# Section 3.11

# 3.11 NOISE

This section describes existing conditions and the potential noise impacts associated with the construction and operation of the Proposed Project and alternatives.

## 3.11. Existing Conditions

### 3.11.1.1 El Casco Substation Site

The proposed El Casco Substation site is located within the boundaries of the Norton Younglove Reserve. Train traffic on the Union Pacific railroad line dominates the overall ambient noise environment in the area of the proposed El Casco Substation site, with the typical noisy train pass-bys punctuating the relatively quiet levels of non-train background noise. Other noise sources include traffic on San Timoteo Canyon Road, aircraft flying overhead, rustling brush and leaves, and birds chirping. Figure 3.11-1 shows the locations of the Union Pacific Railroad line and San Timoteo Canyon Road.

### 3.11.1.2 Banning Substation

The Banning Substation is located within the Banning city limits approximately 726 feet south of Interstate 10, and approximately 548 feet south of the freight railroad. Adjacent land uses are commercial and industrial. The predominant sources of noise in this area are freight railroad operations, vehicular traffic on Interstate 10, and vehicular traffic on adjacent surface streets. Aircraft operations associated with the Banning Municipal Airport, located approximately 4,072 feet to the east of the substation, generate intermittent noise level increases from aircraft takeoffs and landings.

### 3.11.1.3 Zanja Substation

The Zanja Substation is located in the northwestern area of the City of Yucaipa. The area surrounding the substation is generally rural, though a small neighborhood of single-family homes are located adjacent to the site. The nearest two homes are located approximately 600 feet to the east. The area is fairly quiet with low traffic flow through the neighborhood and to San Bernardino National Forest.

### 3.11.1.4 Mill Creek Communications Site

The Mill Creek Communications Site is located in a small canyon in the San Bernardino National Forest to the north of the City of Yucaipa. The nearest home is located approximately 0.5 miles away to the east. Noise levels within the area are generally quiet over the large uninhabited areas. Noisy areas would be localized during periods of recreational activities.

### 3.11.1.5 Southerly 115 kV Subtransmission Line Route

The southerly 115 kV subtransmission line would be routed through the Cities of Banning, Beaumont, and unincorporated portions of Riverside County. In general, the proposed 115 kV line route would pass through uninhabited areas with relatively low ambient noise levels. However in some areas, the proposed 115 kV line route would pass adjacent to residential neighborhoods. Table 3.11-1, Noise Sensitive Receptors – Proposed 115 kV Route, identifies noise sensitive receptors that are within approximately 0.25 miles (1,320 feet) and their approximate location.

**TABLE 3.11-1**
**NOISE SENSITIVE RECEPTORS – PROPOSED 115 kV ROUTE**

| Noise Sensitive Receptor | Location |
|---|---|
| Isolated residential homes | Vicinity of the Maraschino Substation (City of Beaumont) |
| Isolated residential homes | Near Manzanita Park Road (County of Riverside) |
| Residential neighborhoods | Between Hyland Springs Avenue and Highland Home Road (City of Banning) |
| Isolated residential homes | South of the existing Banning Substation (City of Banning) |

Some portions of the route are interspersed with residential and commercial developments. There are residential developments that are planned for construction, are currently under construction, and/or are recently inhabited. Most of the construction is geared towards single-family homes. Two planned nonresidential projects include a commercial park near Maraschino Substation and the widening of San Timoteo Canyon Road (adjacent to the Preferred Site). Detailed information regarding land use designations along the southerly route is included in Section 3.9, Land Use and Planning. Noise impacts are discussed further in Section 5, Mandatory Findings of Significance, subsection 5.5 Cumulative Impacts.

### 3.11.1.6 Fiber Optic System

The proposed fiber optic system would consist of approximately 55 miles of fiber optic cable to be installed both overhead on existing poles or towers and underground in existing conduits and substructures from the El Casco Substation to Maraschino, Banning, Zanja, Mentone, Crafton Hills, and San Bernardino Substations. The route of the proposed fiber optic system would pass through a mixture of residential, commercial, industrial, and open space land uses. The existing ambient noise levels along the line vary from relatively low to levels comparable with those found near the proposed El Casco Substation site.

