4.11 Noise

This section evaluates potential impacts on ambient noise levels from construction and operation of the Proposed Project and alternatives. The analysis presented below is based on review of the Proponent's Environmental Assessment (SCE, 2008), ambient noise measurements taken in the Proposed Project vicinity, and local noise ordinances and regulations set by cities and the County in the study area.

4.11.1 Setting

Noise Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).

Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. In fact, community noise varies continuously with time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric

conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) makes community noise constantly variable throughout a day.

These successive additions of sound to the community noise environment cause the community noise level to vary from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

L_{dn}: The energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers at industrial plants often experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individuals past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;

- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a *linear* scale: it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A *logarithmic* scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1, 10, 100, 1,000, 10,000, etc., multiplying the variable plotted on the x-axis 10. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Point sources of noise, including stationary mobile sources such as idling vehicles or onsite construction equipment, attenuate (lessen) at a rate of 6.0 dBA to 7.5 dBA per doubling of distance from the source, depending upon environmental conditions (e.g., atmospheric conditions, type of ground surface, etc.). Widely distributed noises such as a large industrial facility spread over many acres or a street with moving vehicles (a “line” source) would typically attenuate at a lower rate of approximately 3.0 to 4.5 dBA per doubling distance from the source (also dependent upon environmental conditions) (Caltrans, 1998).

Existing Ambient Noise Environment

The study area is located in the Coachella Valley area of Riverside County, California. Much of the study area experiences relatively low (40-55 dBA) noise levels due to the lack of loud noise sources. The main contributors to the noise environment along the Proposed Project and alternative subtransmission and transmission line alignments include vehicle traffic on nearby roads; airplane over flights; sounds emanating from residential neighborhoods, including voices and noises from household appliances; and naturally occurring sounds such as wind and wind-generated rustling. Additional noise sources include electrical and industrial devices and other man-made localized sources. Vehicle and over flight noises can range from approximately 50 to 80 dBA, depending on the distance from the source. Ambient natural noise sources such as wind can be expected to generate noise levels in the range of 45 to 55 dBA.

Ambient L_{eq} and L_{max} noise measurement data were collected to further characterize noise conditions in the vicinity of the Proposed Project and alternative alignments. Short-term

measurements were taken at six locations (see Table 4.11-1 for the measured noise levels). Figure 4.11-1a shows noise measurement locations in the Farrell-Garnet study area while Figure 4.11-1b shows noise measurement locations in the Mirage-Santa Rosa study area. Ambient

TABLE 4.11-1
AMBIENT NOISE LEVELS IN THE STUDY AREA

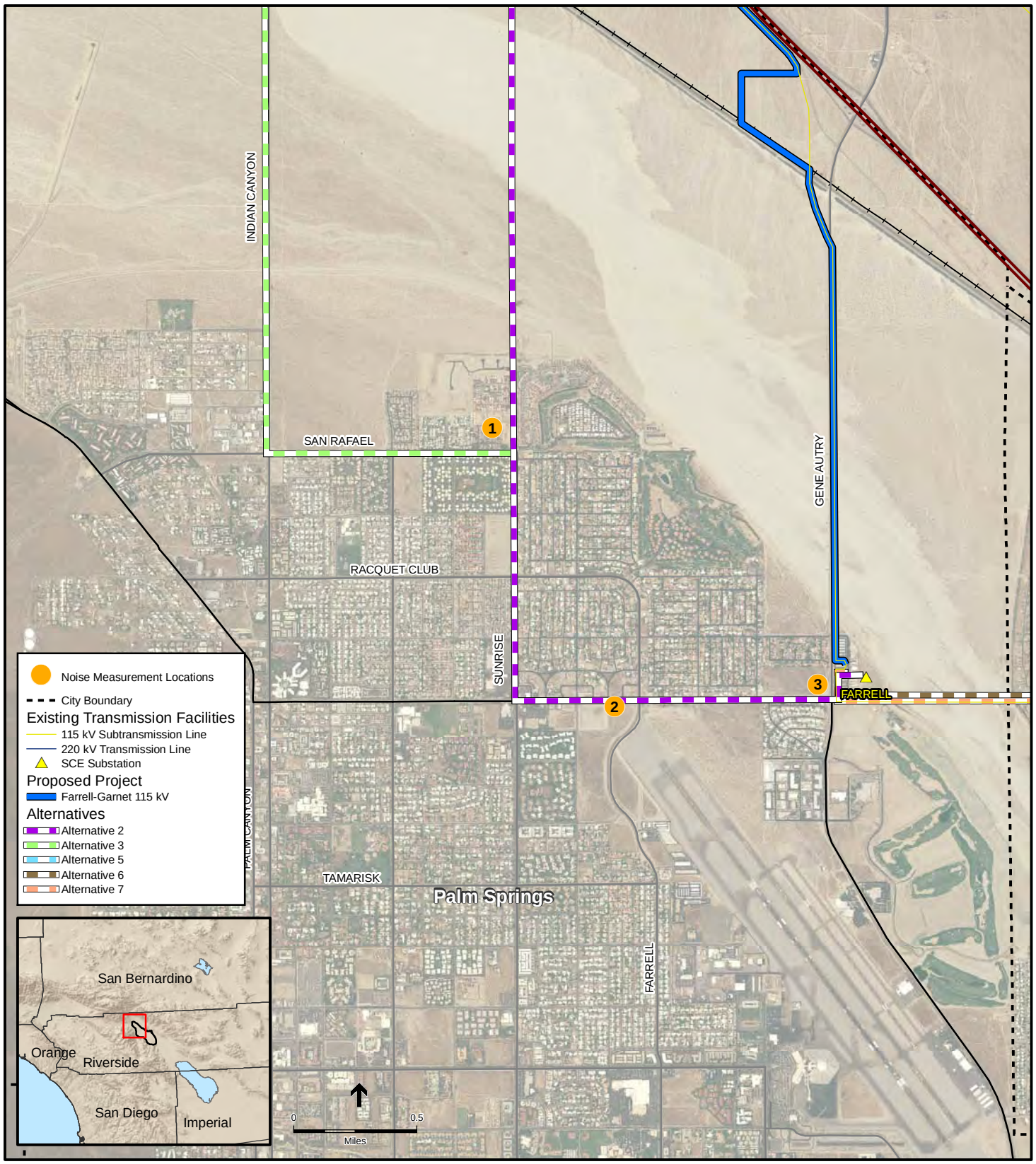
Measurement Location	Time	L_{eq}	L_{max}	Predominant Noise Sources
1. Sunrise Way				
Just west of Sunrise Way approximately 1,000 feet north of San Rafael Drive.	3:37 p.m.	54.9	76.1	Noise from residential appliances.
2. East Vista Chino and Park View Drive				
Near the corner of East Vista Chino and Park View Drive adjacent to residence.	3:15 p.m.	58.3	68.5	Automobile traffic on East Vista Chino.
3. North Gene Autry Trail				
Adjacent to North Gene Autry Trail, near a residence. Approximately 500 feet north of East Vista Chino and approximately 250 feet west of Farrell Substation.	2:55 p.m.	57.0	72.0	Automobile noises.
4. Vista de Oro				
Adjacent to Vista de Oro approximately 2,500 feet north of Ramon Road.	2:06 p.m.	44.2	55.5	Automobile noises.
5. Black Eagle and Chiricahua Drive				
At the corner of Black Eagle Drive and Chiricahua Drive. Approximately 1,500 feet west-southwest of the Mirage Substation.	1:35 p.m.	47.2	73.4	Automobile traffic on Ramon Road.
6. Bell Road and Elizabeth Drive				
At the corner of Elizabeth Drive and Bell Road adjacent to a residence. Approximately 100 feet from the existing 115 kV line.	1:05 p.m.	40.6	76.6	Airplanes flying overhead and residential activities.

