and undeveloped in nature. There are very few residences along the Route B study area, with the only residential units being low density rural residences within the City of Brea. There are no hospitals, libraries, schools, places of worship, or other facilities within 0.25 mile of the Route B ROW. The major sensitive receptors along Route B would be recreational facilities located within the CHSP, including a number of multi-use trails all within one mile of the proposed Route B ROW.

Route C

Ambient Noise Levels. The proposed Route C alternative would involve the construction of a new transmission line just north of the CHSP, the re-routing of two existing lines within the CHSP, and the removal of existing transmission lines from within the CHSP. As with the Route A alternative, it is assumed in this analysis that the noise measurement taken at Crossroads Park in the City of Chino Hills, Noise Measurement Location 11 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), is considered representative of the noise levels in the Route C study area due to the proximity of the locations and the similar less developed rural nature of the locations. The L_{eq} noise level measured during one 24-hour period at Measurement Location 11 from Table 3.10-2 was 55 dBA.

Noise-Sensitive Receptors. The setting is rural and undeveloped in nature. There are very few residences along the Route C study area, with the only residential units being low density rural residences within the City of Brea. There are no hospitals, libraries, schools, places of worship, or other facilities within 0.25 mile of the Route C ROW. Although the new transmission line associated with Route C would not make any direct crossings of recreational resources within the CHSP, a number of multi-use trails are located within one mile of the proposed Route C ROW.

Route D

Ambient Noise Levels. The proposed Route D alternative would follow the same path as the proposed Route C alternative, but instead of terminating at a switching station at approximately Segment 8 MP 24.7, Route D would continue to follow the northern boundary of CHSP for approximately 2.4 miles, before crossing through part of the Park in a southeasterly direction and terminating at a new switching station just outside the eastern Park boundary. As with the Route A alternative, it is assumed in this analysis that the noise measurement taken at Crossroads Park in the City of Chino Hills, Noise Measurement Location 11 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), is considered representative of the noise levels in the Route D study area due to the proximity of the locations and the similar less developed rural nature of the locations. The L_{eq} noise level measured during one 24-hour period at Measurement Location 11 from Table 3.10-2 was 55 dBA.

Noise-Sensitive Receptors. The setting is rural and undeveloped in nature. There are very few residences along the Route D study area, with the only residential units being low density rural residences within the City of Brea and the City of Chino Hills. There are no hospitals, libraries, schools, places of worship, or other facilities within 0.25 mile of the Route D ROW. The major sensitive receptors along Route D would be recreational facilities located within the CHSP, including a number of multi-use trails all within one mile of the proposed Route D ROW.

3.10.2.5 Alternative 5: Partial Underground Alternative

The proposed route for Alternative 5 (Partial Underground Alternative) would not diverge from that of the proposed Project and therefore, the Affected Environment for Alternative 5 would be identical to the Affected Environment for the proposed Project, as described in Section 2.2 (Alternative 2: SCE's Proposed Project).

Ambient Noise Levels. The Alternative 5 (Partial Underground Alternative) underground location would follow the same path as the proposed Project within Segment 8. For the purposes of this analysis, it is assumed that the noise measurement taken at Edam Street and Avila Avenue within the City of Chino (Segment 8), Noise Measurement Location 12 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), is representative of the noise levels along the underground portion of Alternative 5, due to the similarity in residential development and density of the locations. The L_{eq} noise level measured during one 24-hour period at Measurement Location 12 from Table 3.10-2 was 53 dBA.

Existing Corona Noise Locations 6 and 8 from Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route) represent existing transmission line corona noise along this segment. Existing fair weather corona noise was estimated to be less than 20 dBA at the edge of the study area, while rainy weather corona noise was estimated to range from 23 dBA to 25 dBA.

Noise-Sensitive Receptors. Noise-sensitive receptors along the Alternative 5 route include a number of residences, private country club, education facilities, open space and recreational area, and public/special use facilities.

3.10.2.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

The proposed route for Alternative 6 (Maximum Helicopter Construction in the ANF Alternative) would be identical to that of the proposed Project. This alternative would differ from Alternative 2 in that construction of Alternative 6 would utilize helicopter construction within the ANF to the maximum extent feasible, which would require the establishment and use of helicopter staging areas along Segments 6 and 11 within the ANF.

Ambient Noise Levels. As shown in Table 2.6-1 (Candidate Helicopter Staging Areas in the ANF), which is presented in Chapter 2 (Description of Alternatives) of this EIR/EIS, indicates that all potential helicopter staging areas would be located within the ANF with the exception of one private in-holding site which SCE plans to use for pulling/stringing of the proposed Project (site number 2 from Table 2.6-1), regardless of helicopter construction as proposed with Alternative 6. As these jurisdictions are identical to those of Alternative 2 (proposed Project), the Affected Environment for Alternative 6 would be identical to that of the proposed Project, as described in Section 2.2 (Alternative 2: SCE's Proposed Project). It is assumed for the purposes of this analysis that the noise measurements taken for Segment 11 of the proposed Project are representative of the noise levels near the Alternative 6 helicopter staging areas due to the similarity in rural development within the ANF. These ambient noise measurements were taken at the Pacific Crest National Scenic Trail in the ANF and residential areas outside the ANF, as shown by Noise Measurement Locations 10, 13, and 14 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route). The hourly Leq noise levels measured over a 24-hour period ranged from 41 dBA at Noise Reading Location 10, from 51 dBA at Noise Reading Location 13, and 53 dBA at Noise Reading Location 14.

Noise-Sensitive Receptors. Noise-sensitive receptors in the vicinity of the Alternative 6 helicopter staging areas and flight paths include mostly open space and recreational areas with some dispersed residences, as

discussed in Chapter 2 (Description of Alternatives) and shown in Table 2.6-1 (Candidate Helicopter Staging Areas in the ANF).

3.10.2.7 Alternative 7: 66-kV Subtransmission Alternative

Alternative 7 is identical to the proposed Project except that implementation of this alternative would result in:

- installing one mile of the 66 kV portion of Segment 7 underground (from S7- MP 8.9 – S7-MP 9.9),
- rerouting and undergrounding an approximately 0.8-mile portion of Segment underground (from S7- MP 8.9 – S7-MP 9.9), and
- routing the 66-kV subtransmission line around the Whittier Narrows Recreation Area in Segment 8A between the San Gabriel Junction (S8A MP 2.2) and S8A MP 3.8.

Ambient Noise Levels. As shown in Figures 2.7-1 (Alternative 7: Duck Farm 66-kV Underground) and 2.7-2 (Alternative 7: Whittier Narrows 66-kV Underground and Overhead Re-Routes), which are presented in Chapter 2 (Description of Alternatives), the re-routed portions of the 66 kV lines of this alternative deviate only slightly from equivalent portions of Segment 7 and Segment 8 of the proposed Project. Because the jurisdictions traversed by Alternative 7 are identical to those traversed by the proposed Project, the Affected Environment for Alternative 7 would be identical to that described for the proposed Project in Section 3.10.2.2 (Alternative 2: SCE's Proposed Project). It is assumed for the purposes of this analysis that noise measurement location 12 from Table 3.10-2 (Ambient Noise Levels along Proposed Project Route) within Segment 8 of Alternative 2 is representative of the existing ambient noise levels near the proposed Alternative 7 subtransmission line routes due to the similarity in urban development and proximate location of the ambient measurement. As shown in Table 3.10-2 (Ambient Noise Levels along proposed Project Route), the hourly Leq noise levels measured over a 24-hour period at this location was 53 dBA.

Noise-Sensitive Receptors. Noise-sensitive receptors along the re-routed and underground portions of this alternative include residences, schools, and parks. Specifically, South El Monte High School is located approximately 300 feet from the nearest underground portion of Segment 7 that would be located along Durfee Avenue.

3.10.3 Applicable Laws, Regulations, and Standards

3.10.3.1 Federal

United States Environmental Protection Agency (US EPA)

There are no federal noise standards that directly regulate environmental noise. Table 3.10-6 (Examples of Protective Noise Levels Recommended by U.S. EPA) provides a summary of recommended noise levels for protecting public health and welfare with an adequate margin of safety. With regard to noise exposure of workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise (29 CFR Section 1910.95, Code of Federal Regulations).

Table 3.10-6. Examples of Protective Noise Levels Recommended by U.S. EPA		
Effect	Maximum Level	Exterior or Interior Area
Hearing loss	$L_{eq}(24) < 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} < 55$ dB	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.
	$L_{eq}(24) < 55$ dB	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} < 45$ dB	Indoor residential areas.
	$L_{eq}(24) < 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: USEPA, 1974

Angeles National Forest (ANF)

The existing 2005 ANF Land Management Plan (2005 Forest Plan), which regulates policy-driven requirements on National Forest System (NFS) lands in the ANF, does not explicitly identify noise as an issue and does not suggest any specific noise strategies, standards, or regulations. (USDA, 2005) The Forest Plan addresses the need to reduce conflicts with recreation in the Forest, including as related to noise; however, as previously noted, Project impacts related to recreation, including those related to noise, are discussed in the Wilderness and Recreation analysis presented in Section 3-15 of this EIR/EIS. The Forest Plan additionally addresses the need to reduce disturbance to wildlife and biological resources in the Forest, including as related to noise; however, as with recreation, any impacts to wildlife and biological resources that would occur as a result of Project-related noise are addressed in full detail in the Biological Resources analysis presented in Section 3-4 of this EIR/EIS.

3.10.3.2 State

The State of California requires each local government to perform noise surveys and implement a noise element as part of its general plan (OPR, 2003). Table 3.10-7 (Land Use Compatibility for Community Noise Environment) shows the State guidelines for evaluating the compatibility of various land uses as a function of noise exposure.

3.10.3.3 Local

Each local government aims to protect its residents from intrusive noise during both construction and operational activities. Due to the high number of local jurisdictions traversed by the proposed Project and alternatives (20 cities within 3 counties), many local General Plan policies and Municipal Code noise ordinances aimed to reduce noise impacts to receptors apply to both construction and operational noise generated by the proposed Project and alternatives. These applicable policies and ordinances are identified and analyzed for consistency below in impact discussions NOI-1 and NOI-2 for the proposed Project and alternatives.

Table 3.10-7. Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE – L_{dn} or CNEL (db)													
	50		55		60		65		70		75		80	
Residential - Low Density Single Family, Duplex, Mobile Home														
Residential - Multi-Family														
Transient Lodging - Motels, Hotels														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditorium, Concert Hall, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings, Business Commercial and Professional														
Industrial, Manufacturing, Utilities, Agriculture														

	Normally Acceptable. Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable. New construction or development should generally not be undertaken.

Source: OPR, 2003

3.10.4 Impact Analysis Approach

3.10.4.1 Criteria for Determining Impact Significance

NEPA does not require that significance conclusions be made for predicted environmental impacts; however, in order to satisfy CEQA requirements for this joint EIR/EIS, this noise analysis includes conclusions regarding the significance of each identified noise impact that would result from the proposed Project and alternatives. The following significance criteria for noise were derived from previous environmental impact assessments and from the CEQA Guidelines (Appendix G, Environmental Checklist Form, Section IX). Noise impacts of the proposed Project or an alternative would be considered significant and would require mitigation to reduce significance if one of the following criteria is met:

- Criterion NOI1: A substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above levels existing without the Project.
- Criterion NOI2: A permanent and substantially higher level of ambient noise source in the vicinity of sensitive receptors.

As mentioned, significance conclusions for individual impacts are not required for compliance with NEPA and therefore, conclusions presented in the following analysis are provided for the purposes of CEQA only. Consistent with CEQA significance Criteria NOI1 and NOI2, presented above, two of the primary determinants in whether a noise impact would be significant include: 1) a substantial increase of ambient noise levels, and 2) the presence of sensitive noise receptors.

Noise Threshold. Given that environmental noise levels vary widely over time, an increase in ambient noise levels of three dBA is the minimum change that is perceptible and recognizable by the human ear. An increase in day-night environmental noise levels of more than five dBA (Ldn or CNEL) is considered to be a substantial increase. Intermittent noise sources that are temporary or periodic may also be substantial over shorter durations if it is determined that increases over five dBA could occur. For the purposes of this noise analysis, a predicted (modeled) change in ambient noise of five dBA or more is considered to be substantial.

Sensitive Noise Receptors. The potential significance of a predicted identified noise impact is directly related to the presence and proximity of sensitive noise receptors. Sensitive noise receptors can include private residences, schools, churches, and medical facilities, as well as any other land uses that are generally considered to be more susceptible to noise disturbance than other uses. If it is predicted that a substantial increase in ambient noise level would occur (i.e. greater than five dBA) but no sensitive noise receptors are present, the identified impact would not be considered to be significant.

3.10.4.2 Applicant-Proposed Measures (APMs)

Applicant-Proposed Measures (APMs) that address potential noise impacts were identified by SCE in the Proponent's Environmental Assessment (PEA). Table 3.10-8 presents the APMs that are relevant to the issue area of noise. APMs are a commitment by the Applicant (SCE) and are considered part of the proposed Project. Therefore, the following discussions of impact analysis assume that all APMs will be implemented as defined in Table 3.10-8.

Table 3.10-8. Applicant-Proposed Measures – Noise	
APM NOI-1	Limit Hours and Days for Construction. SCE would comply with all applicable noise ordinances pertaining to construction hour limitations. In the event that construction must occur outside the allowable work hours, a variance would be obtained.
APM NOI-2	Substation Noise Minimization. SCE would conduct noise studies at substations where noise emitting equipment is proposed (e.g., Antelope and Vincent substations). The results of these studies would be used to determine appropriate noise minimization measures, such that no local noise ordinance limits would be exceeded. Measures to accomplish this may include specifying quieter equipment from the manufacturer, installing noise control devices, and installing sound barriers and enclosures.
APM NOI-3	Advance Notification. SCE would provide advanced notification of construction to the pertinent businesses and residences when appropriate and feasible.
APM NOI-4	Establish Toll Free Number. SCE would establish a toll free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers.

In addition to the APMs identified in Table 3.10-8, mitigation measures are also recommended in the following impact analysis where it has been determined that the identified APMs would not fully mitigate the impacts for which they are presented.

3.10.4.3 Impact Assessment Methodology

The methodology used in this noise analysis was developed and presented in the TRTP Noise Technical Report (CH2MHill, 2007). This analysis first established baseline noise conditions for the affected environment along the Project ROW, as presented above in Section 3.10.2. This affected environment, representative of baseline conditions, included a description of ambient noise measurements, a calculation of existing transmission line corona discharge noise generated within the ROW, and an identification of sensitive noise receptors along the route. Baseline conditions were evaluated for their potential to be affected by construction activities as well as operation and maintenance activities for the proposed Project and alternatives. This noise analysis is based on information presented in SCE's PEA regarding construction and maintenance activities, as well as information presented in the TRTP Noise Technical Report regarding operational corona noise. For the purposes of this analysis, operational noise is represented by the modeled corona discharge noise that would be generated by the new transmission line and substation facilities, as calculated in the TRTP Noise Technical Report (CH2MHill, 2007).

3.10.5 Alternative 1: No Project/Action

The No Project/Action Alternative includes the assumption that existing transmission lines and power plants would continue to operate. The effects that these facilities cause on the existing environment would not change, so no new impacts would occur from continuing operation of the existing transmission lines and power plants. Also, under the No Project/Action Alternative, the proposed Project would not be constructed, so the impacts associated with construction and operation of the Project would not occur. As such, the No Project/Action Alternative would avoid construction-related or operational noise changes associated with the proposed Project and all identified alternatives (Alternatives 3 through 7), including permanent increases in audible corona noise along the ROW. However, under the No Project/Action Alternative, construction of new facilities would be required as described below.

As indicated in Section 2.1 (Alternative 1: No Project/Action), some currently unknown plan would need to be developed to provide the transmission upgrades necessary to interconnect renewable generation projects in the Tehachapi area and to also address the existing transmission problems south of Lugo

Substation. Similarly, other yet unspecified transmission upgrades would presumably be proposed in the future to provide the needed capacity and reliability to serve growing electrical load in the Antelope Valley. To interconnect wind projects in the Tehachapi area, it is possible that other electrical utilities with transmission facilities in the area, such as LADWP, might purchase some of the power from Tehachapi wind developers and integrate it into their system. Another possibility is for the development of a private transmission line, similar to the existing Sagebrush line that could connect wind projects to the electrical grid. However, at this time, the Lead Agencies do not know what alternate transmission schemes might be proposed in the future to accomplish the Project objectives if the proposed Project is not implemented.