## 3.11.2 Significance Criteria

Impacts to noise are considered potentially significant if the project would:

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

### 3.11.2.1 Applicable Noise Ordinances

**3.11.2.1.1 County of Riverside.** The noise ordinance for Riverside County prohibits construction within one-quarter of a mile of an occupied residence unless it occurs between the hours of 6:00 a.m. and 6:00 p.m. (June through September) or between the hours of 7:00 a.m. and 6:00 p.m. (October through May). Exceptions to these standards are only allowed with the written consent of the building official (Ordinance No. 725, Chapter 1.16 of the Riverside County Code).

**3.11.2.1.2 City of Banning.** The City of Banning restricts noise affecting residential uses such that during any 15-minute period, daytime noise levels shall not exceed 60 dBA, and nighttime levels shall not exceed 50 dBA (City Ordinance #1138; Sec. 11D-05. Base ambient noise level). Exterior noise levels are not allowed to exceed 75 dBA at any time (City Ordinance #1138; Sec. 11D-08. Maximum nonresidential noise levels). Loud, unusual, and unnecessary noises are also prohibited, including equipment causing noise increases of more than 5 dBA over the ambient and back-up beepers that exceed 75 dBA.

The City of Banning allows construction activities to exceed noise ordinance limits between the hours of 7:00 a.m. and 6:00 p.m. provided that these activities do not at any time exceed 55 dBA for an interval of more than 15 minutes when measured in the interior of the nearest residence or school (Sec. 11D-09. Noises prohibited; unnecessary noise standard). The City Building Inspector may permit construction outside of these daytime hours if the official determines that public health and safety would not be impaired by the construction noise.

**3.11.2.1.3 City of Beaumont.** The City of Beaumont has adopted a noise ordinance, which is included within the Municipal Code. This ordinance limits activities occurring for any two-hour period that would affect residential land uses to a maximum daytime noise level of 70 dBA and a maximum nighttime noise level of 60 dBA. However, the ordinance allows construction activities to exceed these limits on weekdays between the hours of 7:00 a.m. and 6:00 p.m. (Section 9.02.070). The City Manager may elect to permit construction outside of these daytime hours if public health and safety would be protected.

**3.11.2.1.4 City of Yucaipa.** The noise ordinance for the City of Yucaipa contains maximum 24-hour noise level thresholds based on the affected land use (receiving noise) (Section 87.09.05). For example, noise affecting residential land uses is not allowed to exceed 55 dB(A) over a 24-hour period. Minor deviations from this threshold are allowed based on shorter durations of noise (i.e. less than 30 minutes). Noise generated by temporary construction activities is exempt from these thresholds provided it occurs between the hours of 7 a.m. and 7 p.m. (not including Sundays and holidays). Emergency work by public utilities is exempt from this prohibition.

**3.11.2.1.5 County of San Bernardino.** The County of San Bernardino has developed noise level limits in its Noise Ordinance (Municipal Code Section 87.0901). The ordinance defines noise sensitive land uses include residential uses, schools, hospitals, nursing homes, churches, and libraries.

The ordinance states that residential, commercial and industrial land uses shall not create, or be subjected to noise levels greater than: 55 dB(A) $L_{eq}$ from 7 am to 10 pm, and 45 dB(A) $L_{dn}$ from 10 pm to 7 am for residential, 60 dB(A) $L_{eq}$ at all times for commercial, and 70 dB(A) $L_{eq}$ at all times for Industrial. Any source that exceeds the standards for a period of 30 minutes or more shall be in violation of the noise ordinance.

The ordinance also establishes standards for maximum vibration levels: The ordinance states that no ground vibration shall be allowed which can be felt without the aid of instruments at or beyond the lot line, nor will any vibration be permitted which produces a particle velocity greater than or equal to 0.2 inches per second measured at or beyond the lot line.

Exempt noise and vibration sources include temporary construction, repair, or demolition activities which shall occur between 7:00 am and 7:00 pm except Sundays and Federal Holidays.

**3.11.2.1.6 City of Calimesa.** The City of Calimesa has developed noise level limits in its Noise Ordinance (Municipal Code Section 4.2.04). The ordinance states that single and low-density residential zones shall not be subjected to noise levels greater than 50 dBA $L_{dn}$ and other residential uses shall not be subject to noise levels greater than 55 dBA $L_{dn}$. It also specifically states that electrical transmission lines are subject to these limits at or beyond six feet from the utility easement. The most stringent nighttime limit applicable to the project is

between 10 p.m. to 7 a.m. in single family and low-density residential zones where ambient noise levels must be below 40 dBA or 50 dBA $L_{dn}$.