NOTE: Short-term (ten minute) measurements were collected on Thursday, June 19, 2008.

L_{eq} noise levels in the study areas were between 40.6 and 58.3 dBA. The predominant noise source in the study area was automobile traffic.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. The nearest sensitive receptors to each component of the Proposed Project and the alternatives are described in more detail below.

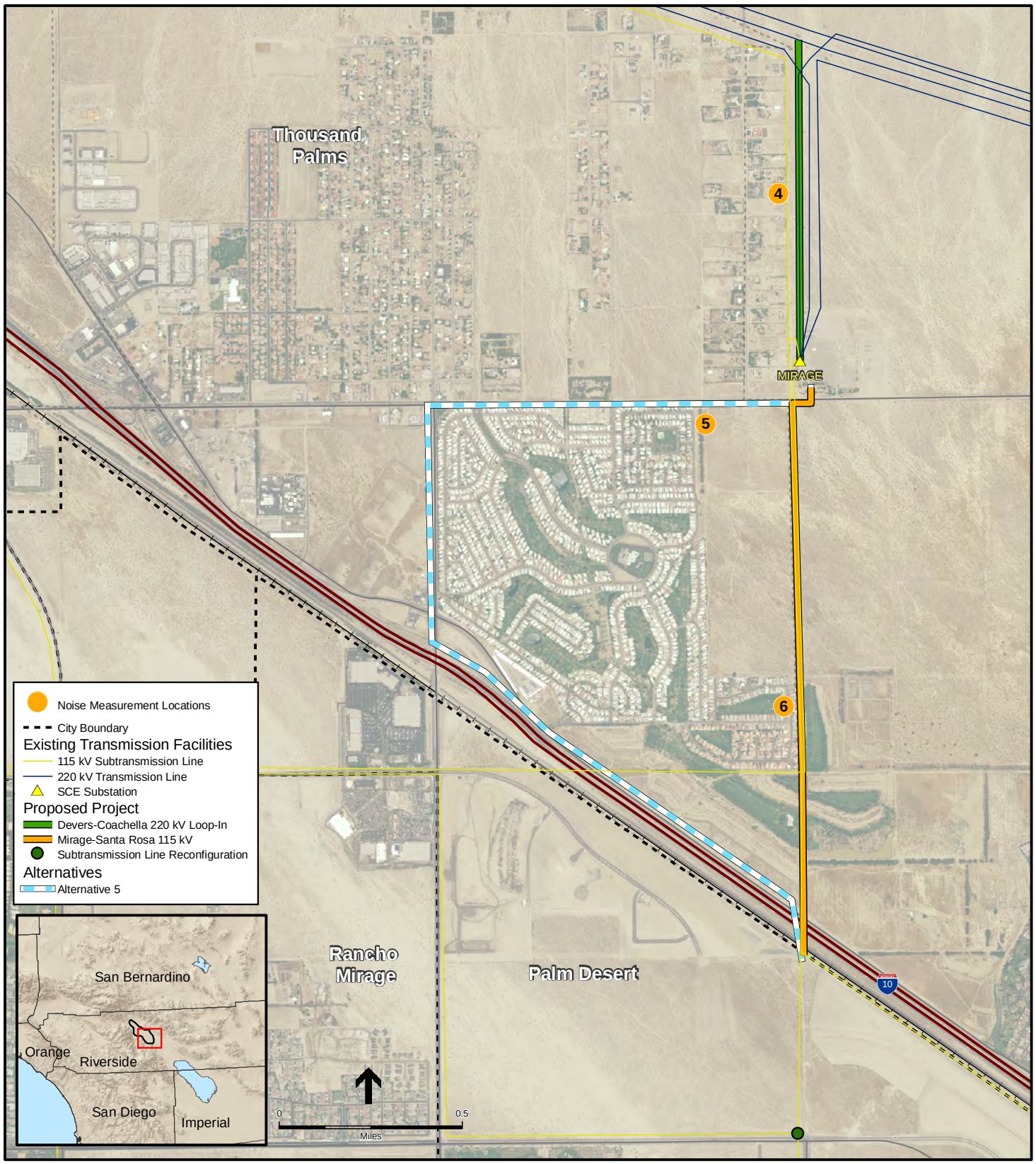


SOURCE: SCE, 2008

Devers-Mirage 115 kV Subtransmission System Split Project. 207059

Figure 4.11-1a

Noise Monitoring Locations
Farell-Garnet Study Area



SOURCE: SCE, 2008

Devers-Mirage 115 kV Subtransmission System Split Project. 207059

Figure 4.11-1b

Noise Monitoring Locations
Mirage-Santa Rosa Study Area

Farrell – Garnet Study Area

Proposed Project

The proposed Farrell-Garnet 115 kV subtransmission line would be 5.8 miles long, beginning at Farrell Substation and ending at Garnet Substation. The land along this alignment is primarily undeveloped; however, approximately 700 feet of the southern portion of the alignment borders an existing residential neighborhood. These residences are located along Norloti Street to the west of North Gene Autry Trail, approximately 150 feet from the proposed Farrell-Garnet subtransmission line alignment. Palm Springs Montessori School is approximately 1,300 feet south-southwest of the Farrell Substation.

The nearest receptors to the proposed Varner/Date Palm reconfiguration site are residences south of I-10 that are located over 5,000 feet to the southwest. The nearest receptors to the Edom communication site include a number of residences located along Moon Ranch Road, over 4,800 feet from the site.

Substations included in the Farrell-Garnet study area that would require modifications under the Proposed Project include the Devers, Garnet, Farrell, Thornhill, and the Eisenhower substations. Table 4.11-2 identifies the nearest sensitive receptor to each substation as well as the distance between the substation and receptor.

TABLE 4.11-2
SUBSTATION SENSITIVE RECEPTORS IN THE FARRELL-GARNET STUDY AREA

Substation	Distance to Nearest Sensitive Receptor	Receptor Description
Devers	800 feet	Residences located along Diablo road, south of 16th Avenue
Garnet	4,800 feet	Residences located north of the substation along Indian Avenue
Farrell	160 feet	Residences located to the west of the substation along Gene Autry Trail
Thornhill	32 feet	Residences located directly adjacent to the substation property line
Eisenhower	896 feet	Residences located west of the substation along East Mesquite Avenue

Alternative 2

The Alternative 2 alignment begins at the Farrell Substation and runs west along East Vista Chino for approximately 1.3 miles where it turns and heads north along North Sunrise Way. The alternative subtransmission line would continue north until reaching the existing SCE subtransmission line just south of Interstate 10. From here the line would continue in existing SCE ROW until reaching the Garnet Substation. The first 2.6 miles of the Alternative 2 alignment passes directly adjacent to residential land uses located along East Vista Chino and North Sunrise Way with the remainder crossing primarily through open space and undeveloped land. In addition to residential uses, this alternative would pass within 200 feet of the Montessori Elementary School of Palm Springs and the Desert Son-Shine Preschool and Kindergarten, both of which are located near the corner of East Vista Chino and North Sunrise Way. Other schools within half a mile of the alternative include Raymond Cree Middle School and First School of the Desert

Preschool-Childcare. The Alterative 2 subtransmission line would also be located immediately adjacent to a Jehovah's Witness church on East Vista Chino.

Alternative 3

The Alterative 3 alignment begins at Farrell Substation and runs west along East Vista Chino for approximately 1.3 miles where it turns and heads north along North Sunrise Way for approximately one mile until reaching San Rafael Drive. At San Rafael Drive the alternative subtransmission line would turn and head west for approximately one mile until reaching Indian Canyon Drive where it would head north until reaching the Garnet Substation. The first 3.8 miles of the Alternative 3 alignment pass directly adjacent to residential land uses along East Vista Chino, North Sunrise Way, San Rafael Drive, and Indian Canyon Drive while the remainder of the alignment crosses primarily through open space and undeveloped land. Schools within half a mile of the alternative alignment include Raymond Cree Middle School, First School of the Desert Preschool-Childcare, Vista Del Monte Elementary School, and Desert Highlands Head Start. The Alternative 3 alignment also passes within 200 feet of the Montessori Elementary School of Palm Springs and the Desert Son-Shine Preschool and Kindergarten. This alternative subtransmission line would be located directly adjacent to a Jehovah's Witness church on East Vista Chino and Iglesia La Luz Del Mundo on Indian Canyon Drive.