The noise impacts of these required No Project actions would depend on their locations, which cannot be predicted. New construction activities and operating facilities would need to comply with local noise ordinances and the local licensing process, which would include strategies to reduce noise and noise-related impacts. Substantial temporary construction and long-term operational noise impacts could occur to any noise sensitive uses near possible power plants, substations, and new transmission facilities. Therefore, it is likely that under the No Project/Action Alternative, similar short-term and temporary construction noise impacts and adverse operational noise impacts similar to those described below for the proposed Project would occur.

3.10.6 Alternative 2: SCE's Proposed Project

3.10.6.1 Direct and Indirect Effects Analysis

The following section describes the proposed Project's noise impacts, as determined by the significance criteria listed in Section 3.10.4.1. As previously described, the significance of each identified impact is determined based on whether a substantial increase in ambient noise would occur (i.e. equal to or greater than five dBA), considered in conjunction with the presence and proximity of sensitive noise receptors. Mitigation measures are introduced where necessary in order to reduce significant impacts to less-than-significant levels.

Substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above existing levels (Criterion NOI1)

Impact N-1: Construction noise would substantially disturb sensitive receptors.

Construction of the proposed Project would involve the use of heavy equipment, including helicopters, to transport material and install transmission line towers, conductors, and substation facilities for electrical tie-ins. Cranes and other heavy equipment would be used in the erection of towers and installation of conductors. Grading would be required for staging areas, transmission line tower foundation pads, conductor pull areas, and in creating spur roads and/or improving access along some roads. In addition, grading would be required at proposed new (Whirlwind) and expanded substations (Vincent). Due to these construction activities, construction noise would result in temporary yet substantial increases in ambient noise levels in the vicinity of the proposed Project route, substation locations, marshalling yards, staging locations, and along all access routes. All noise-sensitive receptors located within approximately 200 feet of construction activities would be affected by this construction noise. Construction of the proposed Project would result in noise levels (L_{eq}) ranging from greater than 83 dBA at 50 feet from the noise source to 52 dBA from approximately 3,200 feet from the edge of the ROW, as shown in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance).

Mobile construction noise would be generated by vehicle and helicopter use. All materials associated with construction efforts would be delivered by truck or helicopter to established marshalling yards. Delivery activities requiring major street use would be scheduled to occur during off-peak traffic hours. In the event that there are no existing access roads to tower locations, approximately one or two small helicopters would be used to transport equipment to tower sites for conductor and associated hardware removal. These mobile noise sources, and particularly the helicopters, would generate substantial noise that would affect nearby sensitive receptors.

A large, heavy lift helicopter would be used for removal of the existing 220-kV towers. It is estimated that the small helicopter would generally operate from Monday through Friday for up to 8 hours per day, while the large helicopter would operate approximately 6 to 8 hours per day. Helicopter staging areas would include SCE-identified staging areas (such as Fox Field or Rio Hondo Substation), material and equipment yards, and positions along the utility corridors that have previously been used for this purpose and that SCE has determined are safe locations for landing. In addition, it is anticipated that a helicopter may be used for installation of new 500-kV LSTs or TSPs. The location of staging areas would likely change as work progresses to minimize the length of required helicopter trips. The number of towers to be constructed by helicopter and the time required for the construction would depend upon final engineering, the determination of the appropriate construction methods to be used by SCE's contractor, and the construction schedule ultimately prepared by SCE's contractor. Sensitive noise receptors located in the vicinity of helicopter staging areas and along helicopter flight paths would be affected by substantial temporary noise increases generated by the helicopters.

All helicopter construction activities included under the proposed Project would be conducted in compliance with regulations and restrictions applicable to aircraft, including as set forth by the Federal Aviation Administration (FAA), the USDA Forest Service, and all other applicable agencies. As such, helicopters used for Project construction would not land within the boundaries of designated Wilderness Areas (WAs), including the San Gabriel WA which is adjacent to the east of a portion of Segment 6. Temporary construction noise from helicopters used in the construction of select transmission towers for the proposed Project would potentially disturb recreationists and wildlife along the length of Segments 6 and 11 in the ANF, as respectively discussed in the Wilderness and Recreation analysis (Section 3.15) and the Biological Resources analysis (Section 3.4).

Ground-borne vibration generated by construction vehicles, equipment, and related activities may also affect sensitive noise receptors. Typically, ground-borne vibration attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source (FTA, 1995). It is anticipated that no sources of ground-borne vibration would affect sensitive noise receptors outside of the work areas.

Mitigation Measures for Impact N-1

N-1a **Implement Best Management Practices for construction noise.** SCE shall comply with local noise rules, standards, and/or ordinances by implementing the following noise-suppression techniques, at a minimum, to avoid possible violations of local rules, standards, and ordinances during construction:

- On construction equipment, use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Install temporary sound walls or acoustic blankets around stationary noise sources (e.g., generators, pumps) to shield adjacent sensitive receptors. These 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.

- Minimize unnecessary construction vehicle idling time (see also Mitigation Measure AQ-1g, Restrict diesel engine idling to 5 minutes). The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. A "common sense" approach to vehicle use shall be applied; if a vehicle is not required for use immediately or continuously for construction activities, its engine shall be shut off. (Note: Certain equipment, such as large diesel powered vehicles, require extended idling for warm-up and repetitive construction tasks and would therefore not be subject to being shut off when not in use.)

N-1b **Avoid sensitive receptors during mobile construction equipment use.** SCE shall route all construction traffic and helicopter flight away from residences, schools, and recreational facilities to the maximum extent feasible.

CEQA Significance Conclusion

Construction noise would result in a substantial increase in noise levels (greater than five dBA) within 200 feet of construction activities along the proposed Project ROW. The proposed Project route is linear and construction in any one location along the ROW would only occur for a limited time before moving to another location along the ROW. SCE would implement the following APMs to reduce the effects of construction noise on sensitive receptors during construction: NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number). These APMs would require the construction contractor to comply with all applicable noise ordinances pertaining to construction hour limits, provide advance notice of the construction schedule to nearby residents and provide a public liaison, post notices along the Project ROW and at work sites to ensure that all surrounding uses are made aware of the proposed construction in advance, and to provide a toll free telephone number for Project information and noise complaints.

To further reduce noise impacts from stationary construction equipment, Mitigation Measure N-1a (Implement Best Management Practices for construction noise) is required. This mitigation measure would ensure that stationary construction equipment noise that is audible to sensitive noise receptors would be reduced to the maximum extent feasible. In addition, Mitigation Measure N-1b (Avoid sensitive receptors during mobile construction equipment use) is also required in order to ensure that mobile construction noise generated by the use of ground-based vehicles as well as helicopters would reduce impacts to sensitive noise receptors to the maximum extent feasible.

Despite the implementation of these APMs and mitigation measures, maximum construction noise levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance) would substantially exceed ambient noise conditions along the proposed Project route, which are presented in Table 3.10-2 (Ambient Noise Levels along Proposed Project Route), and would affect sensitive noise receptors throughout the Project area. The presence of sensitive noise receptors along each segment of the proposed Project is described in Section 3.10.2.2 (Affected Environment: Alternative 2). Sensitive noise receptors are not located along every Project segment and therefore this impact would either not occur or would occur to a lesser magnitude for some Project segments (such as Segments 6 and 11 in the ANF). However, in accordance with CEQA, impact significance determinations must be provided for the project as a whole, and not for individual segments of the project. Therefore, the CEQA impact significance determination for this impact is representative of the Project's overall affect.

Although construction noise would be temporary and would be reduced by implementation of APMs NOI-1, NOI-3, and NOI-4, and Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use), the level of construction noise would be substantially higher than ambient noise and would disturb sensitive receptors located within 200 feet of construction activities. Impact N-1 would be significant and unavoidable (Class I).

Impact N-2: Construction noise levels would violate local standards.

A thorough review of all applicable ANF, county and city General Plans and Noise Control Ordinances was completed for all jurisdictions traversed by the proposed Project. Table 3.10-9 (Noise Policy Compliance Table – Construction) presents a consistency analysis of the proposed Project to these applicable noise ordinances and policies.

Table 3.10-9. Noise Policy Compliance Table - Construction

Applicable Policy	Compliance Analysis
ANF Land Management Plan	
The 2005 Forest Plan does not explicitly identify noise as an issue and does not suggest any specific noise strategies, standards, or regulations. Therefore, no violations of the 2005 Forest Plan would occur as a direct result of the noise levels associated with construction activities allowed through a Special Use authorization for the ANF.	Based on the noise levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), light-duty helicopters and trucks that would be used during construction activities would generate noise levels of approximately 83 dBA at 50 feet and approximately 74 dBA at 200 feet, respectively. These temporary construction noise levels would affect passive recreational activities, as addressed in the Wilderness and Recreation analysis (Section 3.15) and wildlife habitat values as addressed in the Biological Resources analysis (Section 3.4). Management direction for recreation and wildlife habitat in the ANF is provided in the 2005 Forest Plan and discussed in the respective issue area sections of this EIR/EIS.
Kern County General Plan Noise Element	
No noise policies apply during construction.	Construction activities would be compliant with the Kern County General Plan Noise Element.
San Bernardino County General Plan Noise Element	
No noise policies apply during construction.	Construction activities would be compliant with the San Bernardino County General Plan Noise Element.
San Bernardino County Municipal Code Noise Ordinance	
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.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this San Bernardino County ordinance.
Los Angeles County Municipal Code Noise Control Ordinance	
For construction noise, the Noise Control Ordinance of Los Angeles County prohibits construction activities between weekday hours of 7:00 p.m. and 7:00 a.m. or at any time on Sundays or holidays (Section 12.08.440, Part A) if it may cause a disturbance at a nearby residential or commercial property.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this Los Angeles County ordinance.
Exterior noise standards for designated land use zones and time intervals (Section 12.08.390) during construction. ▪ Single Family Residential: Exterior Noise Level not to exceed 75 dBA from mobile construction equipment or	Based on noise levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), only single-family residences located within 200 feet and multi-family residences located within approximately 75 feet of construction

Table 3.10-9. Noise Policy Compliance Table - Construction	
Applicable Policy	Compliance Analysis
60 dBA from stationary construction equipment ▪ Multi-Family Residential: Exterior Noise Level not to exceed 80 dBA from mobile construction equipment or 65 dBA from stationary construction equipment ▪ Semi-Residential/Commercial: Exterior Noise Level not to exceed 85 dBA from mobile construction equipment or 70 dBA from stationary construction equipment	areas could be subject to violations of this ordinance. To ensure construction equipment noise impacts to sensitive receptors would be reduced to the maximum extent feasible, Mitigation Measures N-1a and N-1b would be required. However, construction noise within residential areas would violate the Los Angeles County standard.
City of Baldwin Park General Plan	
It is unlawful for any person within a residential zone, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device (between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefore has been duly obtained from the Department of Public Works	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Baldwin Park General Plan policy.
Exterior noise standards for designated land use zones during construction. ▪ Residential Zone R-1: Exterior Noise Level not to exceed 55 dBA from 7am to 7pm and 45 dBA from 7pm to 7am ▪ Residential Zone RG and R-3: Exterior Noise Level not to exceed 60 dBA from 7am to 7pm and 55 dBA from 7pm to 7am ▪ Commercial Zone: Exterior Noise Level not to exceed 65 dBA from 7am to 7pm and 60 dBA from 7pm to 7am ▪ Industrial Zone: Exterior Noise Level not to exceed 70 dBA from 7am to 7pm and 70 dBA from 7pm to 7am	Based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), R-1 zone residences located within approximately 2,000 feet, RG and R-3 zone residences located within approximately 1,000 feet, commercial zone structures located within approximately 600 feet, and industrial zone structures located within approximately 200 feet of construction areas could be subject to violations of this ordinance. To ensure construction equipment noise impacts to sensitive receptors would be reduced to the maximum extent feasible, Mitigation Measures N-1a and N-1b would be required. However, construction noise would occur within closer distances to these sensitive receptors along the proposed route. Therefore, noise generated during construction activities would be not be compliant with this City of Baldwin Park General Plan policy.
City of Chino Municipal Code Noise Ordinance	
Construction noise is exempt if the noise sources associated with or vibration created by construction, repair, remodeling or grading of any real property or during authorized seismic surveys, provided said activities do not take place outside the hours for construction as defined in Section 15.44.030 of this code, and provided the noise standard of sixty-five dBA plus the limits specified in Section 9.40.040(B) as measured on residential property and any vibration created does not endanger the public health, welfare and safety.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Chino ordinance.
Construction shall occur only between the hours of 7 a.m. and 8 p.m. Monday through Saturday, with no construction allowed on Sundays and Federal holidays.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Chino ordinance.
City of Chino Hills Municipal Code Noise Ordinance	
Construction shall only take place between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 6:00 p.m. on Saturdays, excluding federal holidays.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours.

Table 3.10-9. Noise Policy Compliance Table - Construction	
Applicable Policy	Compliance Analysis
	Construction activities would be compliant with this City of Chino Hills ordinance.
City of Duarte Municipal Code Noise Ordinance	
It is unlawful for any person within a residential zone, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device (between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefore has been duly obtained from the Department of Public Services.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Duarte ordinance.
Exterior noise standards for designated land use zones during construction. ▪ Residential Zone R-1 and R-2: Exterior Noise Level not to exceed 55 dBA from 7am to 9pm and 45 dBA from 9pm to 7am ▪ Residential Zone R-3 and R-4: Exterior Noise Level not to exceed 55 dBA from 7am to 9pm and 50 dBA from 9pm to 7am ▪ Commercial Zone: Exterior Noise Level not to exceed 60 dBA from 7am to 9pm and 55 dBA from 9pm to 7am ▪ Industrial and Light Manufacturing Zone: Exterior Noise Level not to exceed 70 dBA from 7am to 9pm and 70 dBA from 9pm to 7am	Based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), R-1 through R-4 zone residences located within approximately 2,000 feet, commercial zone structures located within approximately 1,000 feet, and industrial zone structures located within approximately 600 feet of construction areas could be subject to violations of this ordinance. To ensure construction equipment noise impacts to sensitive receptors would be reduced to the maximum extent feasible, Mitigation Measures N-1a and N-1b would be required. However, construction noise would occur within closer distances to these sensitive receptors along the proposed route. Therefore, noise generated during construction activities would be not be compliant with this City of Duarte ordinance.
City of Industry Municipal Code Noise Ordinance	
No noise policies apply during construction.	Construction activities would be compliant with the City of Industry ordinances.
City of Irwindale Municipal Code Noise Ordinance	
It is unlawful for any person to willfully make or continue, or cause to be made or continued any noise at a level which exceeds by more than 5 dBA of the ambient base level and is unlawful for any person within a residential zone, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device violating the following exterior noise standards for designated land use zones during construction beforehand a permit therefore has been duly obtained from the Department of Public Services: ▪ Residential Zone: Exterior Noise Level not to exceed 50 dBA from 7am to 10pm and 50 dBA from 10pm to 7am ▪ Commercial Zone: Exterior Noise Level not to exceed 55 dBA from 7am to 10pm and 50 dBA from 10pm to 7am ▪ Industrial Zone: Exterior Noise Level not to exceed 60 dBA from 7am to 10pm and 70 dBA from 10pm to 7am	The portion of Segment 7 located in the City of Irwindale is not located within 500 feet of a residential zone. Therefore, construction activities would be compliant with this City of Irwindale ordinance.