The Calimesa Municipal Code (Section 4.2.08) includes exemptions from these limits for noise generated by construction activities, provided that the activities occur between 7:00 a.m. and 7:00 p.m. on weekdays or between 10:00 a.m. and 5:00 p.m. on weekends or holidays. No construction equipment is allowed to cause noise in excess of 75 dBA for more than eight hours during any 24-hour period when measured at a residential property line, and intermittent construction noise over 90 dBA during any 15-minute period is also prohibited.

**3.11.2.1.7 City of Redlands.** The City of Redlands has developed noise level limits in its Noise Ordinance (Municipal Code Chapter 8.06). The ordinance states that single- and multi-family residential districts shall not be subjected to exterior noise levels greater than 50 dBA between the hours of 10:00 p.m. and 7:00 a.m., and 60 dBA between the hours of 7:00 a.m. and 10:00 p.m. The ordinance also limits interior noise levels in residential districts to no more than 45 dBA anytime day or night. Commercial districts are limited to exterior noise levels of 60 dBA between the hours of 10:00 p.m. and 7:00 a.m., and 65 dBA between the hours of 7:00 a.m. and 10:00 p.m., while the maximum noise level in industrial districts is 75 dBA any time.

The City of Redlands Noise Ordinance also prohibits the operation of any device that creates a vibration that is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property, or at one hundred fifty (150) feet from the noise source if on a public space or public right of way.

The City of Redlands Municipal Code includes exemptions from these limits for noise generated by construction activities, provided that the activities occur between 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays. All motorized equipment used in such activity must be equipped with functioning mufflers. No construction activities are allowed to take place at any time on Sundays or federal holidays. Also, the Noise Ordinance prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 6:00 p.m. and 7:00 a.m., including Saturdays, such that the sound generated creates a noise disturbance across a residential or commercial real property line.

### 3.11.2.2 Explanation of Noise and Vibration

**3.11.2.2.1 Noise.** Noise is generally defined as unwanted or objectionable sound. Airborne sound can be described as a rapid fluctuation of air pressure above and below the atmospheric pressure. Most sounds that humans hear in the environment consist of a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a filter that reflects the fact that human hearing is less sensitive at low and extreme high

frequencies compared to mid-range frequencies. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (dBA).

Expressed on a logarithmic (power of 10) scale the units are depicted as dBA using a frequency-weighted pattern that duplicates the sensitivity of the human ear. A noise of 70 dBA is approximately twice as loud as a noise of 60 dBA and four times as loud as a noise of 50 dBA. Table 3-11.2 defines acoustical terms used in this PEA.

Since noise levels from various sources vary over time, they are frequently expressed as an equivalent noise level ($L_{eq}$), which is a computed steady noise level that represents the same energy transmission over a specified time. $L_{eq}$ values are commonly expressed for one-hour periods, but different averaging times may be specified.

For the evaluation of environmental or community noise effects, it is customary to define a 24-hour-long noise level based on hourly $L_{eq}$ values, and to apply an excess or "penalty" noise during the nighttime hours to account for the added nuisance during those periods, and to adjust for lower average ambient levels during that period. Depending on the exact penalty scheme, the resulting noise descriptor is either a Community Noise Equivalent Level (CNEL) or a Day-Night Average Noise Level ($L_{dn}$). The two ways of expressing such noise levels are nearly equivalent, and are often used interchangeably.

**TABLE 3.11-2**
**DEFINITION OF ACOUSTICAL TERMS USED IN THIS PEA**

| Terms | Definitions |
|---|---|
| Decibel, dB | A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20. |
| A-Weighted Sound Level, dBA | The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. |
| Equivalent Noise Level, Leq | The average A-weighted noise level during the measurement period. The hourly Leq used for this report is denoted as dBA Leq [h]. |
| Community Noise Equivalent Level, CNEL | The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels in the night between 10:00 pm and 7:00 am. |
| Day/Night Noise Level, Ldn | The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am. |
| L01, L10, L50, L90 | The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period. |
| Ambient Noise Level | The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location. |

**3.11.2.2.2 Vibration.** Vibrating objects in contact with the ground radiate energy through the ground. Large and/or powerful vibrating objects can be perceptible by humans and animals. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and in the U.S. is referenced as vibration decibels (VdB) (Caltrans 1998).