Alternative 6

The Alternative 6 alignment begins at the Farrell Substation and heads east along East Vista Chino for about 2.7 miles to Date Palm Drive. At Date Palm Drive the alternative subtransmission line would head north to the intersection of Date Palm Drive and Varner Road where the line would tie into Garnet-Santa Rosa 115 kV subtransmission line. Approximately two miles of the Alternative 6 alignment cross directly adjacent to residents along East Vista Chino, while the remainder of the alignment is primarily in undeveloped land or open space. In addition to residential uses, the line would be located within half a mile of Rio Vista Elementary School and within 500 feet of the Bible Baptist Church on Landau Boulevard.

Alternative 7

The Alternative 7 alignment begins at the Farrell Substation and heads east along East Vista Chino for about 1.7 miles to Landau Boulevard. The alternative subtransmission line would continue south on Landau Boulevard for approximately 2.5 miles to 33rd Avenue. At 33rd Street, the line would turn east and continue along 33rd Street for approximately 0.9 mile to Date Palm Drive, where the line would turn north. On Date Palm Drive the alignment continues north for four miles to the intersection of Varner Road and Date Palm Drive where the line would tie into the existing Garnet-Santa Rosa 115 kV subtransmission line. Approximately seven miles of the Alternative 7 subtransmission line would cross directly adjacent to residents along East Vista Chino, Landau Boulevard, 33rd Avenue, and Date Palm Drive. In addition to residents, the line would be located directly adjacent to Landau Elementary School and Mount San Jacinto High School. The alternative subtransmission line would also be located within half a mile of Rio Vista Elementary School and Sunny Sands Elementary School. Churches located adjacent to the Alternative 7 alignment include the Palm Springs Church near 33rd Avenue and Cathedral

Canyon Drive and the Bridge Calvary Chapel at Date Palm Drive and Corral Road. Other churches in the vicinity include the Bible Baptist Church located approximately 500 feet north of the alignment and the Metropolitan Community Church of the Coachella Valley located approximately 600 feet west of the alignment on Candlewood Drive.

Mirage – Santa Rosa Study Area

Proposed Project

The proposed Mirage-Santa Rosa 115 kV alignment is approximately 1.5 miles long and adjacent to residential uses and undeveloped land. There are a number of residences located directly west of the proposed Mirage-Santa Rosa alignment along Bell Road between Calle Desierto and Calle Tosca. The distance between these residences and the SCE ROW is approximately 100 feet. Just north of I-10, the proposed alignment traverses the Tri Palm Golf Course.

Existing 115 kV lines in the Mirage-Santa Rosa study area would be reconfigured at the intersection of Portola Avenue and Gerald Ford Drive and at the intersection of Dinah Shore and Bob Hope Drive. The nearest receptors to the intersection of Portola Avenue and Gerald Ford Drive are along Portola Avenue, approximately 300 feet south of Gerald Ford Drive. The nearest receptors to the intersection of Dinah Shore Drive and Bob Hope Drive include a number of residences within 50 feet of the intersection to the southwest.

The proposed Devers-Coachella Valley 220 kV Loop-In alignment is 0.8 mile long within the western side of an existing SCE right-of-way. The nearest residential property line to the proposed 220 kV loop-in alignment are located approximately 160 feet to the west along Vista de Oro. However, the nearest residence is located approximately 250 feet west of the alignment.

Substations that would be upgraded in the Mirage-Santa Rosa study area include the Mirage, Tamarisk, Santa Rosa, Concho, and Indian Wells substations. The nearest sensitive receptors to each of these substations are identified in Table 4.11-3.

TABLE 4.11-3
SENSITIVE RECEPTORS NEAR SUBSTATIONS IN THE MIRAGE-SANTA ROSA STUDY AREA

Substation	Distance to Nearest Sensitive Receptor	Receptor Description
Mirage	450 feet	Residences located west of the substation
Tamarisk	32 feet	Residences located directly adjacent to the substation property line
Santa Rosa	128 feet	Residences located south of the substation along Don Quixote Drive
Concho	192 feet	Residences north of the substation along Country Club Drive
Indian Wells	112 feet	Residences directly west of the substation along Orange Blossom Lane and Wildflower Lane

Alternative 5

The Alternative 5 alignment is approximately 3.1 miles long, the majority of which passes directly adjacent to existing residential land uses along Ramon Road, Monterey Avenue, and Varner Road.

Regulatory Context

Federal, State, and local agencies regulate different aspects of environmental noise. Federal and State agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities.

Riverside County

County Code

Chapter 9.52, *Noise Regulation*, of the Riverside County Code sets forth noise restrictions to protect the health, safety, and general welfare of residents of Riverside County. This ordinance restricts construction hours within one-quarter mile of an inhabited dwelling to between the hours of six a.m. and six p.m. during the months of June through September and to between the hours of 7 a.m. and 6 p.m. during the months of October through May (Riverside County, 2006).

General Plan

Table 4.11-4 presents restrictions on exterior noise from stationary sources for residential land use zones as identified in the Riverside County General Plan. These restrictions do not apply to construction noise.

TABLE 4.11-4
RIVERSIDE COUNTY LAND USE NOISE STANDARDS FOR STATIONARY SOURCES

Land Use	Time Period	Exterior Standards (L_{eq})[a]
Residential	10 p.m. to 7 a.m. 7 a.m. to 10 p.m.	45 65

[a] Standard is for a 10-minute average.

SOURCE: RCIP, 2003.

City of Palm Springs

Municipal Code

The maximum permissible exterior sound levels by receiving land use for the City of Palm Springs are presented in Table 4.11-5. Noise levels from construction and demolition equipment are exempt from the exterior and interior noise limits. However, the Municipal Code does restrict

TABLE 4.11-5
CITY OF PALM SPRINGS EXTERIOR NOISE LIMITS

Receiving Land Zone	Time Period	Noise Level (dBA)
Residential (Low Density)	7 a.m. – 6 p.m.	50
	6 p.m. – 10 p.m.	45
	10 p.m. – 7 a.m.	40
Residential (High Density)	7 a.m. – 6 p.m.	60
	6 p.m. – 10 p.m.	55
	10 p.m. – 7 a.m.	50
Commercial	7 a.m. – 6 p.m.	60
	6 p.m. – 10 p.m.	55
	10 p.m. – 7 a.m.	50
Industrial	7 a.m. – 6 p.m.	70
	6 p.m. – 10 p.m.	65
	10 p.m. – 7 a.m.	60

SOURCE: City of Palm Springs, 2008a.

the hours during which construction activities may occur to between 7 a.m. and 7 p.m. on weekdays and between 8 a.m. and 5 p.m. on Saturdays. Construction activities are not permitted on Sundays or Holidays (City of Palm Springs, 2008b).

General Plan

The City of Palm Springs General Plan requires that construction activities that impact adjacent residential units comply with the hours of operation and noise levels identified in the City's Municipal Code. Furthermore, General Plan Policy NS3.11 requires that construction activities incorporate feasible and practical techniques to minimize the noise impacts on adjacent uses, such as the use of mufflers and intake silencers that are no less effective than when originally equipped (City of Palm Springs, 2007).

City of Cathedral City

Municipal Code

The City of Cathedral City does not include noise level restrictions; however, it does limit hours in which construction work may be conducted based on the time of year. Permitted hours for construction work are presented in Table 4.11-6 (City of Cathedral City, 2008).