Table 3.10-9. Noise Policy Compliance Table - Construction	
Applicable Policy	Compliance Analysis
City of La Canada Flintridge Municipal Code Noise Ordinance	
Any construction or repair work of any kind which makes loud noises exceeding a decibel level of 65 dBA as measured from any adjacent residential property line may be allowed during the following hours: ▪ Monday – Friday 7 a.m. to 6 p.m. ▪ Saturday 9 a.m. to 5 p.m. ▪ None allowed on Sunday and Holidays. During daylight savings time the following times shall be obeyed: ▪ Monday – Friday 7 a.m. to 7 p.m. ▪ Saturday 9 a.m. to 5 p.m. ▪ None allowed on Sunday and Holidays.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of La Canada Flintridge ordinance.
City of La Habra Heights Municipal Code Noise Ordinance	
Construction equipment or activities (including demolition, grading, site preparation, etc.) is prohibited weekdays and Saturdays between the hours of 7 p.m. and 7 a.m., or at any time on Sundays or holidays unless specifically exempted.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of La Habra Heights ordinance.
Construction noise between 7 a.m. and 7 p.m. shall not be louder than 65 dBA.	Based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), construction activities would generate noise louder than 65 dBA. Therefore, noise generated during construction activities would be not be compliant with this City of La Habra Heights ordinance.
The operation of any internal combustion engine or other equipment without a proper muffler or other factory installed noise attenuation equipment is prohibited.	Mitigation Measure N-1a includes the following: "On construction equipment, use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer ". With the incorporation of this measure, construction activities would be compliant with this City of La Habra Heights ordinance.
Any device that creates vibration that is above the vibration perception threshold of any individual (motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz) at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public ROW is prohibited.	Man-made vibration issues are usually confined to short distances (i.e., 500 feet or less) from the source. Based on the distance of the ROW and receptors from vibration construction activities, and Mitigation Measures N-1a and N-1b specified to ensure construction equipment noise impacts to sensitive receptors would be reduced to the maximum extent feasible, it is assumed vibration impacts during construction would be less than the specified threshold. With incorporation of these measures, construction activities would be compliant with this City of La Habra Heights ordinance.
City of Lancaster General Plan	
No noise policies apply during construction.	Construction activities would be compliant with the City of Lancaster General Plan Noise Element.
City of Lancaster Municipal Code Noise Ordinance	
Prohibition against performing construction activities between the hours of 8:00 p.m. and sunrise, and all day on Sundays (Section 8.24.040). In addition, the operation of loud construction activities (e.g., earth moving, jack hammering, drilling, etc.) is prohibited within 500 feet of an occupied dwelling from 8:00 p.m. until sunrise.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Lancaster ordinance.

Table 3.10-9. Noise Policy Compliance Table - Construction	
Applicable Policy	Compliance Analysis
City of Montebello Municipal Code Noise Ordinance	
Prohibits the blowing of any mechanical whistle attached to a stationary location except to give notice of the time to begin or stop work, or as a warning of fire danger or upon the request of proper city authorities.	It is assumed that during construction mechanical whistles attached to a stationary location would not be used except to give notice of the time to begin or stop work, or as a warning of fire danger. Construction activities would be compliant with this City of Montebello ordinance.
Prohibits noise sources associated with construction, demolition, grading repair or remodeling of any real property other than between the hours of 7 a.m. and 8 p.m. on weekdays (Monday through Friday) and 9 a.m. to 6 p.m. on Saturdays, Sundays, and legal holidays.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Montebello ordinance.
Prohibits the creation of noise adjacent to any school, institution of learning, church or court while the same are in use, or adjacent to any medical facility, including but not limited to, a hospital, medical office, clinic, or any location where medical treatment is rendered, which unreasonable interferes with the workings of such institution, or which unreasonably disturbs the occupants of or visitors to these structures.	To ensure construction equipment noise impacts to sensitive receptors would be reduced to the maximum extent feasible, Mitigation Measures N-1a and N-1b would be required. However, construction noise would occur within close distances to these sensitive receptors in the residential areas along the proposed route. Therefore, noise generated during construction activities would be not be compliant with this City of Montebello ordinance.
Prohibits any pile driver, pneumatic hammer, bulldozer or other construction vehicles, motorized hoists or other devices operated between the hours of 8 p.m. and 7 a.m.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Montebello ordinance.
City of Monterey Park Municipal Code Noise Ordinance	
No noise policies apply during construction.	Construction activities would be compliant with the City of Monterey Park Municipal Noise Code Ordinance.
City of Ontario Municipal Code Noise Ordinance	
Construction noise is exempt if the activities occur between 7:00 a.m. and 6:00 p.m. on any day or between 9:00 a.m. and 6:00 p.m. on Saturday or Sunday.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Ontario ordinance.
City of Palmdale General Plan	
No noise policies apply during construction.	Construction activities would be compliant with the City of Palmdale General Plan Noise Element.
City of Palmdale Municipal Code Noise Ordinance	
Prohibition against performing construction activities between the hours of 8:00 p.m. and 6:30 p.m.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Palmdale ordinance.
City of Pasadena Municipal Code Noise Ordinance	
Exterior noise standards for designated land use during construction: ▪ Noise District I: Exterior Noise Level not to exceed 50 dBA from 6am to 11pm and 40 dBA from 11pm to 6am	Based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), construction activities would generate noise louder than 60 dBA. Therefore, noise generated during construction activities would

Table 3.10-9. Noise Policy Compliance Table - Construction	
Applicable Policy	Compliance Analysis
▪ Noise District II: Exterior Noise Level not to exceed 55 dBA from 6am to 11pm and 45 dBA from 11pm to 6am ▪ Noise District III: Exterior Noise Level not to exceed 60 dBA from 6am to 11pm and 50 dBA from 11pm to 6am	be not be compliant with this City of Pasadena ordinance.
No person shall operate any pile driver, power shovel, pneumatic hammer, derrick power hoist, forklift, cement mixer or any other similar construction equipment within a residential district or within a radius of 500 feet there from in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance at any time other than as listed below: ▪ From 7 am to 7 pm Monday through Friday ▪ From 8 am to 5 pm on Saturday ▪ Operation of any of the listed construction equipment is prohibited on Sundays and Holidays	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Pasadena ordinance.
It is unlawful for any person to operate any powered construction equipment if the operation of such equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet from such equipment.	Based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), noise levels would be approximately 83 dBA within approximately 50 feet of construction areas and 79 dBA within 100 feet of construction areas. Therefore, construction activities would be compliant with this City of Pasadena ordinance.
It is unlawful to create any noise on any street, sidewalk, or public place adjacent to any school, institution of learning, or church while the same is in use or adjacent to any hospital, which noise unreasonably interferes with the workings of such institution or which disturbs or unduly annoys patients in the hospital, provided conspicuous sings are displayed in such streets, sidewalk or public place indicating the presence of a school, church or hospital.	To ensure construction equipment noise impacts to sensitive receptors would be reduced to the maximum extent feasible, Mitigation Measures N-1a and N-1b would be required. However, construction noise would occur within close distances to these sensitive receptors in the residential areas along the proposed route. Therefore, noise generated during construction activities would be not be compliant with this City of Pasadena ordinance.
City of Pico Rivera Municipal Code Noise Ordinance	
No noise policies apply during construction.	Construction activities would be compliant with the City of Pico Rivera Municipal Noise Code Ordinance.
City of San Gabriel Municipal Code Noise Ordinance	
No noise policies apply during construction.	Construction activities would be compliant with the City of San Gabriel Municipal Noise Code Ordinance.
City of South El Monte Municipal Code Noise Ordinance	
No person shall operate or permit the operation of any device or machine that creates a vibration above the vibration perception threshold when measured at or beyond the property boundary of the source.	Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source. Based on the distance of the ROW and receptors from vibration construction activities, and Mitigation Measures N-1a and N-1b specified to ensure construction equipment noise impacts to sensitive receptors would be reduced to the maximum extent feasible, it is assumed vibration impacts during construction would be less than the specified threshold. With the incorporation of these measures, construction activities would be compliant with this City of South El Monte ordinance.
No person shall operate or permit the operation of any mechanically powered saw, sander, drill, grinder, lawn or garden tool, or any tool involved in any manufacturing process, so as to create a noise disturbance across a real property boundary line of property developed entirely of partially for residential use.	Based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), noise generated during construction from equipment would likely travel across the ROW and construction zones and be perceptible to residential receptors. Due to the proximity of residential receptors within the City of South El Monte to the proposed Project, it is assumed construction activities would not be compliant with this City of South El Monte ordinance.

Table 3.10-9. Noise Policy Compliance Table - Construction	
Applicable Policy	Compliance Analysis
City of Temple City Municipal Code Noise Ordinance	
No noise policies apply during construction.	Construction activities would be compliant with the Temple City Municipal Noise Code Ordinance.
City of Whittier Municipal Code Noise Ordinance	
Maximum noise levels for nonscheduled, intermittent, short-terr operation (less than 10 days) of mobile equipment: ▪ Single Family Residential: Exterior Noise Level not to exceed 75 dBA from 7am to 7pm and 60 dBA from 7pm to 7am ▪ Multi Family Residential: Exterior Noise Level not to exceed 80 dBA from 7am to 7pm and 65 dBA from 7pm to 7am ▪ Residential/Commercial: Exterior Noise Level not to exceed 85 dBA from 7am to 7pm and 70 dBA from 7pm to 7am	With implementation of APM NOI-3, SCE would provide advanced notification of construction to the pertinent businesses and residences when appropriate and feasible. Therefore, all construction would be scheduled. Construction activities would be compliant with this City of Whittier ordinance.
Maximum noise levels for nonscheduled, intermittent, short-terr operation (less than 10 days) of stationary equipment: ▪ Single Family Residential: Exterior Noise Level not to exceed 60 dBA from 7am to 7pm and 50 dBA from 7pm to 7am ▪ Multi Family Residential: Exterior Noise Level not to exceed 65 dBA from 7am to 7pm and 55 dBA from 7pm to 7am ▪ Residential/Commercial: Exterior Noise Level not to exceed 70 dBA from 7am to 7pm and 60 dBA from 7pm to 7am	With implementation of APM NOI-3, SCE would provide advanced notification of construction to the pertinent businesses and residences when appropriate and feasible. Therefore, all construction would be scheduled. Construction activities would be compliant with this City of Whittier ordinance.
Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7 p.m. and 7 a.m., or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line.	With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Construction activities would be compliant with this City of Whittier ordinance.
Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment, daily, including Sundays and legal holidays, all hours is 85 dBA.	Based on levels presented in Table 3.10-4 (Estimated Construction Equipment Noise Levels Versus Distance), noise levels would be approximately 83 dBA within approximately 50 feet of construction areas and 79 dBA within 100 feet of construction areas. Therefore, construction activities would be compliant with this City of Whittier Municipal Code ordinance.

Source: References for each agency's policies and ordinances are presented in Chapter 8 (References).

CEQA Significance Conclusion

Construction noise would result in a substantial increase (greater than five dBA) in ambient noise levels along the Project route and would not be compliant with several local standards, as discussed above in Table 3.10-9 (Noise Policy Compliance Table – Construction). SCE would implement the following APMs to reduce construction noise levels: NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number). Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use), which are introduced under Impact N-1, would also be implemented to reduce construction noise levels.

In addition, Mitigation Measure L-2b (Aircraft flight path and safety provisions and consultations), which is introduced and described in the Land Use analysis (Section 3.9) of this EIR/EIS, would also be

required in order to ensure that all appropriate agencies, including the FAA, are consulted with prior to the onset of helicopter operations, thereby ensuring that policies and regulations applicable to helicopter use for Project construction are fully observed.

However, despite implementation of the Project APMs and mitigation measures listed above, the level of construction noise would violate several local noise ordinances and standards, as described above in Table 3.10-10 (Noise Policy Compliance Table – Construction). This impact would not occur along Segments 6 and 11 in the ANF because the 2005 Forest Plan does not address noise levels in the Forest; however, as previously described and in accordance with CEQA, impact significance determinations must be provided for the project as a whole, and not for individual segments of the project. Therefore, because local plan violations would occur regardless of mitigation measure implementation, Impact N-2 would be significant and unavoidable (Class I).

A permanent and substantially higher level of ambient noise source in the vicinity of sensitive receptors (Criterion NOI2)

Impact N-3: Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations.

Noise from operation of the proposed Project would come from two primary sources: electrical and related equipment (e.g., transformers and fans) at the substations, and corona discharge associated with the 500-kV and 220-kV transmission lines. Noise would also be generated by vehicles and equipment during routine inspection and maintenance of the transmission line, which would be accomplished primarily by truck, but may also require helicopter access in some locations. Routine maintenance and inspection would occur on average once a year.

Corona and Substation Noise

As discussed in Section 3.10.2.2 (Affected Environment: Alternative 2), corona noise generated during fair weather conditions is less than that generated during wet weather conditions. It should be noted that existing ambient noise measurements taken along the proposed Project ROW, as shown in Table 3.10-3 (Existing Audible Corona Noise along Proposed Project Route), were conducted under fair weather conditions, and higher levels would be expected under rainy conditions. Foul weather or rainy conditions occur periodically and seasonally each year along the proposed Project alignment and while they are considered a temporary and periodic condition, these periods would result in the maximum operational noise levels and are used as the basis for this operational evaluation in order to analyze worst-case operational noise scenario.

The following discussion analyzes the potential for operational noise to represent a substantial increase from existing ambient noise levels, and to affect sensitive noise receptors along each segment of the proposed Project. This analysis is based on a comparison of existing ambient noise with the results of operational noise modeling, as well as consideration of the presence and proximity of sensitive noise receptors, as described in Section 3.10.2 (Affected Environment).

Segment 4. The overall existing ambient noise measured along this segment was 40 dBA, while existing wet weather corona noise was estimated to vary between 50 and 51 dBA at the edge of the ROW along Segment 4. Future corona noise along Segment 4 of the proposed Project route is characterized by corona modeling at Location 7, as presented in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route), and was determined to range between 52 to 55 dBA at the edge of the ROW.

This operational noise level does not represent a substantial increase over existing conditions.

Segment 5. The overall existing ambient noise measured along this segment was found to be 71 dBA, while existing transmission line corona noise along this segment was found to range between 22 dBA to 25 dBA at the edge of the ROW. Future corona noise along Segment 5 of the proposed Project route is characterized by corona modeling at Locations 3, 4, and 6, as presented in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route), and was determined to range between 51 and 54 dBA at the edge of the ROW. Therefore, the increase in operational corona noise generated by the proposed Project along this segment would substantially increase existing ambient noise conditions. Noise-sensitive receptors along Segment 5 include residential areas and a healthcare facility, as well as numerous proposed residential developments.

Segment 6. The measured ambient noise level of this segment was found to be 41 dBA, while the range of existing wet weather corona noise at the edge of the ROW is between less than 20 to 24 dBA. The range of future corona noise along Segment 6 of the proposed Project route is characterized by corona modeling at Locations 2 and 4, as presented in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route), and was determined to range between 47 and 60 dBA at the edge of the ROW. These modeling results represent an ambient noise level increase between 25 and 36 dBA. In comparison with the accepted noise threshold of 5 dBA representing a substantial increase in ambient levels, as described in Section 3.10.4.1 (Criteria for Determining Impact Significance), this modeled increase in operational corona noise generated along Segment 6 of the proposed Project is considered to be substantial. However, as discussed in Section 3.10.2.2 (Affected Environment: Alternative 2), with the exception recreational receptors (addressed in Section 3.15), wildlife receptors (addressed in Section 3.4), and some scattered residences immediately south of Vincent Substation (not in the ANF) and several scattered residential units within the ANF on private land inholdings, no additional sensitive receptors have been identified along Segment 6. Therefore, although the Project would introduce a substantial increase in corona noise levels along Segment 6, this change from existing ambient conditions would affect minimal sensitive noise receptors. As previously mentioned, any disturbance that may occur to recreationists or wildlife as a result of this increase in corona noise along Segment 6 are addressed in the Wilderness and Recreation analysis (Section 3.15) and the Biological Resources analysis (Section 3.4), respectively. These noise-sensitive receptors along Segment 6 would be affected by a substantial increase in ambient noise levels.

Segment 7. The measured ambient noise level of this segment was found to be 57 dBA, while the range of existing wet weather corona noise at the ROW edge is between 22 dBA to 25 dBA. The range of future corona noise along Segment 7 of the proposed Project is characterized by corona modeling at Location 4, as presented in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route), and was determined to range between 51 and 54 dBA at the edge of the ROW. Therefore, the increase in operational corona noise generated by the proposed Project along this segment would substantially increase existing ambient noise conditions. Noise-sensitive receptors along Segment 7 include residences, schools, healthcare facilities, and other land uses that would be affected by a substantial increase in ambient noise levels.

Segment 8. The measured ambient noise level of this segment varied from approximately 43 to 60 dBA, while the range of existing wet weather corona noise at the ROW edge ranges from 23 dBA to 25 dBA. The range of future corona noise along Segment 8 of the proposed Project is characterized by corona modeling at Location 3, as presented in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route), and was determined to range between 51 and 54 dBA at the edge of the ROW.

Therefore, the increase in operational corona noise generated by the proposed Project along this segment would substantially increase existing ambient noise conditions. Although parts of Segment 8 are rural with minimal sensitive noise receptors in the area, there are numerous noise-sensitive receptors along some portions of Segment 8, including residences, schools, and healthcare facilities, among others.

Segment 9 (Substations). The following presents the predicted noise levels from the Whirlwind, Antelope, and Vincent Substations (the only substations where the proposed Project has the potential to change the noise levels perceptibly beyond the fence lines of the substation).