The background vibration velocity level in residential and educational areas is usually approximately 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, and 100 VdB, which is the general threshold where minor damage can occur in fragile buildings (Caltrans 1998).

## 3.11.3 Proposed Project Impacts

### 3.11.3.1 Construction Impacts

**3.11.3.1 El Casco Substation.** An ambient noise study was conducted on September 27 and September 28, 2006. During this period, two attended short-term (15 minutes) noise measurements (ST) were taken on and near the site. Two long-term unattended noise measurements were taken at the gated entrance road to the farm (located to the north of the Substation site) (LT-1) and at the approximate location of the future homes to the northeast of San Timoteo Canyon Road (LT-2). See Figure 3.11-1 for the locations of the short-term and long-term noise measurement locations.

The locations of measurements were primarily based on highest anticipated noise levels due to the project. However, exterior areas of frequent human use were also considered. Since it is not practical or cost-effective to measure every noise-sensitive use, additional receptor locations were computer modeled. The short-term measurements were each 15 minutes in duration. For the long-term measurements, contiguous 15-minute samples were recorded for 25 hours at each site.

Meteorological data was measured in conjunction with the noise measurements. Using handheld instruments, field personnel made objective measurements and subjective observations of weather conditions (temperature, relative humidity, wind speed and direction and cloud cover). This information was recorded on data sheets during the measurement periods at each location.

Table 3.11-3 shows the results of the short-term measurements on and near the project site. Train traffic on the Union Pacific Railroad line dominated the overall ambient noise environment in the project area, with the typical noisy train pass-bys punctuating the relatively quiet levels of non-train background noise. Short-term noise measurement levels were 66 dBA $L_{eq}$ at ST-1 and 44 dBA $L_{eq}$ at ST-2. Other sources during the attended short-term measurements included traffic on San Timoteo Canyon Road, aircraft flying overhead, rustling brush and leaves, and birds chirping.

**TABLE 3.11-3**
**SHORT-TERM NOISE MEASUREMENT DATA**

| Measurement | | Measurement Period | | | | Measurement Results, dBA | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Location | Date (2003) | Start Time (hhmm, 24-hr) | Duration (minutes) | Noise Sources | $L_{eq}$ | $L_{max}$ | $L_{min}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ |
| ST-1 | Northerly of the project site along dirt access path in San Timoteo Canyon | 9/28/06 | 1302 | 15 | Train along the Union Pacific Railroad, rustling leaves, distant traffic, distant aircraft, birds. | 66.4 | 86.7 | 27.4 | 30.9 | 37.9 | 67.4 |
| ST-2 | On the proposed project site in San Timoteo Canyon | 9/28/06 | 1327 | 15 | Train along the Union Pacific Railroad, rustling leaves, distant traffic, distant aircraft. | 43.8 | 58.9 | 25.2 | 27.9 | 33.9 | 49.4 |

Table 3.11-4, Long Term Hourly Leq, identifies the hourly $L_{eq}$ recorded at both long-term sites. The lowest hourly noise level recorded during the long-term noise measurements was 46 dBA $L_{eq}$ at LT-1, during the 1200–1300 hour on September 27, 2006. The highest hourly noise level recorded during the long-term noise measurements was 73 dBA Leq at LT-1 during the 1300-1400 hour on September 28, 2006.

## TABLE 3.11-4
## LONG TERM HOURLY $L_{EQ}$

| LT-1 Hourly $L_{eq}$ | | | LT-2 Hourly $L_{eq}$ | |
|---|---|---|---|---|
| Time | $L_{eq}$ | | Time | $L_{eq}$ |
| 12:00 | 46 | | 12:00 | 51 |
| 13:00 | 66 | | 13:00 | 61 |
| 14:00 | 69 | | 14:00 | 68 |
| 15:00 | 70 | | 15:00 | 67 |
| 16:00 | 54 | | 16:00 | 59 |
| 17:00 | 70 | | 17:00 | 70 |
| 18:00 | 66 | | 18:00 | 63 |
| 19:00 | 71 | | 19:00 | 68 |
| 20:00 | 71 | | 20:00 | 68 |
| 21:00 | 49 | | 21:00 | 51 |
| 22:00 | 69 | | 22:00 | 66 |
| 23:00 | 66 | | 23:00 | 69 |
| 0:00 | 60 | | 0:00 | 63 |
| 1:00 | 71 | | 1:00 | 67 |
| 2:00 | 65 | | 2:00 | 69 |
| 3:00 | 59 | | 3:00 | 59 |
| 4:00 | 65 | | 4:00 | 68 |
| 5:00 | 69 | | 5:00 | 53 |
| 6:00 | 64 | | 6:00 | 67 |
| 7:00 | 70 | | 7:00 | 65 |
| 8:00 | 68 | | 8:00 | 67 |
| 9:00 | 71 | | 9:00 | 70 |
| 10:00 | 63 | | 10:00 | 67 |
| 11:00 | 62 | | 11:00 | 65 |
| 12:00 | 67 | | 12:00 | 67 |
| 13:00 | 73 | | 13:00 | 69 |