General Plan

Policy 4.A from the Noise Element of the City's General Plan limits construction and delivery truck traffic to East Palm Canyon Drive, I-10, Date Palm Drive, Dinah Shore Drive, Ramon Road, and Vista Chino unless location-specific services and deliveries are needed (City of Cathedral City, 2002).

TABLE 4.11-6
CITY OF CATHEDRAL CITY PERMITTED CONSTRUCTION WORK HOURS

Day	Permitted Hours	
	October 1st through April 30th	May 1st through September 30th
Monday – Friday	7:00 a.m. – 5:30 p.m.	6:00 a.m. – 7:00 p.m.
Saturday	8:00 a.m. – 5:00 p.m.	8:00 a.m. – 5:00 p.m.
Sunday and State Holidays	No permissible hours	No permissible hours

SOURCE: City of Cathedral City, 2008.

City of Rancho Mirage

Municipal Code

Table 4.11-7 presents exterior noise level limits for 30-minute time periods. Noise levels from construction and demolition equipment are exempt from the exterior and interior noise limits. However, the Municipal Code does restrict the hours during which construction activities may occur to between 7 a.m. and 7 p.m. on weekdays and Saturdays. Construction activities are not permitted on Sundays and Holidays (City of Rancho Mirage, 2008).

TABLE 4.11-7
CITY OF RANCHO MIRAGE EXTERIOR NOISE LIMITS

Receiving Land Zone	Time Period	Noise Level (dBA)
Residential (Low Density)	7 a.m. – 6 p.m. 6 p.m. – 10 p.m. 10 p.m. – 7 a.m.	55 50 45
Residential (Medium and High Density), Hospital, Open Space	7 a.m. – 6 p.m. 6 p.m. – 10 p.m. 10 p.m. – 7 a.m.	60 55 50
Commercial Office, Resort Commercial, Mixed Use, Institutional	7 a.m. – 6 p.m. 6 p.m. – 10 p.m. 10 p.m. – 7 a.m.	65 50 55
Commercial Neighborhood, General Commercial, Commercial Recreation, Light Industrial	7 a.m. – 6 p.m. 6 p.m. – 10 p.m. 10 p.m. – 7 a.m.	70 65 60

SOURCE: City of Rancho Mirage, 2008.

General Plan

The City of Rancho Mirage General Plan identifies the Municipal Code's exterior noise limits (see Table 4.11-7) as the adopted City noise standards (City of Rancho Mirage, 2005).

City of Palm Desert

Municipal Code

Table 4.11-8 presents exterior noise level limits averaged over 10-minute periods. Noise levels from construction and demolition equipment are exempt from the exterior and interior noise limits. However, the City of Palm Desert implements the same restrictions on construction hours as the City of Cathedral City (see Table 4.11-6) (City of Palm Desert, 2008).

TABLE 4.11-8
CITY OF PALM DESERT EXTERIOR NOISE LIMITS

Receiving Land Zone	Time Period	Noise Level (dBA)
Residential (All zones)	7 a.m. – 10 p.m. 10 p.m. – 7 a.m.	55 45
Commercial Zone	7 a.m. – 10 p.m. 10 p.m. – 7 a.m.	65 55
Manufacturing Industrial; Agricultural Zone	7 a.m. – 10 p.m. 10 p.m. – 7 a.m.	70 55

SOURCE: City of Palm Desert, 2008.

General Plan

Program 3.B of the City of Palm Desert's General Plan Noise Element indicates that the City shall restrict grading and construction activities that may impact residential neighborhoods and other sensitive land uses to specified days of the week and times of day, but does not specify the specific times or days that should be restricted (City of Palm Desert, 2004).

City of Indian Wells

Municipal Code

The maximum permissible exterior sound levels by receiving land use for the City of Indian Wells are presented in Table 4.11-9. Noise levels from construction and demolition equipment are exempt from the exterior noise limits. However, the Municipal Code does restrict the hours during which construction activities may occur to between 7 a.m. and 5 p.m. on weekdays and between 8 a.m. and 5 p.m. on Saturdays. Construction activities are not permitted on Sundays or holidays (City of Indian Wells, 2008).

TABLE 4.11-9
CITY OF INDIAN WELLS EXTERIOR NOISE LIMITS

Receiving Land Zone	Time Period	Noise Level (dBA)
Residential	7:01 a.m. – 10:00 p.m. 10:01 p.m. – 7:00 a.m.	55 50

SOURCE: City of Indian Wells, 2008.

General Plan

Policy IVB1.3 of the City of Indian Wells General Plan states that truck traffic shall be limited to specific routes and designated hours of travel, as defined by the City Planning and Engineering Departments. Furthermore, Policy IVB2.3 states that the City will enforce its noise ordinance, which specifies restrictions on construction noise and other short-term noise events (i.e. concerts, sporting events, etc.) and mitigation measures for development in noise-sensitive areas (City of Indian Wells, 1996).

4.11.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project impact would be considered significant if it would:

a) Expose people to or generate noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;

b) Expose people to or generate excessive groundborne vibration or groundborne noise levels;

c) Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d) Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or

e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels;

f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

For the purposes of this EIR, temporary impacts during construction are considered significant if they would substantially interfere with affected land uses. Substantial interference could result from a combination of factors including: the generation of noise levels substantially greater than existing ambient noise levels, construction efforts lasting long periods of time, or construction activities that would affect noise-sensitive uses during the nighttime.

The Proposed Project's long term operational impacts on the ambient noise environment would be considered substantial if it would expose sensitive receptors or other identified land uses to noise levels in excess of regulatory standards or codes. In addition to the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing ambient noise environment. If the ambient noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be exceeded, an impact may occur.

A numerical threshold to identify the point at which a vibration impact occurs has not been identified by local jurisdictions in the applicable standards or municipal codes. In the absence of local regulatory significance thresholds for vibration from construction equipment, it is

appropriate to use California Department of Transportation (Caltrans) identified PPV thresholds for human perception and risk of architectural damage to buildings, which are 0.010 inches per second and 0.20 inches per second, respectively (Caltrans, 2002).

4.11.3 Applicant Proposed Measures

SCE has committed to implementing the following applicant proposed measures (APMs) to reduce construction noise.

APM NOISE-1. Noise Ordinances. SCE would comply with all applicable noise ordinance construction schedules. In the event the construction must occur outside the allowable work hours, a variance would be obtained.

APM NOISE-2. Noise Control Equipment Maintenance. Maintain all noise-control equipment in good working order, in accordance with manufacturers' specifications.

APM NOISE-3. Handling of Noise Complaints. During construction, investigate, document, evaluate, and attempt to resolve legitimate project-related noise complaints. This would involve attempting to contact the source (person or persons) of the noise complaint within 24 hours; investigating to determine the project noise source(s) that led to the complaint; and taking all feasible measures to reduce the noise at the source, if the complaint is legitimate.

4.11.4 Impacts and Mitigation Measures

Equipment noise during project construction is the primary concern in evaluating short-term noise impacts. During operation, noise from corona discharge along high-voltage transmission lines during wet conditions and noise from operation of a new transformer at Mirage Substation would be the primary concern associated with long-term noise impacts.

Evaluation of potential noise impacts from construction and operation of the Proposed Project included reviewing relevant city and County noise standards and policies, characterizing the existing noise environment throughout the study area, and projecting noise from construction and operation of Proposed Project facilities. Impacts were assessed by comparing the published noise levels of construction equipment and operational activities to the ambient noise environment and significance criteria, based on applicable noise regulations.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Construction

Implementation of APM NOISE-1 would ensure that construction activities associated with the Proposed Project would not violate an applicable noise ordinance. No Impact would occur (No Impact).