- The new Whirlwind Substation would include four single-phase 373-MVA transformers. The predicted noise level from these transformers is 40 dBA at 3,000 feet. No receptors are located within 3,000 feet of any of the proposed locations for the Whirlwind Substation.
- Proposed Project modifications to the Antelope Substation include one new SVC that is anticipated to result in noise levels of approximately 65 dBA or less at the fence line. The closest receptors are approximately 1,500 feet from the location of the proposed SVC. At this distance, the noise level from the SVC is anticipated to be approximately 42 dBA. Implementation of the Antelope Substation expansion would result in a less than a 2-dBA increase of the noise level to 48 dBA at the closest residence to the SVC.
- Proposed Project modifications to the Vincent Substation include one new SVC that is anticipated to result in noise levels of approximately 60 dBA or less at the fence line. The closest receptors are located approximately 400 feet from the fence line. At this distance, the noise level from the SVC is predicted to be 46 dBA and is anticipated to increase the substation noise level by two dBA to 53 dBA.

The permanent increase in noise associated with operation of Segment 9 would be approximately two dBA or less. Therefore, the permanent increase in noise levels due to operation of the proposed Project within this segment would not result in a substantial increase over existing conditions.

Segment 10. The measured ambient noise level of this segment was found to range between 40 and 45 dBA. There are no existing transmission lines in this segment of the proposed alignment and, therefore, there is no existing corona noise. The range of future corona noise along Segment 10 of the proposed Project is characterized by corona modeling at Location 1, as presented in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route), and was determined to range between 52 and 55 dBA at the edge of the ROW. Therefore, the increase in operational corona noise generated by the proposed Project along this segment would substantially increase existing ambient noise conditions. However, as discussed in Section 3.10.2.2 (Affected Environment: Alternative 2), Segment 10 is situated in a rural and undeveloped area that is primarily characterized as agricultural; there are not considered to be any sensitive noise receptors along this segment of the Project.

Segment 11. The measured ambient noise level of this segment was found to range between 51 and 53 dBA. Existing rainy weather transmission line corona noise at the northern portion of this segment of the proposed alignment to the Gould Substation (the portion of the transmission line in the ANF) was estimated to range from less than 20 dBA to 24 dBA. Existing rainy weather transmission line corona noise at the southern portion of this segment of the proposed alignment from Gould Substation to Mesa Substation was estimated to range from 22 dBA to 25 dBA. The range of future corona noise along Segment 11 of the proposed Project is characterized by corona modeling at Locations 13 and 14, as presented in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route), and was determined to range between 47 and 60 dBA at the edge of the ROW. Therefore, the increase in operational corona noise generated by the proposed Project along this segment would substantially increase existing ambient noise conditions. Minimal sensitive noise receptors along the portion of Segment 11 that is located within the ANF would be affected by this increase in ambient noise levels. However, for

the portion of Segment 11 that is located south of the ANF, sensitive noise receptors in the vicinity include residences, industries, businesses, schools, and hospitals.

Noise from Inspection and Maintenance Activities

Routine inspection and maintenance of the transmission lines and substation facilities would be accomplished with ground access crews periodically. This would cause short-term or intermittent increases in noise along the ROW of each segment and within substation boundaries. Any noise associated with inspections and maintenance would be temporary and would not increase the existing ambient noise conditions of the proposed Project ROW or substation locations.

CEQA Significance Conclusion

Corona noise generated by operation of the proposed Project along Segments 5, 6, 7, 8, 10, and 11 would result in permanent and substantial increases to existing ambient noise levels along these segments, with the accepted standard of five dBA representing a substantial increase. Of these segments, a minimal number of sensitive noise receptors would be affected along most of Segments 6 and 11 in the ANF, with the exception of scattered residences south of Vincent Substation (not in ANF) and several scattered residential units within the ANF on private land inholdings. However, as previously described and in accordance with CEQA, impact significance determinations must be provided for the project as a whole, and not for individual segments of the project. There is no feasible mitigation available to reduce or eliminate the permanent operational corona noise that would be generated by the proposed Project. Therefore, Impact N-3 would be significant and unavoidable (Class I).

Impact N-4: Operational noise levels would violate local standards.

A thorough review of all applicable ANF, county and city General Plans and Noise Control Ordinances was completed for all jurisdictions traversed by the proposed Project. Table 3.10-10 (Noise Policy Compliance Table – Operation) presents a consistency analysis of the proposed Project with applicable noise ordinances and policies.

Table 3.10-10. Noise Policy Compliance Table – Operation

Applicable Policy	Compliance Analysis
ANF Land Management Plan	
No noise policies apply during operation.	Operational activities would be in compliance with the 2005 Forest Plan.
Kern County General Plan Noise Element	
Design or arrange industrial use operations so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn}	Segments 9 (substations) and 10 would be located within Kern County and subject to this General Plan Noise Element Policy. Corona noise at proposed Project Segment 9 substations would be: 40 dBA at 3,000 feet at the new Whirlwind Substation (no receptors are located within 3,000 feet), 65 dBA or less at the Antelope Substation fence line, and 60 dBA or less at the Vincent Substation fence line. Under future wet weather conditions, corona noise within proposed Project Segment10 was modeled to be between 52 and 55 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this Kern County General Plan Noise Element Policy.

Table 3.10-10. Noise Policy Compliance Table – Operation

Applicable Policy	Compliance Analysis
San Bernardino County General Plan Noise Element	
Exterior noise standards for residential or other noise sensitive receptors during operation. ▪ Exterior Noise Level not to exceed 55 dBA Leq or 75 dBA Lmax 7am to 10pm ▪ Exterior Noise Level not to exceed 45 dBA Leq or 65 dBA Lmax 10pm to 7am	Segment 8 would be located within San Bernardino County and subject to this General Plan Noise Element Policy. Under future wet weather conditions, the range of future corona noise along Segment 8 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this San Bernardino County General Plan Noise Element Policy.
San Bernardino County Municipal Code Noise Ordinance	
Exterior noise standards for residential or other noise sensitive receptors during operation. ▪ Exterior Noise Level not to exceed 55 dBA Leq for more than 30 minutes of an hour between 7am to 10pm	Segment 8 would be located within San Bernardino County and subject to this General Plan Noise Element Policy. Under future wet weather conditions, the range of future corona noise along Segment 8 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this San Bernardino County ordinance.
Los Angeles County Municipal Code Noise Control Ordinance	
Exterior noise standards for designated land use zones and time intervals (Section 12.08.390) during operation. ▪ Noise sensitive area: Exterior Noise Level not to exceed 45 dBA at anytime ▪ Residential properties: Exterior Noise Level not to exceed 45 dBA 10:00 pm to 7:00 am (nighttime) or 50 dBA 7:00 am to 10:00 pm (daytime)	Segments 4, 5, 6, 7, 8, 9 (substations) and 11 would be located within Los Angeles County and subject to this ordinance. Under future wet weather conditions, corona noise at the edge of the ROW within these proposed Project Segments was modeled to be: ▪ Segment 4: 52 to 55 dBA ▪ Segment 5: 51 to 54 dBA ▪ Segment 6: 47 to 60 dBA ▪ Segment 7: 51 to 54 dBA ▪ Segment 8: 51 to 54 dBA ▪ Segment 9 (Substations): - 40 dBA at 3,000 feet at Whirlwind Substation; - 65 dBA or less at Antelope Substation fence line; - 60 dBA or less at Vincent Substation fence line ▪ Segment 11: 47 to 60 dBA Therefore, the proposed Project would not be in full compliance with this Los Angeles County ordinance.
City of Baldwin Park General Plan	
Exterior noise standards for designated land use during operation ▪ Residential Receptors: Exterior Noise Level not to exceed 65 dBA at anytime ▪ Schools, Parks, Playgrounds: Exterior Noise Level not to exceed 65 dBA	Segment 7 would be located within the City of Baldwin Park and subject to this General Plan Noise Element Policy. Under future wet weather conditions, the range of future corona noise along Segment 7 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this City of Baldwin Park General Plan Noise Element Policy.
City of Chino Municipal Code Noise Ordinance	
Exterior noise standards for residential land use during operation. ▪ Maximum of 30 minute exposure: Exterior Noise Level not to exceed 55 dBA from 7am to 10pm and 50 dBA from 10pm to 7am ▪ Maximum of 15 minute exposure: Exterior Noise Level not to exceed 60 dBA from 7am to 10pm and 55 dBA from 10pm to 7am ▪ Maximum of 5 minute exposure: Exterior Noise Level not to exceed 65 dBA from 7am to 10pm and 60 dBA from 10pm to 7am ▪ Maximum of 1 minute exposure: Exterior Noise Level not to exceed 70 dBA from 7am to 10pm and 65 dBA from 10pm to 7am ▪ Any time period exposure: Exterior Noise Level not to	Segment 8 would be located within the City of Chino and subject to this ordinance. Under future wet weather conditions, the range of future corona noise along Segment 8 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this City of Chino ordinance.

Table 3.10-10. Noise Policy Compliance Table – Operation	
Applicable Policy	Compliance Analysis
exceed 75 dBA from 7am to 10pm and 70 dBA from 10pm to 7am	
Section 9.40.040(B) states it is unlawful for any person at any location within the incorporated area of the city to create any noise on property controlled by such person which causes the noise level when measured on any other property to exceed the noise standard plus 5 dBA for a cumulative period of more than fifteen minutes in any hour.	As discussed in Section 3.10.2.2, the measured ambient noise level of Segment 8 varied from approximately 43 to 60 dBA, while the range of existing wet weather corona noise at the ROW edge ranges from 23 dBA to 25 dBA. Under future rainy weather conditions, the range of future corona noise at the Segment 8 ROW edge with implementation of the proposed Project is characterized by corona modeling at Location 3 in Table 3.10-5 (Modeled Future Audible Corona Noise along Proposed Project Route) and would be between 51 and 54 dBA. Therefore, the increase in operational corona noise generated by the proposed Project could substantially increase existing ambient noise conditions by more than 5 dBA for a cumulative period of more than fifteen minutes in any hour. Therefore, the proposed Project would not be in full compliance with this City of Chino ordinance.
City of Chino Hills Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of Chino Hills Municipal Code Noise Ordinance.
City of Duarte Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of Duarte Municipal Code Noise Ordinance.
City of Industry Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of Industry Municipal Code Noise Ordinance.
City of Irwindale Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of Irwindale Municipal Code Noise Ordinance.
City of La Canada Flintridge Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of La Canada Flintridge Municipal Code Noise Ordinance.
City of La Habra Heights Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of La Habra Heights Municipal Code Noise Ordinance.
City of Lancaster General Plan	
Exterior noise standards for designated land use during operation ▪ Residential Receptors: Exterior Noise Level not to exceed 65 dBA at anytime ▪ Schools: Exterior Noise Level not to exceed 65 dBA at classrooms or 70 dBA at playgrounds	Segments 9 (substations) and 10 would be located within the City of Lancaster and subject to this ordinance. Corona noise at proposed Project Segment 9 substations would be: 40 dBA at 3,000 feet at the new Whirlwind Substation, 65 dBA or less at the Antelope Substation fence line, and 60 dBA or less at the Vincent Substation fence line. Under future wet weather conditions, corona noise within proposed Project Segment10 was modeled to be between 52 and 55 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this City of Lancaster ordinance.
City of Lancaster Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City Lancaster Municipal Code Noise Ordinance.
City of Montebello Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of Montebello Municipal Code Noise Ordinance.

Table 3.10-10. Noise Policy Compliance Table – Operation

Applicable Policy	Compliance Analysis
City of Monterey Park Municipal Code Noise Ordinance	
Exterior noise standards for designated land use during operation: ▪ Residential Zone: Exterior Noise Level not to exceed 55 dBA from 7am to 10pm and 50 dBA from 10pm to 7am ▪ Commercial Zone: Exterior Noise Level not to exceed 65 dBA from 7am to 10pm and 55 dBA from 10pm to 7am ▪ Industrial Zone: Exterior Noise Level not to exceed 70 dBA anytime	Segment 8 and Mesa Substation (Segment 9) would be located within the City of Monterey Park and subject to this ordinance. Under future wet weather conditions, corona noise at the edge of the ROW within these proposed Project Segments was modeled to be: ▪ Segment 8: 51 to 54 dBA ▪ Noise at Mesa Substation is not expected to be perceptibly changed as a result of the Project Therefore, the proposed Project would be in compliance with this City of Monterey Park ordinance.
Increases in noise levels are permitted in accordance with the following: ▪ 5 dBA increase permitted for 15 minutes per hour ▪ 10 dBA increase permitted for 5 minutes per hour ▪ 15 dBA increase permitted for 1 minutes per hour ▪ 20 dBA increase permitted for less than one minute per hour	Segment 8 and Mesa Substation (Segment 9) would be located within the City of Monterey Park and subject to this ordinance. Under future wet weather conditions, corona noise at the edge of the ROW within these proposed Project Segments was modeled to be: ▪ Segment 8: 51 to 54 dBA ▪ Noise at Mesa Substation is not expected to be perceptibly changed as a result of the Project Therefore, the proposed Project would be in compliance with this City of Monterey Park ordinance.
City of Ontario Municipal Code Noise Ordinance	
Exterior noise standards for designated land use during operation ▪ Single Family Residential, School, day care center, hospital, church, library, or museum Zone: Exterior Noise Level not to exceed 65 dBA from 7am to 10pm and 45 dBA from 10pm to 7am ▪ Multi Family Residential Zone: Exterior Noise Level not to exceed 65 dBA from 7am to 10pm and 50 dBA from 10pm to 7am ▪ Commercial Zone: Exterior Noise Level not to exceed 65 dBA from 7am to 10pm and 60 dBA from 10pm to 7am ▪ Residential portion of mixed use and Industrial Zone: Exterior Noise Level not to exceed 70 dBA anytime	Segment 8 would be located within the City of Ontario and subject to this ordinance. Under future wet weather conditions, the range of future corona noise along Segment 8 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this City of Ontario ordinance.
City of Palmdale General Plan	
Exterior noise standards for designated land use during operation ▪ Residential Receptors: Exterior Noise Level not to exceed 65 dBA at anytime ▪ Schools, Hospitals, Nursing Home, Commercial: A noise level which does not jeopardize health, safety, and welfare of visitors	Segment 5 would be located within the City of Palmdale and subject to its policies. Under future wet weather conditions, the range of future corona noise along Segment 5 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this City of Palmdale policy.
City of Palmdale Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of Palmdale Municipal Code Noise Ordinance.
City of Pasadena Municipal Code Noise Ordinance	
No noise policies apply during operation.	Operational activities would be compliant with City of Pasadena Municipal Code Noise Ordinance.
City of Pico Rivera Municipal Code Noise Ordinance	
No person shall make, cause or suffer, or permit to be made, upon any premises owned, occupied or controlled by him, any unnecessary noises or sounds which are physically annoying to persons of ordinary sensitiveness, or which are so harsh or so prolonged or unnatural or unusual in their use, time or place as to occasion physical discomfort to the inhabitants of any	Segment 8 would be located within the City of Pico Rivera and subject to this ordinance. Under future wet weather conditions, the range of future corona noise along Segment 8 would be between 51 and 54 dBA at the edge of the ROW. This dBA level is not considered to be a level causing any discomfort or annoyance to receptors. Therefore, the proposed Project