Operation

Impact 4.11-1: Corona noise associated with the Proposed Project could exceed applicable noise standards. *Less than significant* (Class III)

The term corona is used to describe the breakdown of air into charged particles caused by the electrical field at the surface of a conductor. Audible noise levels generated by corona discharge vary depending on weather conditions as well as the voltage and condition of the line. Wet weather conditions often increase corona discharge due to accumulation of raindrops, fog, frost, or condensation on the conductor surface, which causes surface irregularities thereby promoting corona discharge. Corona noise that would be associated with the proposed subtransmission line and 220 kV loop-in have been estimated to be approximately 30 dBA at the edge of the ROWs during dry conditions (SCE, 2008). During adverse weather conditions such as fog or rain, corona discharges could be five to 20 dBA higher than in dry conditions. Therefore, under worst case conditions, corona noise could be as high as 50 dBA at the edge of the transmission line ROW.

The proposed Farrell-Garnet subtransmission line would replace an existing single circuit 115 kV line with a double circuit line. With the exception of the 0.8-mile segment north of the UPRR, the proposed Farrell-Garnet subtransmission line would be constructed entirely within existing SCE ROW. Because newer conductors typically have less surface imperfections than aging conductors, the conductors associated with the new circuit would likely result in lower corona noise levels than the existing circuit. The nearest sensitive receptors along the proposed alignment are approximately 150 feet to the west of the southern portion. Assuming a maximum noise level of 50 dBA at the edge of the ROW during wet weather conditions, which are extremely rare in the study area, and accounting for how noise levels attenuate over soft surfaces, maximum corona noise at the nearby residences would be up to approximately 38 dBA. Corona noise levels that would be associated with the proposed Farrell-Garnet subtransmission line would not conflict with City of Palm Springs exterior noise limits, which are as low as 40 dBA for nighttime hours at low density residential land uses. Impacts would be less than significant.

The proposed Mirage-Santa Rosa 115 kV subtransmission line would be located entirely within existing SCE ROW that currently contains an existing 115 kV subtransmission line; therefore, noise associated with subtransmission line operations is part of the existing ambient noise environment along the alignment. Noise levels measured near the existing ROW along Bell Road were approximately 41 dBA. Since newer conductors typically have less surface imperfections than aging conductors, the conductors associated with the new circuit would likely result in lower corona noise levels than the existing circuit. The nearest sensitive receptors along the proposed Mirage-Santa Rosa alignment are approximately 100 feet to the west of the alignment along Bell Road. Assuming a maximum noise level of 50 dBA at the edge of the ROW during wet weather conditions, which are extremely rare in the study area, and accounting for how noise levels attenuate over soft surfaces, maximum corona noise at the nearby residences would be up to approximately 42 dBA. Corona noise levels that would be associated with the proposed Mirage-Santa Rosa subtransmission line would not conflict with Riverside County exterior noise limits, which are as low as 45 dBA for nighttime hours at residential land uses. Impacts would be less than significant.

The proposed Mirage-Santa Rosa subtransmission line would also energize a currently idle 115 kV subtransmission line along Portola Avenue between I-10 and Gerald Ford Drive in the City of Palm Desert. There is a subdivision to the west of Gerald Ford Drive that may be exposed to corona noise levels associated with operation of this currently idle line. However, typical noise levels from subtransmission line operations would not be expected to conflict with the City of Palm Desert municipal code, which identifies a nighttime exterior noise limit of 45 dBA for residential uses. Noise levels under worst case conditions may be as high as 43 dBA at a distance of 100 feet from the edge of the ROW; as stated previously, these conditions would be very uncommon due to the dry desert climate of the study area. Impacts would be less than significant.

The proposed 220 kV loop-in would be located entirely within existing SCE ROW that currently contains an existing 220 and 115 kV transmission and subtransmission lines; therefore, noise associated with transmission line operations is part of the existing ambient noise environment along the alignment. Noise levels measured near the existing ROW along Vista de Oro were approximately 44 dBA. As mentioned above, maximum corona noise that would be associated with the proposed 220 kV loop-in has been estimated to be approximately 50 dBA at the edge of the transmission line ROW during worst-case conditions (SCE, 2008). Given the way noise attenuates across soft surfaces and assuming that the nearest residences would be located at least 50 to 75 feet from the edge of the transmission line ROW, noise levels at the maximum exposed receptors under worst case conditions would be approximately 43 dBA. However, given the dry desert climate of the project area, worst case noise levels would be rare, further reducing the potential for the proposed 220 kV loop-in to conflict with applicable noise standards. Therefore, it can be assumed that corona noise levels that would occur under the proposed 220 kV loop-in would not conflict with exterior noise level standards set by Riverside County. Impacts would be less than significant.

Mitigation: None required.

Impact 4.11-2: Transformer noise at Mirage Substation would increase noise levels in the vicinity, potentially conflicting with applicable noise standards. ***Less than Significant with Mitigation*** **(Class II)**

The proposed improvements at Mirage Substation include the installation of one 280 MVA, 220/115 kV transformer bank. Operation of the new transformer at the Mirage Substation would increase noise levels in the vicinity of the substation. Transformer noise is caused, in part, by a phenomenon called magnetostriction, which causes the transformer to be magnetically excited and vibrate, producing a “humming” type sound. High voltage transformers also contain cooling fans that generate noise. SCE has not provided information in the its PEA or subsequent responses to CPUC data requests relative to the expected noise levels that would be associated with the proposed transformer. However, SCE has recently submitted a PEA under a separate application for the Eldorado-Ivanpah 220 kV Transmission Project that included a noise level range estimate of 39 dBA to 64 dBA for a 120 MVA 220/115 kV transformer at 400 feet (SCE,

2009). Therefore, for the purposes of this analysis, it is assumed that the proposed transformer at Mirage Substation would generate a maximum noise level of 64 dBA at 400 feet.

The nearest residences to the Mirage Substation are located approximately 450 feet to the west of the substation with property lines as close as approximately 100 feet to the west of the substation. Assuming a maximum transformer noise of approximately 64 dBA at 400 feet, maximum noise levels at 100 feet and 450 feet would be up to 76 dBA and 63 dBA, respectively. These maximum noise levels would result in an apparent violation of Riverside County exterior noise standards for stationary sources at residential land uses, which are 45 dBA and 65 dBA L_{eq} during nighttime and daytime hours, respectively. Therefore, noise levels associated with the proposed new transformer at the Mirage Substation would be potentially significant at nearby residential uses. However, implementation of Mitigation Measure 4.11-2 would ensure that SCE designs the proposed modifications to Mirage Substation such that transformer noise levels would not exceed Riverside County's noise standards for stationary sources.

> **Mitigation Measure 4.11-2: Mirage Substation.** SCE shall ensure that noise levels associated with the Mirage Substation do not exceed the Riverside County noise standards for stationary sources. Noise control techniques may include, but not be limited to: locating the new transformer with as much setback from the existing residential properties as possible, use of noise walls or equivalent sound attenuation devices, and the use of a transformer with special noise control specifications designed in a way to specifically achieve acceptable regulatory noise standards.
>
> Prior to the installation of the new transformer, SCE shall submit to the CPUC and the County of Riverside, for review and approval, a plan that describes the specific measures that will be taken in order to comply with the County's stationary noise standards. Once the proposed transformer is operational, SCE shall retain an acoustical engineer to perform noise measurements in the vicinity of the residences west of Mirage Substation to verify that transformer noise levels comply with the County standards. Documentation of compliance shall be submitted to the CPUC and Riverside County. In the event the transformer noise levels violate the standards, additional noise control techniques shall be initiated to correct the violation.

Significance after Mitigation: Less than Significant.

Maintenance

Maintenance activities would temporarily increase noise levels in the immediate vicinity of the Proposed Project. However, since new transmission and subtransmission lines would be constructed within existing ROW where inspections already occur on an annual basis, these activities would represent an existing noise source. Periodic maintenance activities associated with new lines would occur infrequently and would not result in any long-term notable noise level increases. Therefore, inspection and maintenance activities would not conflict with applicable noise ordinances (No Impact).

b) Expose people to or generate excessive groundborne vibration or groundborne noise levels.

Impact 4.11-3: Construction activities could expose people and/or structures to substantial vibration levels. *Less than significant* (Class III)

The use of blasting and/or pile drivers would not be included as part of the Proposed Project. The Proposed Project would involve temporary sources of groundborne vibration and groundborne noise during construction from operation of heavy equipment. During Proposed Project construction, operation of heavy equipment would generate localized groundborne vibration and groundborne noise that could be perceptible at residences or other sensitive uses in the immediate vicinity of the construction corridor. Implementation of APM NOISE-1 would restrict construction activities to hours permitted by local ordinances, and would therefore limit construction activities to less sensitive daytime hours. Furthermore, the duration of impact at any one location along the corridors would be very brief (estimated to be from one to three days). Therefore, the impact from construction-related groundborne vibration and groundborne noise would be less than significant.

Mitigation: None required.

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c) Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact 4.11-4: Corona noise levels could permanently increase ambient noise levels in the vicinity of the proposed alignments. *Less than significant* (Class III)

As discussed under a), the Proposed Project would result in hissing or crackling noise associated with corona discharge along the conductors during wet weather conditions. Corona noise that would be associated with the proposed subtransmission lines and the proposed 220 kV loop-in have been estimated to be approximately 30 dBA at the edge of the line ROWs during dry conditions (SCE, 2008). During adverse weather conditions such as fog or rain, corona discharge could be five to 20 dBA higher than in dry conditions. In addition to the proposed new subtransmission lines, an existing idle 115 kV subtransmission line located between I-10 and the intersection of Gerald Ford Drive and Portola Avenue would become energized as part of the Proposed Project. There is a residential development located immediately west of this line. This would introduce a new noise source into the area and would expose receptors to noise levels similar to what would occur along the new subtransmission lines described above. The maximum corona noise that would occur during adverse weather conditions under the Proposed Project would result in noise levels of up to 42 dBA at the nearest sensitive receptors. Noise levels generated by the proposed subtransmission and transmission lines could result in a temporary increase to ambient noise levels, but in most cases the noise created from rain would exceed the corona noise. Therefore, because operation of the proposed subtransmission and transmission lines would not result in a permanent increase in ambient noise levels, impacts would be less than significant.

Mitigation: None required.

Impact 4.11-5: Transformer noise at Mirage Substation could permanently increase ambient noise levels in the vicinity of the substation. ***Less than Significant with Mitigation*** **(Class II)**

As discussed under a), the proposed improvements at Mirage Substation include the installation of one 280 MVA, 220/115 kV transformer bank. Operation of the new transformer at the Mirage Substation would increase noise levels in the vicinity of the substation. Based on a recent application and PEA filed by SCE (SCE, 2009), it is assumed that the proposed transformer at Mirage Substation would generate a maximum noise level of 64 dBA at 400 feet. Maximum noise levels at the nearest residential property lines and nearest residences would be up to 76 dBA and 63 dBA, respectively. These maximum noise levels would result in a substantial permanent increase in ambient noise levels. Therefore, noise levels associated with the proposed new transformer at the Mirage Substation would be potential significant at nearby residential uses. However, Mitigation Measure 4.11-2 requires that SCE design the proposed modifications to Mirage Substation such that transformer noise levels would not exceed Riverside County's noise standards for stationary sources at residential uses, which is 45 dBA for nighttime hours. Implementation of this mitigation measure would ensure that permanent increases in ambient noise levels would not be substantial and that impacts would be mitigated to less than significant.

Mitigation Measure: Implement Mitigation Measure 4.11-2.

Significance after Mitigation: Less than Significant.

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d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact 4.11-6: Adverse noise levels would be generated during project construction. ***Less than Significant with Mitigation*** **(Class II)**

Construction of the Proposed Project would result in temporary increases in noise levels due to the development of the proposed subtransmission lines, 220 kV loop-in, 115 kV reconfigurations, modifications to ten substations, and installation of communication lines. Construction activities would require a variety of heavy equipment that would generate varying noise levels depending on the particular type of construction equipment. Typical noise levels at 50 feet from the source for some of the heavy pieces of construction equipment that would be required to construct the Proposed Project are listed in Table 4.11-10.

Onsite construction activities (i.e., construction activities within the proposed alignments, staging areas, and substations) would create both intermittent and continuous noises. Examples of intermittent construction noise sources would be from passing off-road equipment (e.g., dozers,

TABLE 4.11-10
TYPICAL MAXIMUM NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{eq} at 50 feet)
Line Truck	88
Backhoe	80
Flatbed Truck	88
Drill Rig	98
Air Compressor	81
Dozer	85
Air Compressor	85
Mobile Crane	83
Grader	85
Front End Loader	85
Water Trucks	88
Cranes	83
Concrete Trucks	88

SOURCE: FTA, 2006.

backhoes, water trucks), loading operations, and from grading and drilling activities. Continuous noise sources would include sustained idling of equipment and/or the operation of pumps and generators at constant rates. Given the noise levels identified in Table 4.11-10, maximum onsite noise levels would vary from approximately 80 dBA at 50 feet, up to approximately 98 dBA at 50 feet during pole and tower foundation drilling activities. These levels would be equivalent to approximately 73 dBA and 91 dBA at 100 feet, respectively, and between 65 dBA and 83 dBA at 200 feet, respectively.

Construction would also cause off-site noise, primarily from commuting workers and from trucks needed to bring materials to the construction sites. In addition, a helicopter would be needed to help string the conductors on the new 220 kV towers. Equipment staging would occur at SCE's existing substations. From these points, some workers would drive or ride in construction vehicles to work areas along the subtransmission and transmission line alignments. Trucks would haul poles, conductor line, and other materials to the various construction sites and would also haul away demolished electrical equipment and excavated material and waste. The peak noise levels associated with passing trucks and commuting worker vehicles would be approximately 75 dBA at 50 feet.

As shown in Table 4.11-10, intermittent and continuous use of construction equipment would generate noise levels in excess of 85 dBA at 50 feet. However, the duration of noise impacts would be relatively brief, estimated to be approximately one to three days at any one location along the proposed construction alignments. Although construction activities at the substation sites would occur over periods lasting from 16 days (e.g., Garnet Substation) to eight months (Mirage

Substation), operation of most of the heavy construction equipment listed in Table 4.11-10 would occur mostly during ground disturbance activities, which would likely occur over periods that would be less than one week.

Given the relatively short duration of impacts at any one location, construction noise would not be considered significant at affected residences if the residents are given advance notice and if construction is limited to daytime hours. APM NOISE-1 would help reduced potential impacts to residents by requiring that SCE comply with local construction noise regulations. Also, APMs NOISE-2 and NOISE-3 would help reduce impacts by requiring appropriate noise-control devices on construction equipment and by addressing residential noise complaints. However, implementation of Mitigation Measures 4.11-6a and 4.11-6b would be required to ensure that the impact of construction noise would be less than significant.

Mitigation Measure 4.11-6a: To strengthen the intent of APM NOISE-2 and APM NOISE-3, the following noise reduction and suppression techniques shall be employed during project construction to minimize the impact of temporary construction-related noise on nearby sensitive receptors:

- Comply with manufacturers' muffler requirements.
- Notify residences in advance of the construction schedule and how many days they may be affected. Provide a phone number for a construction supervisor who would handle construction noise questions and complaints.
- Minimize idling of engines; turn off engines when not in use, where applicable.
- Shield compressors and other small stationary equipment with portable barriers when within 100 feet of residences.
- Route truck traffic away from noise-sensitive areas where feasible.