Table 3.10-10. Noise Policy Compliance Table – Operation	
Applicable Policy	Compliance Analysis
neighborhood	would be in compliance with this City of Pico Rivera ordinance.
City of San Gabriel Municipal Code Noise Ordinance	
It shall be unlawful for any person to run or operate, or permit to be run or operated, any mechanical, electrical, electronic, hydraulic, or wind-driven equipment, fan, pump, compressor, blower, motor, engine, machine, or other similar apparatus, whether as owner, agent, employee, lessee, or other person having the charge thereof, which causes, or is likely to cause, any loud, excessive, unnecessary, or unusual continued or intermittent noise, or any noise which annoys, disturbs, injures, or endangers the comfort, repose, health, peace, or safety of others within the city unless such noise is muffled effectually and the apparatus is either equipped with a muffler device in constant operation and properly maintained to deaden such noise, or the apparatus is enclosed in a room, building, or other enclosure sufficiently insulated to deaden such noise	Segment 11 would be located within the City of San Gabriel and subject to this ordinance. Under future wet weather conditions, the range of future corona noise along Segment 11 would be between 47 and 60 dBA at the edge of the ROW. This dBA level is not considered to be a level causing any discomfort or annoyance to receptors. Therefore, the proposed Project would be in compliance with this City of San Gabriel ordinance.
City of South El Monte Municipal Code Noise Ordinance	
Exterior noise standards for designated land use during operation ▪ Commercial Receptors: Exterior Noise Level not to exceed 55 dBA from 10 p.m. to 7 a.m. or 60 dBA from 7 a.m. to 10 p.m. ▪ Manufacturing Zone: Exterior Noise Level not to exceed 70 dBA at any time	Segment 7 would be located within the City of South El Monte and subject to this ordinance. Under future wet weather conditions, the range of future corona noise along Segment 7 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would be in compliance with this City of South El Monte ordinance.
Shall not exceed the exterior noise limit for the land use or zone as specified in the above table plus 5 dBA for a cumulative period of more than fifteen minutes in any hour; or the exterior noise limit for the land use or zone as specified in the above table plus 10 dBA for a cumulative period of more than five minutes in any hour; or the exterior noise limit for the land use or zone as specified in the above table plus 15 dBA for a cumulative period of more than one minute in any hour; or the exterior noise limit for the land use or zone as specified in the above table plus 20 dBA for any period of time.	As discussed in Section 3.10.2.2, the range of existing wet weather corona noise at the ROW edge ranges from 22 dBA to 25 dBA. Under future rainy weather conditions, the range of future corona noise at the Segment 7 ROW edge with implementation of the proposed Project would be between 51 and 54 dBA. Therefore, the increase in operational corona noise generated by the proposed Project could substantially increase existing ambient noise conditions by more than 5 dBA for a cumulative period of more than fifteen minutes in any hour. Therefore, the proposed Project would not be in full compliance with this City of South El Monte ordinance.
City of Temple City Municipal Code Noise Ordinance	
The following activities in or around any commercial or industrial use, whether such use is a permitted use or one allowed by a conditional use permit, is hereby declared to be a public nuisance: ▪ Loud noises between 10 p.m. and 6 a.m., as well as, excessive truck traffic	Segment 11 would be located within Temple City and subject to this ordinance. Under future wet weather conditions, the range of future corona noise along Segment 11 would be between 47 and 60 dBA at the edge of the ROW. This dBA level is not considered to be a level classified as a nuisance to receptors (refer to Figure 3.10-1 for average noise levels considered acceptable). Therefore, the proposed Project would be in compliance with this Temple City ordinance.
City of Whittier Municipal Code Noise Ordinance	
Exterior noise standards for designated land use during operation ▪ One and Two Family Residential: Exterior Noise Level not to exceed 50 dBA from 7am to 10pm and 45 dBA from 10pm to 7am ▪ Multi Family Residential and Public Space: Exterior Noise Level not to exceed 55 dBA from 7am to 10pm and 50 dBA from 10pm to 7am ▪ Commercial: Exterior Noise Level not to exceed 65 dBA from 7am to 10pm and 60 dBA from 10pm to 7am ▪ Industrial: Exterior Noise Level not to exceed 70 dBA anytime	Segment 8 would be located within the City of Whittier and subject to this ordinance. Under future wet weather conditions, the range of future corona noise along Segment 8 would be between 51 and 54 dBA at the edge of the ROW. Therefore, the proposed Project would not be in full compliance with this City of Whittier ordinance for single-family residences from 10pm to 7am.

CEQA Significance Conclusion

Corona noise generated by the proposed Project would not be in compliance with noise standards of Los Angeles County, or the Cities of Chino, Monterey Park, and Whittier. This impact would not occur along Segments 6 and 11 in the ANF because the 2005 Forest Plan does not address noise levels in the Forest; however, as previously described and in accordance with CEQA, impact significance determinations must be provided for the project as a whole, and not for individual segments of the project. No feasible mitigation is available to reduce or eliminate the corona noise that would be generated by the proposed Project. Therefore, because Project operation would result in local plan violations regardless of mitigation measure implementation, Impact N-4 would significant and unavoidable (Class I).

3.10.6.2 Cumulative Effects Analysis

Geographic Extent

The geographic extent for the analysis of cumulative impacts related to noise is generally limited to areas within approximately 0.25 mile of the proposed Project route and substation locations. This area is defined as the geographic extent of the cumulative noise impact area because noise impacts would generally be localized, mainly within approximately 600 feet from any noise source. However, cumulative effects are analyzed for all projects within 0.25 mile of the proposed Project route to represent the most adverse conditions. As cumulative development within 0.25 mile can contribute substantial daily vehicle traffic noise to areas depending on trip distribution and average daily traffic that can impact long-term ambient noise levels, all projects within 0.25 mile are considered. At distances greater than 0.25 mile, impulse or helicopter noise would be briefly audible and steady construction noise from the proposed Project would generally dissipate into quiet background noise levels.

Existing Cumulative Conditions

The character of the area along the Project route varies from rural to urbanized. The most urbanized areas along the proposed Project route are those located south of the ANF. With the exception of NFS lands in the ANF, development is occurring throughout the Project study area and as a result, increases in ambient noise levels are anticipated as additional future development projects are approved and population growth occurs.

Ambient Noise Levels. Cumulative noise levels within the counties of Los Angles, Kern, and San Bernardino will continue to include an expanded number of sources of man-made noise, mainly due to increased road-way traffic, air traffic, and other human activity including construction projects and an expanded geographic area of impact as urbanization spreads and population grows. Approved, pending and reasonably foreseeable projects would add to the future expected noise levels throughout the geographic area. However, varying noise levels would continue to occur depending on the proximity to human activity. Rural communities or unpopulated lands will remain the quietest.

Noise-Sensitive Receptors. With the exception of NFS lands in the ANF, cumulative conditions will introduce new residences and other sensitive receptors to areas near the proposed Project. Approved, pending and reasonably foreseeable residential projects would bring an increased number of noise-sensitive uses to the area.

Reasonably Foreseeable Future Projects and Changes

As discussed above, ongoing development throughout the cumulative effects area for noise is dominated by residential developments, clustered in and around community developments on non-NFS lands. This trend in residential development is also representative of reasonably foreseeable future projects in the cumulative effects area, as supported by the aggressive population growth forecasted throughout the Project Area. Reasonably foreseeable future projects within the Project Area are expected to be characteristic of past and ongoing projects. Most projects in the cumulative scenario are limited in their geographic extent. Projects in the cumulative scenario become more or less relevant along the length of the proposed Project route, based on their proximity to the proposed Project ROW and substations and, therefore, to the potential for cumulative interactions.

Cumulative Impact Analysis

Impacts of the proposed Project would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The potential for noise impacts of the proposed Project to combine with the effects of other projects within the geographic scope of the cumulative analysis is described below.

- **Construction noise would substantially disturb sensitive receptors (Impact N-1).** Proposed Project construction would temporarily substantially increase ambient noise levels in the vicinity of the ROW and would disturb sensitive receptors. Similarly, construction activities associated with other projects in close proximity to the proposed Project could potentially occur at the same time as the proposed Project and also disturb nearby sensitive receptors. Sensitive receptors located directly adjacent to multiple construction sites would experience temporary noise impacts from construction activities. When construction activities of the proposed Project and other nearby projects occur concurrently, the combined effect of construction noise would be cumulatively significant. APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number) as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use) would reduce the proposed Project's contribution to cumulative impacts, but not to a less-than-significant level. Therefore, Impact N-1 would combine with impacts of other past, present and reasonably foreseeable projects to result in a significant cumulative impact (Class I).
- **Construction noise levels would violate local standards (Impact N-2).** Proposed Project construction would temporarily substantially increase ambient noise levels in the vicinity of the ROW and would violate local noise standards. Similarly, construction activities associated with other projects in close proximity to the proposed Project could potentially occur at the same time as the proposed Project also violating local standards and increasing construction noise to nearby sensitive receptors. When construction activities of the proposed Project and other nearby projects occur concurrently, the combined effect of construction noise would be cumulatively significant. APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number) as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use) would reduce the proposed Project's contribution to cumulative impacts, but not to a less-than-significant level. Therefore, Impact N-2 would combine with impacts of other past, present and reasonably foreseeable projects to result in a significant cumulative impact (Class I).
- **Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations in the vicinity of sensitive receptors. (Impact N-3).** Sensitive receptors located directly adjacent to the proposed Project would be disturbed by operational noise generated by the proposed Project. Past residential, commercial and industrial projects (including the existing transmission lines in the proposed ROW) have resulted in the development of residences, businesses, roadways, and other noise-generating uses along the proposed Project route. These past projects have introduced people, automobile and truck traffic, and industrial land uses that have resulted in increased noise within the developed portions of the proposed ROW. Similarly, several of the future projects identified to be constructed within 0.25 mile of the proposed Project, such as the Aera Master Planned Community near the City of

Diamond Bar and the New Model Colony near the City of Ontario would also be expected to result in noise-generating uses and vehicle traffic that would disturb sensitive receptors. Corona noise from the proposed Project would combine with noise from past, present, and reasonably foreseeable projects within 0.25 mile to result in a cumulative significant impact to sensitive receptors (Class I).

- **Operational noise levels would violate local standards (Impact N-4).** Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines. Residential receptors located directly adjacent to the proposed Project would be impacted by operational noise from the transmission ROW. Because the operational noise generated by the proposed Project alone would result in an increase to the ambient noise levels at sensitive receptor locations along the lines, additional further development and vehicle-related traffic within proximity of these receptors would combine with this impact to further increase ambient noise levels. There is not sufficient information to assess the degree to which the numerous present and foreseeable residential development projects, such as the Aera Master Planned Community near the City of Diamond Bar and the New Model Colony near the City of Ontario would generate traffic noise impacting ambient conditions. Therefore, the combined effect of operational corona noise combined with other noise sources located within close proximity to the proposed transmission line and substation facilities to noise sensitive receptors would be cumulatively significant and likely further impact sensitive receptors and further escalate ambient noise conditions in excess of identified local policies and ordinance standards. Therefore, it is considered likely that this impact of the proposed Project would combine with similar impacts of other projects to result in a cumulative operational noise impact. While the proposed Project would not generate substantial corona noise along each of the Project segments, the proposed Project's cumulative contribution to an elevation in ambient noise levels is considered to be significant and unavoidable (Class I).

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

Mitigation measures introduced for the proposed Project in Section 3.10.6.1 would help to reduce the proposed Project's contribution to cumulative impacts. One additional mitigation measure that may reduce cumulative noise impacts would include coordination with the City of Lancaster and all other affected jurisdictions to stagger construction schedules to the extent feasible for construction projects occurring within 0.25 mile of the Project. This effort would reduce the potential for cumulative increases in ambient noise levels to occur during construction; however, it would result in longer periods of construction noise nuisance, which may in effect be considered by the communities to be worse than higher noise levels over a shorter duration. Therefore, such a mitigation measure for cumulative construction noise impacts is not recommended. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level for the issue area of Noise.

3.10.7 Alternative 3: West Lancaster Alternative

3.10.7.1 Direct and Indirect Effects Analysis

The following section describes the noise impacts associated with Alternative 3, as determined by the significance criteria listed in Section 3.10.4.1. Mitigation measures are introduced where necessary in order to reduce significant impacts to less-than-significant levels.

Substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above existing levels (Criterion NOI1)

Construction noise impacts associated with Criterion NOI1 for Alternative 3 would be the same as those impacts associated with this analysis for the proposed Project, as presented in Section 3.10.6.1. Although this alternative introduces a re-route of part of Segment 4 of the proposed transmission line that would affect slightly fewer sensitive receptors than the proposed Project, overall impacts to sensitive noise receptors along the approximate 170-mile long transmission route would be the same as identified in

Section 3.10.6.1. These impacts and their associated mitigation measures that fall under Criterion NOI1 are summarized in the following paragraphs. Please see Section 3.10.6.1 for a detailed description of these impacts, as they are the same as the proposed Project.

Impact N-1 (Construction noise would substantially disturb sensitive receptors) would be the same under Alternative 3 as it would for the proposed Project (please see Section 3.10.6.1). As described in Section 3.10.6.1, Impact N-1 would occur at various locations along the transmission route, particularly in areas of concentrated residential development or near recreational resources. Construction noise would temporarily substantially increase ambient noise levels in the vicinity of the proposed Project route, substation locations, and along all transport access routes. All noise-sensitive receptors located within approximately 225 feet of construction activities would be impacted by construction noise. As such, Alternative 3 would require implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use), to reduce the effects of construction noise on sensitive receptors during construction to the maximum extent possible. However, even with implementation of the mitigation measures listed above and described in detail in Section 3.10.6.1, Impact N-1 for Alternative 3 would be significant and unavoidable (Class I).

Impact N-2 (Construction noise levels would violate local standards) would be the same under Alternative 3 as it would for the proposed Project (please see Section 3.10.6.1). As described in Section 3.10.6.1, noise generated during construction would violate several local noise standards and policies. Alternative 3 would result in the same type and intensity of construction noise in the same jurisdictions as the proposed Project. Although construction noise would be temporary and would be reduced by implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise), N-1b (Avoid sensitive receptors during mobile construction equipment use), and L-2b (Aircraft flight path and safety provisions and consultations), the level of construction noise would violate several local noise ordinances and standards, as described above in Table 3.10-9 (Noise Policy Compliance Table – Construction). Therefore, Impact N-2 for Alternative 3 would be significant and unavoidable (Class I).

A permanent and substantially higher level of ambient noise source in the vicinity of sensitive receptors (Criterion NOI2)

Operation of Alternative 3 would be identical to that of the proposed Project with the exception that a portion of Segment 4 would be in a slightly different location than that of the proposed Project. Therefore, operational noise impacts associated with Criterion NOI2 for Alternative 3 would be the same as those impacts associated with this analysis for the proposed Project, as presented in Section 3.10.6.1. These impacts and their associated mitigation measures that fall under Criterion NOI2 are summarized in the following paragraphs. Please see Section 3.10.6.1 for a detailed description of these impacts, as they are the same as the proposed Project.

Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations would be the same under Alternative 3 as it would for the proposed Project (please see Section 3.10.6.1). As described in Section 3.10.6.1, corona noise generated by the proposed Project along Segments 5, 6, 7, 8, 10, and 11 would substantially increase existing ambient noise conditions to sensitive receptors located along the ROW of these segments. Because there is no

feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 3, Impact N-3 for Alternative 3 would be significant and unavoidable (Class I).

Impact N-4 (Operational noise levels would violate local standards) would be the same under Alternative 3 as it would for the proposed Project (please see Section 3.10.6.1). As described in Section 3.10.6.1, corona noise generated by Alternative 3 would not be in compliance with noise standards of Los Angeles County, and the Cities of Chino, Monterey Park, and Whittier. Because there is no feasible mitigation to reduce or eliminate the increased corona noise that would be generated by Alternative 3, Impact N-4 for Alternative 3 would be significant and unavoidable (Class I).

3.10.7.2 Cumulative Effects Analysis

This section addresses potential cumulative effects that would occur as a result of implementation of Alternative 3 (West Lancaster Alternative). This alternative consists of a brief re-route of the proposed transmission line just north of Antelope Substation, which would add approximately 0.4 mile to the length of the route. The remainder of this alternative route (south of Antelope Substation) would be identical to that of the proposed Project and would, therefore, result in identical impacts as the proposed Project. The re-routed portion of the Alternative 3 route generally parallels the proposed Project route to the west. As a result, this alternative traverses the same or similar land uses as the portion of the proposed Project route it is proposed to replace, would require the same types of construction activities to build, and would result in the same operational capacity as the proposed Project. Based on the substantial similarity of Alternative 3 to the proposed Project, this alternative's contribution to cumulative impacts would be identical to that of the proposed Project.

Geographic Extent

Alternative 3 only differs from the proposed Project for a very small portion of the proposed route in the City of Lancaster, near Antelope Substation. This area is still encompassed by the geographic extent of the cumulative analysis defined for Alternative 2 in Section 3.10.6.2. Therefore, the geographic extent of the cumulative analysis for Alternative 3 is exactly the same as that for Alternative 2.

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 3 are exactly the same as for Alternative 2, as described in Section 3.10.6.2.

Reasonably Foreseeable Future Projects and Changes

Reasonably foreseeable future projects and changes to the cumulative scenario for Alternative 3 would be exactly the same as Alternative 2, described in Section 3.10.6.2.

Cumulative Impact Analysis

The minor re-route of the proposed Project transmission line associated with Alternative 3 would not affect the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2, as detailed in Section 3.10.6.2.

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

As with the proposed Project, mitigation measures introduced for Alternative 3 in Section 3.10.7.1 would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional

mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level for noise.

3.10.8 Alternative 4: Chino Hills Route Alternatives

3.10.8.1 Direct and Indirect Effects Analysis

The following section describes the noise impacts associated with Alternative 4, as determined by the significance criteria listed in Section 3.10.4.1. Mitigation measures are introduced where necessary in order to reduce significant impacts to less-than-significant levels.