Mitigation Measure 4.11-6b: In the event that nighttime (i.e., between 7:00 p.m. and 7:00 a.m.) construction activity is determined to be necessary; a nighttime noise reduction plan shall be developed by SCE and submitted to the CPUC for review and approval. The noise reduction plan shall include a set of site-specific noise attenuation measures that apply state of the art noise reduction technology to ensure that nighttime construction noise levels and associated nuisance are reduced to the most extent feasible.

The attenuation measures may include, but not be limited to, the control strategies and methods for implementation that are listed below. If any of the following strategies are determined by SCE to not be feasible, an explanation as to why the specific strategy is not feasible shall be included in the nighttime noise reduction plan.

- Plan construction activities to minimize the amount of nighttime construction.
- Offer temporary relocation of residents within 200 feet of nighttime construction areas.

- Temporary noise barriers, such as shields and blankets, shall be installed immediately adjacent to all nighttime stationary noise sources (e.g., drilling rigs, generators, pumps, etc.).

- Install temporary noise walls that block the line of sight between nighttime activities and the closest residences.

Significance after Mitigation: Less than Significant.

Impact 4.11-7: Inspection and maintenance activities associated with project operations could cause periodic increases in ambient noise levels that could negatively affect nearby receptors. *Less than significant* (Class III)

As discussed above, maintenance activities associated with the Proposed Project would require use of a light duty truck and/or a helicopter to inspect new subtransmission and transmission lines and access/spur roads. However, since the new subtransmission and transmission lines would be constructed within existing ROW, with the exception of the 0.8-mile segment of new SCE ROW under the proposed Farrell-Garnet subtransmission line, such inspections already occur on an annual basis and thus represent existing noise sources. Periodic maintenance activities associated with new lines would occur infrequently and would not be expected to expose sensitive receptors to excessive noise levels. Impacts would be less than significant.

Mitigation: None required.

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e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels.

The Proposed Project would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Therefore, there would be no impacts associated with this criterion (No Impact).

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f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

The Proposed Project is not located within the vicinity of a private airstrip. Therefore, there would be no impacts associated with this criterion (No Impact).

4.11.5 Cumulative Impacts

Noise levels tend to lessen quickly with distance from a source; therefore, the geographic scope for cumulative impacts associated with noise would be limited to projects that are in the immediate vicinity of the Proposed Project.

Equipment used during construction activities would temporarily increase short-term noise levels in the study area. Construction of the Proposed Project, in conjunction with the other projects listed in Section 3.6, *Cumulative Projects*, would have the potential to contribute to a cumulative noise impact because construction of the cumulative projects may occur in the immediate area at the same time as the Proposed Project. For example, the Casa Verona residential subdivision project, located approximately 0.3 mile from the proposed Farrell-Garnet alignment, has been approved by the Palm Springs City Council. Therefore, construction of this project could potentially overlap with construction of the proposed Farrell-Garnet line. Also, the Ponderosa Homes II project, which includes the construction of 237 single family homes, is currently being constructed within 0.2 mile of the proposed 115 kV reconfiguration site at Portola Avenue and Gerald Ford Drive. If construction of this project continues into 2010, it may overlap with construction of the Proposed Project, thus exposing nearby sensitive receptors to cumulatively considerable noise increases.

Although construction of the Proposed Project may occur simultaneously with the various other cumulative projects, implementation of APMs NOISE-1 through NOISE-3 identified in Section 4.11.3 and Mitigation Measures 4.11-6a and 4.11-6b identified in Section 4.11.4 would ensure that the Proposed Project's construction-related noise impacts would be less than cumulatively considerable (i.e., because the Proposed Project would mitigate its contribution to the cumulative impact). As a result, cumulative noise impacts would be mitigated to less than significant (Class II).

Operations of the Proposed Project, in conjunction with the operations of other projects listed in Section 3.6, would have the potential to contribute to a long-term cumulative noise impact because operations of at least one of the cumulative projects would occur in the immediate vicinity of the Proposed Project. SCE plans to construct a new distribution substation in 2011 within the Mirage Substation property that would have one 28 MVA transformer, two 12 kV circuits, and capacitors. However, operations of the distribution voltage transformer and other equipment would result in minor noise levels that would be considerably less than the current ambient levels at Mirage Substation. In addition, impacts associated with the proposed modifications to Mirage Substation would be mitigated to less than significant with implementation of Mitigation Measure 4.11-2. Therefore, noise levels associated with the proposed new transformer would not be cumulatively considerable (Class II).

Corona discharge would not substantially increase ambient noise levels and would therefore not result in a cumulatively considerable contribution to noise impacts. Moreover, maintenance activities would include infrequent inspection of the lines and would also not result in a cumulatively considerable contribution to noise impacts. Therefore, operations and maintenance

of the Proposed Project would not be cumulatively considerable. Cumulative impacts would be mitigated to less than significant (Class II).

4.11.6 Alternatives

No Project Alternative

For the purposes of this analysis, the No Project Alternative includes the following two assumptions: 1) the project would not be implemented and the existing conditions in the study area would not be changed; and 2) new subtransmission and transmission lines and/or additional power generation would be constructed in or near the study area to supply power to the Electrical Needs Area. Given the highly speculative nature of the No Project Alternative assumptions, this analysis is qualitative.

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this EIR would be constructed by SCE. However, SCE would be required to design a new project in order to satisfy the objectives of the Proposed Project. Depending on the location of this project, noise from construction could result in noise impacts at sensitive receptors within the study area. Construction noise would likely be similar to that associated with the Proposed Project, and would most likely be mitigable to less than significant through implementation such as APMs NOISE-1 through NOISE-3 and Mitigation Measures 4.11-6a and 4.11-6b.

If blasting or pile driving would be required during construction of a project under the No Project Alternative scenario, impacts from groundborne vibration would have the potential to result in damage to nearby structures or may impact nearby receptors. While it is unlikely that such activities would be required, impacts would be potentially significant.

If the No Project Alternative would include a new source of power generation or new high voltage transmission lines in areas near a large number of sensitive receptors, operational noise impacts may be higher than the Proposed Project. While it is unlikely that the No Project Alternative would introduce a noise source that would permanently increase ambient noise levels in the study area, impacts would be potentially significant and may require mitigation depending on the infrastructure included under the No Project Alternative.

Alternative 2

Alternative 2 would include the construction of approximately six miles of new single-circuit 115 kV subtransmission line, approximately three miles of which would be placed underground. The Alternative 2 subtransmission line would pass by existing residences located along Vista Chino and Sunrise Way. Therefore, there would be an increased chance of noise and vibration impacts from construction of the alternative subtransmission line. These impacts would be short-

term and intermittent in nature; implementation of APMs NOISE-1 through NOISE-3 and Mitigation Measures 4.11-6a and 4.11-6b would reduce these impacts to less than significant (Class II).

No blasting and/or pile drivers would be used during construction of the Alternative 2 subtransmission line. Therefore, as with the proposed Farrell-Garnet subtransmission line, the only sources of groundborne vibration and noise from construction of the Alternative 2 subtransmission line would result from the use of heavy duty construction equipment. While the Alternative 2 subtransmission line would pass by additional sensitive receptors not included in the analysis of the proposed Farrell-Garnet subtransmission line, it is anticipated that impacts would still be less than significant during construction because activities would be brief and intermittent and would only occur during daytime hours (Class III).

Placing the subtransmission line underground would eliminate potential noise impacts from corona discharge. Since the majority of the subtransmission line located in close proximity to residential receptors would be located underground, impacts from corona discharge would be expected to be slightly less than those that would be associated with the proposed Farrell-Garnet subtransmission line. Long-term noise would be associated with maintenance and inspection activities similar to those that would be associated with the proposed Farrell-Garnet subtransmission line. Therefore, long-term operational noise impacts associated with the Alternative 2 subtransmission line would be less than significant (Class III).

As with the proposed Farrell-Garnet subtransmission line, the Alternative 2 subtransmission line would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Therefore, there would be no impacts associated with aircraft noise (No Impact).

Alternative 3

Alternative 3 would include the construction of approximately 6.5 miles of new single-circuit 115 kV subtransmission line, approximately 3.6 miles of which would be placed underground. The Alternative 3 subtransmission line would pass by existing residences located along Vista Chino, Sunrise Way, San Rafael Road, and Indian Canyon Drive. Therefore, there would be an increased chance of noise and vibration impacts from construction of the Alternative 3 subtransmission line. These impacts would be short-term and intermittent in nature; therefore implementation of the APMs NOISE-1 through NOISE-3 and Mitigation Measures 4.11-6a and 4.11-6b would reduce these impacts to less than significant (Class II).

No blasting and/or pile drivers would be used during construction of the Alternative 3 subtransmission line. Therefore, as with the proposed Farrell-Garnet subtransmission line, the only sources of groundborne vibration and noise from construction of this alternative would result from the use of heavy duty construction equipment. While the Alternative 3 subtransmission line would pass by additional sensitive receptors not included in the analysis of the proposed Farrell-

Garnet subtransmission line, it is anticipated that impacts would still be less than significant during construction as activities would be brief and intermittent and would only occur during daytime hours (Class III).

Placing the subtransmission line underground would eliminate potential noise impacts from corona discharge. The majority of the subtransmission line located in close proximity to residential receptors would be located underground; however, at Indian Canyon Drive the line would transition to overhead. There are a number of receptors located along the first 0.5 mile of the overhead portion of the Alternative 3 subtransmission line that would have the potential to be exposed to noise associated with corona discharge. However, as with the proposed Farrell-Garnet subtransmission line, noise associated with corona would not be expected to substantially increase ambient noise levels or expose sensitive receptors to substantial noise levels. Maintenance and inspection activities would be similar to those that would be associated with the proposed Farrell-Garnet subtransmission line and would not be expected to result in substantial noise level increases. Therefore, long-term operational noise impacts associated with the Alternative 3 subtransmission line would be less than significant (Class III).

As with the proposed Farrell-Garnet subtransmission line, the Alternative 3 subtransmission line would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Therefore, there would be no impacts associated with aircraft noise (No Impact).

Alternative 5

Alternative 5 would include the installation of approximately three miles of underground subtransmission line and approximately 500 feet of overhead single-circuit subtransmission line. The Alternative 5 subtransmission line would pass by a greater number of existing residential units than the proposed Mirage-Santa Rosa subtransmission line, and would therefore have a greater chance of exposing sensitive receptors to increased noise levels and vibration during construction activities. Furthermore, by placing the subtransmission line underground, construction activities would be much more intense; therefore, impacts from noise and vibration would be higher. However, implementation of the APMs NOISE-1 through NOISE-3 and Mitigation Measure 4.11-6a and 4.11-6b would reduce impacts from construction of the Alternative 5 subtransmission line to less than significant (Class II).

As with construction noise, groundborne vibration associated with construction of the Alternative 5 subtransmission line would result in greater impacts to nearby residents than the proposed Mirage-Santa Rosa subtransmission line. However, these impacts are still expected to be localized and intermittent; therefore, impacts from groundborne vibration and noise during construction of the Alternative 5 subtransmission line would be less than significant (Class III).

The Alternative 5 subtransmission line would not include any additional sources of noises from long-term operations not included as part of the proposed Mirage-Santa Rosa subtransmission

line. Placing the subtransmission line underground would eliminate potential noise impacts from corona discharge. Long-term noise would be associated with maintenance and inspection activities similar to those that would be associated with the Proposed Project. Therefore, long-term operational noise impacts associated with the Alternative 5 subtransmission line would be less than significant (Class III).

As with the proposed Mirage-Santa Rosa subtransmission line, the Alternative 5 subtransmission line would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Therefore, there would be no impacts associated with aircraft noise (No Impact).

Alternative 6

Alternative 6 would include the construction of approximately 4.2 miles of new single-circuit 115 kV subtransmission line, approximately one mile of which would be placed underground. The Alternative 6 subtransmission line would pass by existing residences located along Vista Chino. Therefore, there would be an increased chance of noise and vibration impacts from construction of the Alternative 6 subtransmission line. These impacts would be short-term and intermittent in nature; therefore implementation of the APMs NOISE-1 through NOISE-3 and Mitigation Measures 4.11-6a and 4.11-6b would reduce these impacts to less than significant (Class II).

No blasting and/or pile drivers would be used during construction of the Alternative 6 subtransmission line. Therefore, as with the Proposed Project, the only sources of groundborne vibration and noise from construction of the Alternative 6 subtransmission line would result from the use of heavy duty construction equipment. While the Alternative 6 subtransmission line would pass by additional sensitive receptors not included in the analysis of the Proposed Project, it is anticipated that impacts would still be less than significant during construction as activities would be brief and intermittent and would only occur during daytime hours (Class III).

Placing the subtransmission line underground would eliminate potential noise impacts from corona discharge. One mile of the subtransmission line located in close proximity to residential receptors would be located underground; however, the portion along Vista Chino west of Landau Boulevard would be placed overhead. There are a number of receptors located along this stretch that would have the potential to be exposed to noise associated with corona discharge. However, as with the proposed Farrell-Garnet subtransmission line, noise associated with corona would not be expected to substantially increase ambient noise levels or expose sensitive receptors to substantial noise levels. Maintenance and inspection activities would be similar to those that would be associated with the proposed Farrell-Garnet subtransmission line and would not be expected to result in substantial noise level increases. Therefore, long-term operational noise impacts associated with the Alternative 6 subtransmission line would be less than significant (Class III).

As with the proposed Farrell-Garnet subtransmission line, the Alternative 6 subtransmission line would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Therefore, there would be no impacts associated with aircraft noise (No Impact).

Alternative 7

Alternative 7 would include the construction of approximately 9.1 miles of new single-circuit 115 kV subtransmission line. The Alternative 7 subtransmission line would pass by existing residents and sensitive receptors located along Vista Chino, Landau Boulevard, 33rd Avenue, and Date Palm Drive. Therefore, there would be an increased chance of noise and vibration impacts from construction of the Alternative 7 subtransmission line. These impacts would be short-term and intermittent in nature; implementation of the APMs NOISE-1 through NOISE-3 and Mitigation Measures 4.11-6a and 4.11-6b would reduce these impacts to less than significant (Class II).

No blasting and/or pile drivers would be used during construction of the Alternative 7 subtransmission line. Therefore, as with the proposed Farrell-Garnet subtransmission line, the only sources of groundborne vibration and noise from construction of the Alternative 7 subtransmission line would result from the use of heavy duty construction equipment. While the Alternative 7 subtransmission line would pass by additional sensitive receptors not included in the analysis of the proposed Farrell-Garnet subtransmission line, it is anticipated that impacts would still be less than significant during construction as activities would be brief and intermittent and would only occur during daytime hours (Class III).

A large portion of the Alternative 7 subtransmission line would be placed directly adjacent to residential receptors and would therefore have the potential to expose a substantial number of people to noise associated with corona discharge. However, as with the proposed Farrell-Garnet subtransmission line, noise associated with corona would not be expected to substantially increase ambient noise levels or expose sensitive receptors to substantial noise levels. Furthermore, the Alternative 7 subtransmission line would be constructed within existing SCE 115 kV subtransmission line ROW. Therefore, noise from subtransmission line operations would be considered part of the background noise levels. Maintenance and inspection activities would be similar to those that would be associated with the proposed Farrell-Garnet subtransmission line and would not be expected to result in substantial noise level increases. Therefore, long-term operational noise impacts associated with the Alternative 7 subtransmission line would be less than significant (Class III).

As with the proposed Farrell-Garnet subtransmission line, the Alternative 7 subtransmission line would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Therefore, there would be no impacts associated with aircraft noise (No Impact).

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