As identified in Section 3.10.2.4 (Chino Hills Route Alternatives), Routes A through D of Alternative 4 each traverse rural, undeveloped areas in the CHSP. These alignments through the CHSP would avoid introducing Project noise impacts to sensitive receptors along the eastern portion of Segment 8, but these alignments would be located in close proximity to sensitive noise receptors in the form of recreational trails in and around the CHSP. Noise-related disturbances to recreational activities, including within the CHSP, area addressed in the Wilderness and Recreation analysis for TRTP, which is presented as Section 3.15 of this EIR/EIS. Substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above existing levels (Criterion NOI1)

Impact N-1 (Construction noise would substantially disturb sensitive receptors) would be the same under Alternative 4 as it would for the proposed Project (please see Section 3.10.6.1), with the exception that substantially fewer residential noise receptors would be affected along the eastern portion of Segment 8, that would be avoided by this alternative routing through the CHSP. Although each of the four routes of Alternative 4 would affect substantially fewer sensitive receptors than Segment 8 of the proposed Project, impacts to sensitive receptors from construction noise would be significant under all four routes because noise-sensitive receptors would be located within approximately 225 feet of construction activities and would be exposed to noise from construction. In addition, Routes A through D of Alternative 4 would each require the construction of a number of access roads to tower and construction staging locations. While the precise number and location of access roads required for each route of Alternative 4 are not known at this time, construction of these access roads would be similar to that of access roads required for construction of the proposed Project. Therefore, noise impacts during construction of access roads could occur to sensitive receptors located along access road routes.

Project noise impacts that would occur between Windhub Substation (the northern-most Project feature) and Segment 8A MP 19.2, where Alternative 4 deviates from the proposed Project route, would be the same as those identified in Section 3.10.6.1 for the proposed Project. East of S8A MP 19.2, Alternative 4 would avoid noise impacts along Segment 8 that would be introduced under the proposed Project, but it would introduce noise impacts within the CHSP.

As described in Section 3.10.6.1, Impact N-1 would occur at various locations along the transmission route, particularly in areas of concentrated residential development. Construction noise would temporarily substantially increase ambient noise levels in the vicinity of the proposed Project route, substation locations, and along all transport access routes (including new access roads). As such, each route of Alternative 4 would require implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use), to reduce the effects of construction noise on sensitive receptors during construction to the maximum extent possible. However, even with implementation of the

mitigation measures listed above and described in detail in Section 3.10.6.1, Impact N-1 for Alternative 4 would be significant and unavoidable (Class I).

Impact N-2 (Construction noise levels would violate local standards) would be the same under each route of Alternative 4 as it would for the proposed Project (please see Section 3.10.6.1). In addition to the jurisdictions listed in Table 3.10-9, all four routes of Alternative 4 would traverse the following jurisdictions that are not crossed by the proposed Project: City of Brea, Orange County, and the State of California Park System – Chino Hills State Park. As such, in addition to those polices analyzed in Table 3.10-9 (Noise Policy Compliance Table – Construction), the additional policies analyzed in Table 3.10-11 (Alternative 4 Noise Policy Compliance Table – Construction) would apply to Alternative 4 Routes A through D. As part of the California State Park System, the CHSP is managed under the direction of the California Public Resources Code (PRC), which mandates per Section 5002.2 that a general plan be prepared and implemented prior to the development of any new facilities within a State Park. The existing General Plan for CHSP was approved in February of 1999, and serves as a management document for the CHSP. All management Goals and Guidelines from the CHSP General Plan were reviewed and no specific noise guidelines relevant to this noise analysis were identified. Therefore, only policies pertaining to noise within the City of Brea and Orange County Municipal Codes are included in this analysis.

Table 3.10-11. Alternative 4 Noise Policy Compliance Table – Construction

Applicable Policy	Compliance Analysis
Orange County Municipal Code Noise Ordinance	
Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do 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 Federal holiday.	APM NOI-1 would be required for Alternative 4. With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Therefore, construction activities would be compliant with this Orange County ordinance.
City of Brea Municipal Code Noise Ordinance	
Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do 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 Federal holiday.	APM NOI-1 would be required for Alternative 4. With implementation of APM NOI-1, SCE would ensure that construction activities would either comply with local noise ordinances pertaining to daily construction activity timing, or SCE would obtain a variance from each affected jurisdiction, if there is a need to work outside of normal daytime, weekday hours. Therefore, construction activities would be compliant with this City of Brea ordinance.

This alternative introduces four re-routes to a portion of Segment 8 of the proposed transmission line that would each result in temporary noise impacts to substantially fewer sensitive receptors than the proposed Project. However, impacts to sensitive noise receptors along the approximate 170-mile long transmission route would be identical to those identified in Section 3.10.6.1 for the proposed Project. As described in Section 3.10.6.1, noise generated during construction would violate several local noise standards and policies. Alternative 4 would result in the same type and intensity of construction noise in the same jurisdictions as the proposed Project, as well as the three additional jurisdictions discussed above. Although construction noise would be temporary and would be reduced by implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise), N-1b (Avoid sensitive receptors during mobile construction equipment use), and L-2b (Aircraft flight path and safety provisions and consultations), the level of construction noise would violate

several local noise ordinances and standards, as described above in Table 3.10-9 (Noise Policy Compliance Table – Construction). Therefore, Impact N-2 for each of the routes under Alternative 4 would be significant and unavoidable (Class I).

A permanent and substantially higher level of ambient noise source in the vicinity of sensitive receptors (Criterion NOI2)

Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations) would be the same under Alternative 4 as it would for the proposed Project (please see Section 3.10.6.1), with the exception that fewer residential noise receptors would be affected along the eastern portion of Segment 8. As identified in Section 3.10.2.4 (Chino Hills Route Alternatives), Routes A through D traverse rural, undeveloped areas but would be located in close proximity to sensitive noise receptors in the form of recreational trails in and around CHSP. The operational corona noise generated by each of the Alternative 4 routing options through the CHSP would introduce substantially increased ambient noise conditions to sensitive recreational receptors in the Park. Noise-related disturbance to recreational activities is addressed in the Wilderness and Recreation analysis, which is presented as Section 3.15 of this EIR/EIS.

As with the proposed Project, operational corona noise under Alternative 4 would be significant along Segments 5, 6, 7, 10, and 11. Therefore, although fewer residential receptors would be subjected to corona noise under each route of Alternative 4, impacts to sensitive receptors from corona noise would be significant. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 4, Impact N-3 for Alternative 4 would be significant and unavoidable (Class I).

Impact N-4 (Operational noise levels would violate local standards) would be the same under Alternative 4 as it would for the proposed Project (please see Section 3.10.6.1), with the exception that this alternative would be subject to standards of three jurisdictions that are not applicable to the proposed Project. In addition to the jurisdictions listed in Tables 3.10-9 and 3.10-10, all four routes of Alternative 4 would traverse the following jurisdictions that are not crossed by the proposed Project: City of Brea, Orange County, and the State of California Park System – Chino Hills State Park. As such, in addition to those policies analyzed in Table 3.10-10 (Noise Policy Compliance Table – Operation), the additional policies analyzed in Table 3.10-11 (Alternative 4 Noise Policy Compliance Table – Operation) would apply to Alternative 4 Routes A through D. As described above, all management Goals and Guidelines from the CHSP General Plan were reviewed and no specific noise guidelines relevant to this noise analysis were identified. Therefore, only new policies pertaining to noise within the City of Brea and Orange County Municipal Codes are analyzed.

Table 3.10-12. Alternative 4 Noise Policy Compliance Table – Operation

Applicable Policy	Compliance Analysis
Orange County Municipal Code Noise Ordinance	
Exterior noise standards for designated land use zones during operation. ▪ Exterior Noise Level not to exceed 55 dBA from 7am to 10pm and 50 dBA from 10pm to 7am It shall be unlawful for any person at any location within the unincorporated area of the County to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other	Within Segment 8, it is assumed that corona noise generated by Alternative 4 would be identical to that which is estimated to be produced by the proposed Project. Under future wet weather conditions, the range of future corona noise along each route of Alternative 4 would be between 51 and 54 dBA at the edge of the ROW. Therefore, corona noise would violate the dBA nighttime threshold level of 50 dBA and would not be in compliance with this Orange County ordinance.

Table 3.10-12. Alternative 4 Noise Policy Compliance Table – Operation	
Applicable Policy	Compliance Analysis
residential property, either incorporated or unincorporated, to exceed: (1) The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or (2) The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or (3) The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or (4) The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or (5) The noise standard plus twenty (20) dB(A) for any period of time. In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.	
City of Brea Municipal Code Noise Ordinance	
Exterior noise standards for designated land use zones during operation. ▪ Exterior Noise Level not to exceed 55 dBA from 7am to 10pm and 50 dBA from 10pm to 7am	Within Segment 8, it is assumed that corona noise generated by Alternative 4 would be identical to that which is estimated to be produced by the proposed Project. Under future wet weather conditions, the range of future corona noise along each route of Alternative 4 would be between 51 and 54 dBA at the edge of the ROW. Therefore, corona noise would violate the dBA nighttime threshold level of 50 dBA and would not be in compliance with this City of Brea ordinance.

Project noise impacts that would occur between Windhub Substation (the northern-most Project feature) and Segment 8A MP 19.2, where Alternative 4 deviates from the proposed Project route, would be identical to the proposed Project and impacts would be identical to those identified in Section 3.10.6.1. As described in Section 3.10.6.1, corona noise would not be in compliance with noise standards of Los Angeles County, and the Cities of Chino, Monterey Park, and Whittier. Because there is no feasible mitigation to reduce or eliminate the increased corona noise that would be generated by Alternative 4, Impact N-4 for the entire Alternative 4 route would be significant and unavoidable (Class I).

3.10.8.2 Cumulative Effects Analysis

This section addresses potential cumulative effects that would occur as a result of implementation of Alternative 4 (Chino Hills Route Alternatives). Alternative 4 would require the same types of construction activities to build and would result in the same operational capacity as the proposed Project. Based on the substantial similarity of Alternative 4 to the proposed Project, this alternative's contribution to cumulative impacts would be similar or identical to that of the proposed Project. However, when compared to the proposed Project, each alternative's contribution to certain cumulative impacts may be incrementally increased or decreased as a result of the re-routed portion of the alternative. With regards to Alternative 4, any incremental increases or decreases in the Project's contribution to the cumulative scenario would result from the location of the alternative alignments associated with Routes A, B, C, and D.

Geographic Extent

The geographic extent of the cumulative effects analysis for Alternative 4 is the same as the extent of the regional setting for Alternative 4, as presented in Section 3.10.2.4 except that it also includes the jurisdictions of Orange County, the City of Brea, and Chino Hills State Park.

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 4 are the same as for Alternative 2, as described in Section 3.10.6.2, with the exception that the re-routed portion of this alternative is located in a less developed and more rural area than the portion of Segment 8 that it would replace.

Reasonably Foreseeable Future Projects and Changes

Reasonably foreseeable future projects and changes to the cumulative scenario for Alternative 4 would be the same as Alternative 2, described in Section 3.10.6.2.

Cumulative Impact Analysis

As identified in Section 3.10.2.4, Routes A through D all contain sensitive noise receptors in the form of residential and recreational uses. While the overall number of residential noise receptors subject to construction noise would be decreased along Segment 8 of Alternative 4, impacts to sensitive receptors from both construction and operational noise would be significant both within Segment 8 and the Project as a whole, under all four Chino Hills Alternative options.

Because this alternative introduces a re-route of part of Segment 8 of the proposed transmission line that would result in noise impacts to fewer sensitive residential receptors than the proposed Project, the cumulative contribution to noise impacts along the segment of proposed Project Segment 8 avoided by the Alternative 4 re-routes would be eliminated. However, overall cumulative impacts to sensitive receptors along the Segment 8 re-route ROWs and the remaining segments of the entire transmission route would be the same as identified in Section 3.10.6.1. Therefore, the following impacts would be cumulatively considerable and would combine with similar impacts of other projects to result in impacts that would be significant and unavoidable (Class I): Impact N-1 (Construction noise would substantially disturb sensitive receptors), Impact N-2 (Construction noise levels would violate local standards), Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations), and Impact N-4 (Operational noise levels would violate local standards).

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

Mitigation measures introduced for Alternative 4 in Section 3.10.8.1 would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level for noise.

3.10.9 Alternative 5: Partial Underground Alternative

3.10.9.1 Direct and Indirect Effects Analysis

The following section describes the noise impacts associated with Alternative 5, as determined by the significance criteria listed in Section 3.10.4.1. Mitigation measures are introduced where necessary in order to reduce significant impacts to less-than-significant levels.

Substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above existing levels (Criterion NOI1)

Impact N-1 (Construction noise would substantially disturb sensitive receptors) for Alternative 5 would be nearly identical to that of the proposed Project, as presented in Section 3.10.6.1, with the exception of the underground segment. Construction of the underground segment as part of Alternative 5 of the proposed transmission line would avoid temporary noise impacts to a number of sensitive receptors within the City of Chino Hills as compared to the proposed Project. Under this alternative, a large underground tunnel would be constructed; therefore construction noise that would be perceptible to nearby sensitive receptors would be limited to the ends of the tunnel, and this alternative would avoid aboveground construction activities between the two points. Receptors between these tunnel access points would not be subject to any temporary noise from construction, with the possible exception of construction vehicles accessing the tunnel access points through the area. However, while construction noise would be eliminated at receptors between the two tunnel access points, construction noise would be elevated at receptors near the tunnel entrances due to the increased duration of construction vehicle use at these two locations. In addition, underground construction would require 20- to 30-acre marshalling yards for construction staging. Possible locations for such a marshalling yard might include vacant warehouses in the area. Impacts to sensitive receptors along the rest of the approximately 170-mile transmission line would be identical to those identified in Section 3.10.6.1 for the proposed Project.

As such, Alternative 5 would require implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use), to reduce the effects of construction noise on sensitive receptors during construction to the maximum extent possible. However, even with implementation of the mitigation measures listed above and described in detail in Section 3.10.6.1, Impact N-1 for Alternative 5 would be significant and unavoidable (Class I).

Impact N-2 (Construction noise levels would violate local standards) for Alternative 5 would be identical to that of the proposed Project (please see Section 3.10.6.1). While Alternative 5 would avoid aboveground construction activities along the underground segment of the proposed transmission route in the City of Chino Hills, it would not avoid all receptors within the City boundary. Therefore, Alternative 5 would cross the same jurisdictions with applicable noise standards to receptors subject to construction noise as the proposed Project. As shown in Table 3.10-9 (Noise Policy Compliance Table – Construction), construction noise associated with Project construction would be in compliance with City of Chino Hills policies, therefore Alternative 5 would also be in compliance with City of Chino Hills policies. However, as described in Section 3.10.6.1, noise generated during construction of the rest of the Alternative 5 route (which is identical to that of the proposed Project) would violate several of the local noise standards and policies identified in Table 3.10-9 (Noise Policy Compliance Table – Construction). Although construction noise would be temporary and would be reduced by implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), and Mitigation Measures N-1a (Implement Best Management Practices for construction noise), N-1b (Avoid sensitive receptors during mobile construction equipment use), and L-2b (Aircraft flight path and safety provisions and consultations), the level of construction noise would violate several local noise ordinances and standards, as described above in Table 3.10-9 (Noise Policy Compliance Table – Construction). Therefore, Impact N-2 for Alternative 5 would be significant and unavoidable (Class I).

A permanent and substantially higher level of ambient noise source in the vicinity of sensitive receptors (Criterion NOI2)

Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations) would be the same for Alternative 5 as identified for the proposed Project, as presented in Section 3.10.6.1, with the exception of the underground segment. Construction of the underground segment of Alternative 5 would avoid permanent noise impacts to a number of sensitive receptors within the 3.5-mile underground segment of transmission line within the City of Chino Hills as compared to the proposed Project. Receptors along the underground segment of transmission line would not be subject to any corona noise because any corona noise that would occur would be located within a tunnel underground. However, while operational corona noise would be eliminated at these receptors, operational noise along the rest of the transmission route would be the same as identified in Section 3.10.6.1. As described in Section 3.10.6.1, operational corona noise would result in significant impacts along Segments 5, 6, 7, 8, 10, and 11. In addition to corona noise, two sources of ventilation noise - fans (motors) and the air moving in (inlet) and out (outlet)- would occur from underground operation; however, SCE has indicated that the system would be designed to minimize velocities in order to minimize the noise. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 5, Impact N-3 for Alternative 5 would be significant and unavoidable (Class I).

Impact N-4 (Operational noise levels would violate local standards) for Alternative 5 would be identical to that of the proposed Project as identified in Section 3.10.6.1. While Alternative 5 would avoid permanent operational corona noise impacts along the underground segment of the route in the City of Chino Hills, it would not avoid all receptors within the City boundary. Therefore, Alternative 5 would be subject to the same applicable noise standards in the same jurisdictions as the proposed Project. As described in Section 3.10.6.1, corona noise generated by the proposed transmission line would not be in compliance with noise standards of Los Angeles County, and the Cities of Chino, Monterey Park, and Whittier. Corona noise was found to be in compliance with City of Chino Hills policies; therefore Alternative 5 would not alter the analysis of City of Chino Hills policies analyzed in Table 3.10-12 (Noise Policy Compliance Table – Operation). Because there is no feasible mitigation to reduce or eliminate the increased corona noise that would be generated by Alternative 5, Impact N-4 for Alternative 5 would be significant and unavoidable (Class I).

3.10.9.2 Cumulative Effects Analysis

This section addresses potential cumulative effects that would occur as a result of implementation of Alternative 5 (Partial Underground Alternative). Based on the identical route and similarity of Alternative 5 to the proposed Project, this alternative's contribution to cumulative impacts would be similar or identical to that of the proposed Project. However, when compared to the proposed Project, Alternative 5 has the potential to increase or decrease certain cumulative impacts as a result of the underground portion of the alternative. With regards to Alternative 5, any incremental increases or decreases in the Project's contribution to the cumulative scenario would result from the location of the underground segment associated with Alternative 5.

Geographic Extent

Although a portion of Alternative 5 would be located underground, the transmission route is identical to that of the proposed Project. Therefore, the geographic extent of the cumulative analysis for Alternative 5 is exactly the same as that for Alternative 2

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 5 are exactly the same as for the proposed Project, as described in Section 3.10.6.2.

Reasonably Foreseeable Future Projects and Changes

Reasonably foreseeable future projects and changes to the cumulative scenario for Alternative 5 would be exactly the same as the proposed Project, described in Section 3.10.6.2.

Cumulative Impact Analysis

Because approximately 3.5 miles of transmission line would be placed underground for Alternative 5, operational corona noise would not contribute to cumulative scenario along this portion of the Project within the City of Chino Hills. However, cumulative construction noise impacts would be elevated at the two tunnel access locations as a result of a high number of construction vehicles entering and exiting these locations. As a whole, the remaining portions of the transmission line route would result in identical cumulative impacts as those described in Section 3.10.6.2 for the proposed Project. Along those areas, the following impacts would be cumulatively considerable and would combine with similar impacts of other projects to result in impacts that would be significant and unavoidable (Class I): Impact N-1 (Construction noise would substantially disturb sensitive receptors), Impact N-2 (Construction noise levels would violate local standards), Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations), and Impact N-4 (Operational noise levels would violate local standards).

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

Mitigation measures introduced for Alternative 5 in Section 3.10.9.1 would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level for noise along areas of the transmission line route not placed underground.

3.10.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

3.10.10.1 Direct and Indirect Effects Analysis

The following section describes the noise impacts associated with Alternative 6, as determined by the significance criteria listed in Section 3.10.4.1. Mitigation measures are introduced where necessary in order to reduce significant impacts to less-than-significant levels.

Substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above existing levels (Criterion NOI1)

Impact N-1 (Construction noise would substantially disturb sensitive receptors) for Alternative 6 would be identical to that of the proposed Project, as presented in Section 3.10.6.1 with the exception of Segment 6

and the ANF area of Segment 11. Construction of the helicopter staging areas and increased use of helicopters during construction of Alternative 6 would increase temporary noise impacts to a number of sensitive receptors within and around the ANF as compared to the proposed Project. Under this alternative, large helicopter staging areas would be constructed, therefore resulting in construction noise that would be perceptible to nearby sensitive receptors that would not be generated under the proposed Project. In addition, the delivery and removal of construction materials (mainly tower components) to and from the helicopter staging areas would introduce large vehicle noise on surrounding roadways, thereby subjecting sensitive receptors along these routes to an increase in temporary periodic vehicle noise. Sensitive receptors located in proximity to the helicopter staging areas and along the helicopter flight paths would be subject to noise from helicopter use. The noise generated by helicopters and perceived by sensitive noise receptors would increase as the height of helicopter flight increases. Therefore, the construction noise levels experienced by sensitive receptors located near helicopter staging areas, such as those identified in Table 2.6-1 (Candidate Helicopter Staging Areas in the ANF), which is presented in Chapter 2 (Description of Alternatives), would be higher than construction noise levels experienced by receptors located farther away from the helicopter staging areas.

Alternative 6 would require implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise) and N-1b (Avoid sensitive receptors during mobile construction equipment use), to reduce the effects of construction noise on sensitive receptors during construction to the maximum extent possible. Although construction-related noise disturbance would be temporary, the use of helicopters for construction in the ANF would increase disturbance to sensitive noise receptors including recreational users and wildlife along Segments 6 and 11, particularly in the vicinity of the helicopter staging areas and along the helicopter flight paths. As discussed for the proposed Project, noise-related impacts to recreation and wildlife are addressed in the Wilderness and Recreation analysis (Section 3.15) and the Biological Resources analysis (Section 3.4), respectively. Also as described for the proposed Project and presented in Section 3.10.2 (Affected Environment), sensitive noise receptors are not located along every Project segment and therefore, this impact would not occur or would occur to a lesser magnitude for some Project segments (such as Segments 6 and 11 in the ANF, where sensitive noise receptors other than recreationists and wildlife are minimal). However, in accordance with CEQA, impact significance determinations must be provided for the project as a whole, and not for individual segments of the project. Therefore, the CEQA impact significance determination for this impact is representative of the Project's overall affect. Implementation of the APMs and mitigation measures listed above and described in detail in Section 3.10.6.1 would help to reduce construction noise impacts to sensitive receptors; however, Impact N-1 for Alternative 6 would be significant and unavoidable (Class I).

Impact N-2 (Construction noise levels would violate local standards) for Alternative 6 would be identical to that of the proposed Project (please see Section 3.10.6.1), including with regard to compliance with FAA regulations through coordination with the FAA and other relevant agencies. Helicopters are not permitted to land within the boundaries of a designated Wilderness Area, including the San Gabriel WA along Segment 6. As with the proposed Project, it may be necessary for helicopters to fly at low altitudes to accommodate helicopter construction of some towers along Segment 6, which would introduce the potential for recreationists in the San Gabriel WA and nearby areas of the ANF to be disturbed by noise from low-flying helicopters. As previously mentioned, noise-related impacts to recreational activities are fully addressed in the Wilderness and Recreation analysis (Section 3.15) of this EIR/EIS. Additionally,

mitigation introduced under the proposed Project would also be applied under Alternative 6 in order to avoid Project violation or conflict with policies or regulations applicable to helicopter use, including as set forth by the FAA.

Alternative 6 would cross the same local jurisdictions as the proposed Project and is therefore subject to the same local noise standards and policies. As shown in Table 3.10-9 (Noise Policy Compliance Table – Construction), construction noise would violate several local noise ordinances and standards. Although the affects of construction noise would be temporary and would be reduced through implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise), N-1b (Avoid sensitive receptors during mobile construction equipment use), and L-2b (Aircraft flight path and safety provisions and consultations), the level of construction noise generated under Alternative 6 would still violate several local noise ordinances and standards, as described above in Table 3.10-9 (Noise Policy Compliance Table – Construction). Additionally, in accordance with CEQA, impact significance determinations must be provided for the project as a whole, and not for individual segments of the project. Therefore, the CEQA impact significance determination for this impact is representative of the Project's overall affect. Impact N-2 for Alternative 6 would be significant and unavoidable (Class I).

A permanent and substantially higher level of ambient noise source in the vicinity of sensitive receptors (Criterion NOI2)

Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations) under Alternative 6 would be identical to the proposed Project, as presented in Section 3.10.6.1. Once constructed, the operational noise conditions under Alternative 6 would not differ from the proposed Project conditions, and would affect the same sensitive noise receptors at the same levels as identified in Section 3.10.6.1 for the proposed Project. As discussed, operational corona noise would result in substantial increases from existing ambient noise along Segments 5, 6, 7, 8, 10, and 11. Because there is no feasible mitigation available to reduce or eliminate operational corona noise, Impact N-3 for Alternative 6 would be significant and unavoidable (Class I).

Impact N-4 (Operational noise levels would violate local standards) for Alternative 6 would be identical to the proposed Project, as discussed in Section 3.10.6.1. Alternative 6 would be subject to the same jurisdictional noise standards for operational noise as would the proposed Project. Furthermore, as described above for Impact N-3, corona noise generated by the proposed transmission line would not be in compliance with noise standards of Los Angeles County, and the Cities of Chino, Monterey Park, and Whittier. Because there is no feasible mitigation to reduce or eliminate the increased corona noise that would be generated by Alternative 6, Impact N-4 for Alternative 6 would be significant and unavoidable (Class I).

3.10.10.2 Cumulative Effects Analysis

This section addresses potential cumulative effects that would occur as a result of implementation of Alternative 6 (Maximum Helicopter Construction within the ANF Alternative). Based on the identical route and similarity of Alternative 6 to the proposed Project, this alternative's contribution to cumulative impacts would be similar or identical to that of the proposed Project. However, when compared to the proposed Project, Alternative 6 has the potential to increase certain cumulative construction impacts as a

result of the construction of helicopter staging areas and the increased use of helicopters associated with construction of the alternative.

Geographic Extent

Although the helicopter staging areas are outside the scope of Alternative 2 (proposed Project), the transmission route is identical to that of Alternative 2. As the helicopter staging areas are located within jurisdictions (mainly the ANF) evaluated for cumulative impacts of Alternative 2, the geographic extent of the cumulative analysis for Alternative 6 is exactly the same as that for Alternative 2.

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 6 are exactly the same as for the proposed Project, as described in Section 3.10.6.2.

Reasonably Foreseeable Future Projects and Changes

Reasonably foreseeable future projects and changes to the cumulative scenario for Alternative 6 would be exactly the same as the proposed Project, described in Section 3.10.6.2.

Cumulative Impact Analysis

The construction of required helicopter staging areas and increased use of helicopters during construction associated with Alternative 6 would result in an increased contribution to cumulative construction noise impacts when coupled with other construction and development near the helicopter staging areas and helicopter flight paths. With that exception, the remaining portions of the transmission line route would result in identical cumulative impacts as those described in Section 3.10.6.2 for Alternative 2 (proposed Project). Therefore, the following impacts would be cumulatively considerable and would combine with similar impacts of other projects to result in impacts that would be significant and unavoidable (Class I): Impact N-1 (Construction noise would substantially disturb sensitive receptors), Impact N-2 (Construction noise levels would violate local standards), Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations), and Impact N-4 (Operational noise levels would violate local standards).

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

Mitigation measures introduced for Alternative 6 in Section 3.10.10.1 would help to reduce the Alternative 6 incremental contribution to cumulative impacts. No additional mitigation measures have been identified to reduce cumulative impacts of Alternative 6 to a less-than-significant level.

3.10.11 Alternative 7: 66-kV Subtransmission Alternative

3.10.11.1 Direct and Indirect Effects Analysis

The following section describes the noise impacts associated with Alternative 7, as determined by the significance criteria listed in Section 3.10.4.1. Mitigation measures are introduced where necessary in order to reduce significant impacts to less-than-significant levels.

Substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above existing levels (Criterion NOI1)

Impact N-1 (Construction noise would substantially disturb sensitive receptors) for Alternative 7 would be identical to that of the proposed Project, as presented in Section 3.10.6.1 with the exception of those locations within Segment 7 and Segment 8 where 66-kV subtransmission line routing would occur. Construction related to two 66-kV circuits (Mesa-Narrows and Walnut-Hillgen-Industry-Mesa-Reno lines) along Segment 8 would be similar to that of the proposed Project. Two portions of the 66-kV subtranmission line sections along Segment 7 would be constructed underground. Underground construction of these 66-kV subtransmission lines would be completed by traditional direct-bury methods along the majority of the underground alignment with the exception of one channel crossing, which would require boring. This additional construction required for underground placement of the 66-kV subtransmission line would result in an increase to both stationary and mobile construction equipment noise used along these routes. Sensitive receptors along the re-routed and underground portions of this alternative include residences, a highs school, and parks. Trenching required for installation of the underground portions of this alternative would result in increased truck trips to haul excavated material from the alignment. These truck trips could generate noise levels that could impact receptors along truck routes. The remainder of the Alternative 7 route would result in identical construction noise impacts as those described above for the proposed Project, in Section 3.10.6.1.

Alternative 7 would require implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise), N-1b (Avoid sensitive receptors during mobile construction equipment use), and L-2b (Aircraft flight path and safety provisions and consultations), to reduce the effects of construction noise on sensitive receptors during construction to the maximum extent possible. South El Monte High School is located approximately 300 feet from the nearest underground portion of Segment 7 that would be located along Durfee Avenue. Construction noise along this portion Segment 7 would result in a substantial increase to existing ambient noise for this sensitive receptor. Construction noise impacts for the remainder of the route would be identical to those described above for the proposed Project. As described for Alternative 2, even with implementation of the mitigation measures listed above and described in detail in Section 3.10.6.1, Impact N-1 regarding construction noise impacts to sensitive receptors for Alternative 7 would be significant and unavoidable (Class I).

Impact N-2 (Construction noise levels would violate local standards) for Alternative 7 would be identical to that of the proposed Project, as described in Section 3.10.6.1. While Alternative 7 would include underground construction activities and new routes for 66 kV subtransmission lines within Segment 7 and Segment 8, as shown in Figures 2.7-1 (Alternative 7: Duck Farm 66-kV Underground) and 2.7-2 (Alternative 7: Whittier Narrows 66-kV Underground and Overhead Re-Routes), both of which are presented in Chapter 2 (Description of Alternatives), Alternative 7 would cross the same jurisdictions with applicable noise standards to receptors subject to construction noise as the proposed Project. Based on the distance of the proposed Alternative 7 subtransmission lines to any residential development, as shown in Figures 2.7-1 (Alternative 7: Duck Farm 66-kV Underground) and 2.7-2 (Alternative 7: Whittier Narrows 66-kV Underground and Overhead Re-Routes), it is not anticipated that noise generated during construction from equipment would travel across the ROW and construction zones and be perceptible to sensitive receptors. South El Monte High School is located approximately 300 feet from the nearest underground portion of Segment 7 that would be located along Durfee Avenue. As such, construction

noise along this portion Segment 7 would result in a substantial increase to existing ambient noise for this sensitive receptor. Therefore, construction activities associated with Alternative 7 would not be in compliance with the City of South El Monte Municipal Code Noise Ordinance as analyzed in Table 3.10-9 (Noise Policy Compliance Table – Construction).The remainder of the Alternative 7 transmission line (including a portion of Segment 7 located within the City of South El Monte) would be identical to that analyzed above for the proposed Project and would result in violations of applicable construction noise policies as shown in Table 3.10-9 (Noise Policy Compliance Table – Construction). Therefore Alternative 7 would not alter the analysis of City of South El Monte policies analyzed in Table 3.10-9 (Noise Policy Compliance Table – Construction) and would violate applicable construction noise policies.

Although construction noise would be temporary and would be reduced by implementation of APMs NOI-1 (Limit Hours and Days for Construction), NOI-3 (Advance Notification), and NOI-4 (Establish Toll Free Number), as well as Mitigation Measures N-1a (Implement Best Management Practices for construction noise), N-1b (Avoid sensitive receptors during mobile construction equipment use), and L-2b (Aircraft flight path and safety provisions and consultations), the level of construction noise that would be generated under Alternative 7 would violate several local noise ordinances and standards, as described above in Table 3.10-9 (Noise Policy Compliance Table – Construction) for Alternative 7 as a whole. Therefore, Impact N-2 for Alternative 7 would be significant and unavoidable (Class I).

A permanent and substantially higher level of ambient noise source in the vicinity of sensitive receptors (Criterion NOI2)

Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations) for Alternative 7 would be similar to that analyzed above for the proposed Project. Once operational, the proposed 66 kV subtransmission lines are not expected to result in significant operational noise due to the underground placement of two of the lines (Rio Hondo-Amador-Jose-Mesa and the Jose-Mesa 66-kV subtransmission lines) and the distance of sensitive receptors from the above ground 66-kV subtransmission line routes (Mesa-Narrows 66-kV and Walnut-Hillgen-Industry-Mesa-Reno 66-kV). Although South El Monte High School would be located approximately 300 feet from one of the underground portions of Segment 7, noise generated from this portion of the line would not be perceptible above ground. Operational noise along the rest of the Alternative 7 transmission route would be the same as that analyzed for the proposed Project in Section 3.10.6.1. As described in Section 3.10.6.1, operational corona noise would result in significant operational noise impacts within Segments 5, 6, 7, 8, 10, and 11. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 7 as a whole, Impact N-3 for Alternative 7 would be significant and unavoidable (Class I).

Impact N-4 (Operational noise levels would violate local standards) for Alternative 7 would be similar to that of the proposed Project as identified in Section 3.10.6.1. While Alternative 7 would result in no permanent operational corona noise impacts along the 66-kV subtransmission routes, the remainder of the Alternative 7 transmission line (including a portion of Segment 7 located within the City of South El Monte) would continue to expose a number of sensitive receptors to significant noise impacts associated with operational corona noise. Therefore, Alternative 7 would be subject to the same applicable noise standards in the same jurisdictions as the proposed Project. As described in Section 3.10.6.1, operational corona noise generated by the proposed transmission line would not be in compliance with a number of applicable noise standards, including the City of South El Monte. Therefore Alternative 7 would not alter the policies analyzed in Table 3.10-12 (Noise Policy Compliance Table – Operation). Because there is no

feasible mitigation to reduce or eliminate the increased corona noise that would be generated by Alternative 7 as a whole, Impact N-4 for Alternative 7 would be significant and unavoidable (Class I).

3.10.11.2 Cumulative Effects Analysis

This section addresses potential cumulative effects that would occur as a result of implementation of Alternative 7 (66-kV Subtransmission Alternative). Based on the similar route of Alternative 7 to the proposed Project, this alternative's contribution to cumulative impacts would be similar or identical to that of the proposed Project. However, when compared to the proposed Project, Alternative 7 has the potential to increase certain cumulative construction impacts as a result of the increased noise from underground construction.

Geographic Extent

Although Alternative 7 includes three 66-kV segments that deviate from the proposed Project route, these subtransmission routes are located near and within the same jurisdictions to those of the proposed Project. Therefore, the geographic extent of the cumulative analysis for Alternative 7 is the same as that for the proposed Project.

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 7 are the same as for the proposed Project, as described in Section 3.10.6.2.

Reasonably Foreseeable Future Projects and Changes

Reasonably foreseeable future projects and changes to the cumulative scenario for Alternative 7 would be exactly the same as the proposed Project, described in Section 3.10.6.2.

Cumulative Impact Analysis

The placement of two 66-kV subtransmission lines underground associated with Alternative 7 would increase the potential contribution to cumulative construction noise impacts to any receptors near these construction routes, including residences, parks, and South El Monte High School. Once operational, these 66-kV subtransmission lines are expected to have no cumulative contribution to operational noise due to the underground placement of two of the lines (Rio Hondo-Amador-Jose-Mesa and the Jose-Mesa 66-kV subtransmission lines) and the distance of sensitive receptors from the above ground relocation of other 66-kV circuits (Mesa-Narrows 66-kV and Walnut-Hillgen-Industry-Mesa-Reno 66-kV).

As a whole, the remaining portions of the transmission line route would result in identical cumulative noise impacts as those described in Section 3.10.6.2 for the proposed Project. Along those areas, noise impacts would be cumulatively considerable and would combine with similar noise impacts of nearby cumulative projects to result in noise impacts that would be significant and unavoidable (Class I): Impact N-1 (Construction noise would substantially disturb sensitive receptors), Impact N-2 (Construction noise levels would violate local standards), Impact N-3 (Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations), and Impact N-4 (Operational noise levels would violate local standards).

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

Mitigation measures introduced for Alternative 7 in Section 3.10.11.1 would help to reduce this alternative's incremental contribution to cumulative noise impacts. However, no additional mitigation

measures have been identified that would reduce cumulative impacts of Alternative 7 to a less-than-significant level.

3.10.12 Impact Significance Summary

Table 3.10-13 summarizes the direct and indirect noise impacts of the proposed Project and alternatives. It is important to note that as a result of the varying presence and proximity of sensitive noise receptors along the alignment of the proposed Project and alternatives, the occurrence and significance of each identified noise impact is variable for each of the Project segments (Segments 4 through 11). The presence of sensitive noise receptors along the following Project segments is considered to be minimal and as a result, the significance of noise impacts in these areas would be less than in areas where sensitive noise receptors are located in closer proximity to the Project alignment: Segments 10 and 4 in the North Region, Segments 6 and 11 in the Central Region (ANF), and parts of Segment 8 in the South Region.

Along Segments 6 and 11 in the ANF, the primary sensitive noise receptors present include recreationists and wildlife; however, as previously described, potential noise-related disruptions to recreationists are addressed in the Wilderness and Recreation analysis (Section 3.15) of this EIR/EIS, while potential noise-related disruptions to wildlife are addressed in the Biological Resources analysis (Section 3.4) of this EIR/EIS. There are minimal dispersed residences located along Segments 6 and 11 in the ANF, and no other sensitive noise receptors have been identified. However, in accordance with CEQA, impact significance determinations must be provided for the project as a whole, and not for individual segments of the project. Therefore, the CEQA impact significance determinations provided below in Table 3.10-13 are indicative of the entire Project's impact. The "NFS Lands" column in Table 3.10-13 is used to identify whether an impact would be expected to occur on NFS lands in the ANF. As previously described, the occurrence of noise impacts is dependent upon the presence of sensitive noise receptors and therefore, where an impact has been identified as not occurring on NFS lands, it is because sensitive receptors (besides recreationists and wildlife) that would potentially be affected by Project noise have not been identified on NFS lands.

The direct and indirect effects of the Project and alternatives have been fully described in the preceding Sections 3.10.6 through 3.10.11. Alternative 1 (No Project/No Action) impacts are fully described in Sections 3.10.5; however, since no potential future project information is available an impact significance level for Alternative 1 is not included in the table below.

Table 3.10-13. Summary of Impacts and Mitigation Measures – Noise

Impact	CEQA Impact Significance								Mitigation Measures
	Alt. 1+	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	NFS Lands*	
N-1: Construction noise would substantially disturb sensitive receptors.	N/A	Class I	Class I	Class I	Class I	Class I	Class I	Yes*	N-1a: Implement Best Management Practices for construction noise. N-1b: Avoid sensitive receptors during mobile construction equipment use. L-2b: Aircraft flight path and safety provisions and consultations.
N-2: Construction noise levels would violate local standards.	N/A	Class I	Class I	Class I	Class I	Class I	Class I	No	N-1a (see Impact N-1) N-1b (see Impact N-1) L-2b (see Impact N-1)

Table 3.10-13. Summary of Impacts and Mitigation Measures – Noise

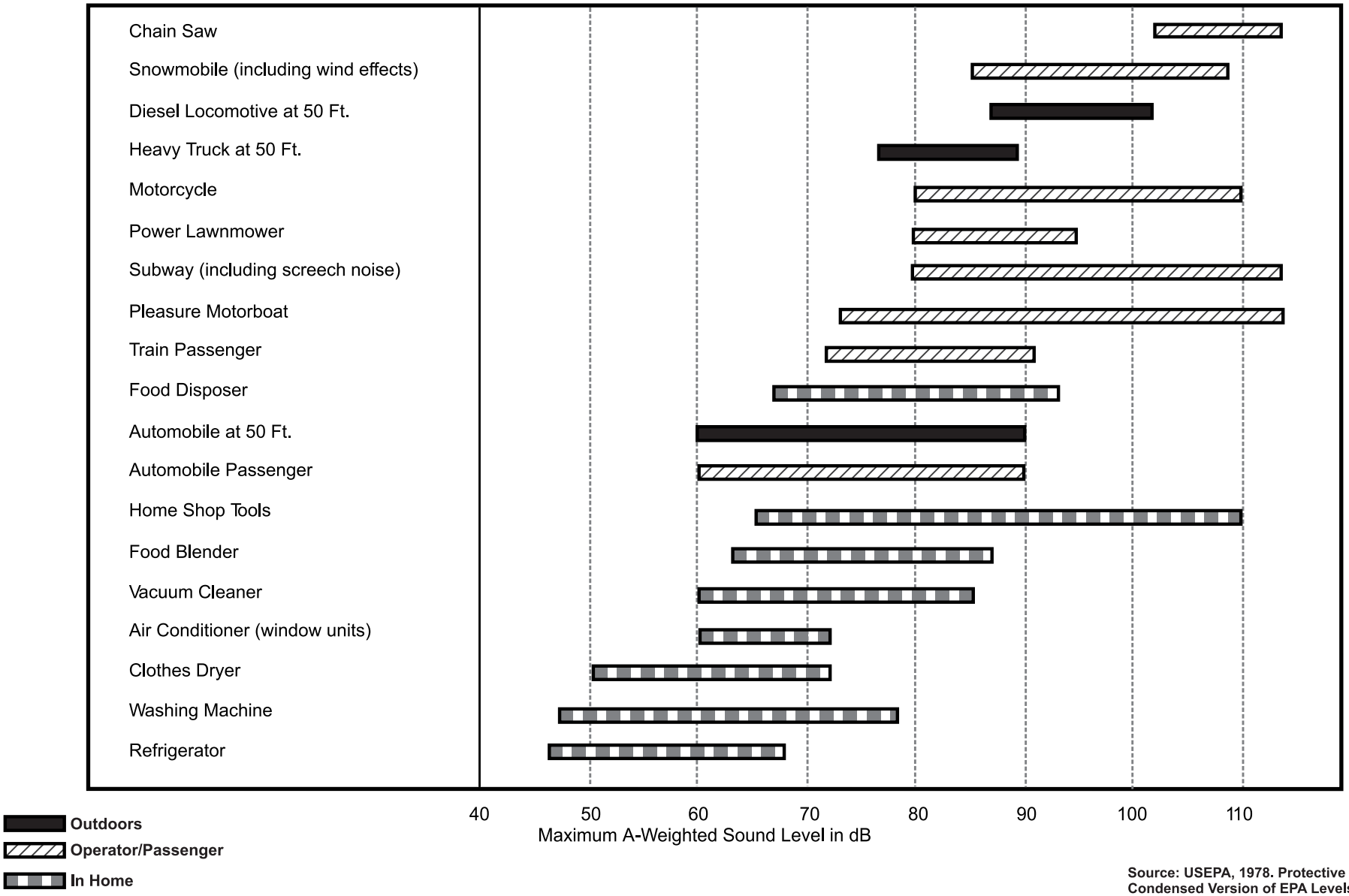
Impact	CEQA Impact Significance								Mitigation Measures
	Alt. 1+	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	NFS Lands*	
N-3: Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations.	N/A	Class I	Class I	Class I	Class I	Class I	Class I	Yes	None available
N-4: Operational noise levels would violate local standards.	N/A	Class I	Class I	Class I	Class I	Class I	Class I	No	None available

N/A = Not Available.

* Indicates whether this impact is applicable to the portion of the Project on National Forest System lands.

+ As described in the text preceding this table, sensitive noise receptors on NFS lands in the ANF include recreationists, wildlife, and dispersed residences; although effects to recreationists and wildlife are respectively discussed in the Wilderness and Recreation analysis (Section 3.15) and the Biological Resources analysis (Section 3.4), construction noise under the proposed Project and each alternative would be substantial (i.e. would increase ambient noise by more than five dBA) and would therefore have the potential to affect other sensitive noise receptors on NFS lands in the ANF, including dispersed residences.

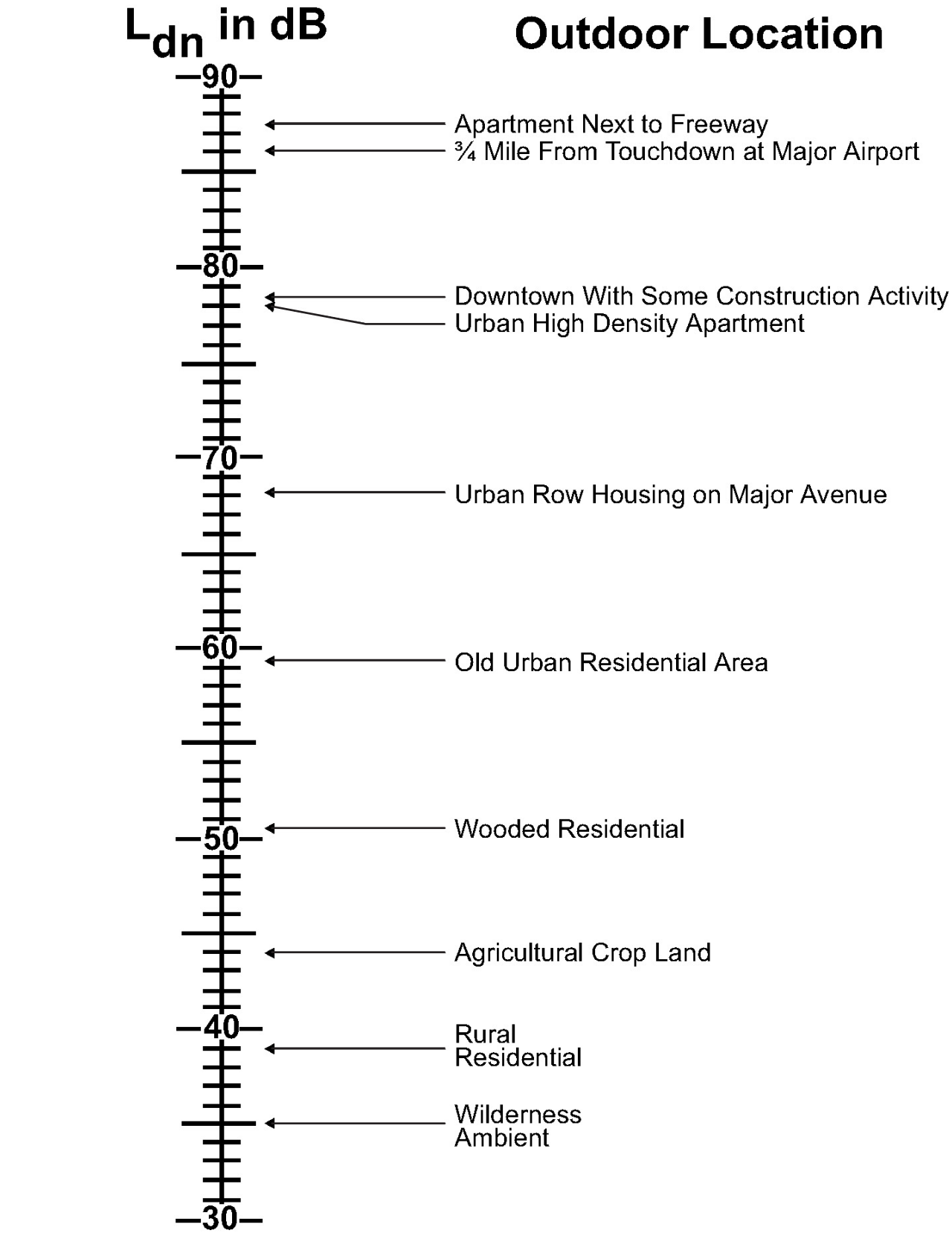
As noted in Table 3.10-13, Impacts N-2 and N-4 would not occur on NFS lands because the 2005 Forest Plan does not specifically address noise regulation and therefore, neither construction nor operation and maintenance would have the potential to violate noise policies or standards on NFS lands. However, these impacts are considered to be Class I (significant and unavoidable) for the Project as a whole because, in accordance with CEQA, impact significance determinations must be provided for the overall project, and not for individual segments of the project. As described in Sections 3.10.5 through 3.10.11, numerous local noise standards would be affected by the Project as well as each of the identified Project alternatives and therefore, the CEQA impact significance determination is representative of the Project's overall affect. Please see Table 3.10-1 (Summary Comparison of Environmental Issues/Impacts – Noise) at the beginning of this issue area analysis for a more descriptive summary comparison of the predicted noise impacts for the proposed Project and each of the Project alternatives.



Source: USEPA, 1978. Protective Noise Levels Condensed Version of EPA Levels Document

Figure 3.10-1

Typical Range of Common Sounds Heard in the Environment



Source: USEPA, 1978. Protective Noise Levels Condensed Version of EPA Levels Document

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Figure 3.10-2
Outdoor Day/Night Sound Levels in Different Areas