A computation of the $L_{dn}$ for each of the LT locations yields 73 dBA $L_{dn}$ for LT-1 and 72 dBA $L_{dn}$ for LT-2.

Construction activities would generate temporary and intermittent noise increases during the construction of the El Casco Substation. Table 3.11-5, Typical Noise Levels Generated by

Construction Equipment, identifies typical noise levels generated by construction equipment at a distance of 50 feet.

**TABLE 3.11-5**
**TYPICAL NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT**

| Equipment | Noise Level at a Distance of 50 Feet (in dBA) |
|---|---|
| Front Loader | 79 |
| Backhoe | 85 |
| Bulldozer | 80 |
| Tractor | 80 |
| Scraper | 88 |
| Grader | 85 |
| Truck | 91 |
| Paver | 89 |
| Concrete Mixer | 85 |
| Concrete Pump | 82 |
| Crane | 83 |
| Derrick | 88 |
| Pump | 76 |
| Generator | 78 |
| Compressor | 81 |
| Jack Hammer | 88 |
| Pneumatic tool | 86 |
| Source: Cowan, James P. Handbook of Environmental Acoustics. 1994. | |

As noted in the table presented above, typical noise levels generated by construction equipment utilized for the construction of the El Casco Substation fall in the range of 80 to 91 dBA at a distance of 50 feet from the activity. These noise levels diminish with distance at a rate of approximately 6.0 dBA per doubling of distance depending on surroundings (Bolt et al 1971). The nearest sensitive receptor is an existing residential unit located approximately 1,100 feet east of the site on the north side of San Timoteo Canyon Road. The area surrounding the site is generally rural and sparsely inhabited.

Adjacent to the substation site is a riparian area containing two endangered species. They are the southwestern willow flycatcher, and the least Bell's vireo. Noise impacts to the endangered species are discussed in Section 3.4 Biology.

Although construction activities may periodically be audible at LT-1 and LT-2, the noise levels would not reach a level that would be adverse due to the distance away from the substation site (approximately 1,100 and 2,200 feet respectively). Additionally, construction activities occurring on the substation site would be limited to the allowable construction hours as defined by the County of Riverside's noise regulations. Therefore, noise impacts generated during construction of the substation would be less than significant.

Ground vibrations from construction activities rarely reach levels that can damage structures, but they can achieve the audible range and be felt in buildings very close to the site. Earth moving and compaction activities are the two most likely sources of ground vibrations associated with construction of the proposed substation. While there are no buildings on the proposed substation site, there are existing buildings (residential units) in the general project area, with the nearest being approximately 1,100 feet from the site. At that distance, any ground vibration generated at the project site would not be discernable. Therefore, no vibration impacts would occur during construction of the new substation.

In summary, impacts to noise and vibration due to the construction of the El Casco Substation would be less than significant.

**3.11.3.1.2 Banning Substation.** Work conducted at the existing Banning Substation would involve upgrades to the existing equipment that would allow the integration of this facility into the new El Casco System. These improvements would require materials to be transported to the site, use of construction worker crews, lifting equipment, graders, and loaders. Using Table 3-11.5, these operations would likely generate short-term and intermittent noise of 78 to 85 dB(A) on the substation site for a period of up to 8 months. Construction activities at the substation would not create a significant permanent increase in ambient noise levels.

However, construction noise-levels generated at the Banning Substation may be compounded by the existing vehicular traffic utilizing Interstate 10 (located approximately 700 feet north), the freight railroad (located approximately 550 feet north) and the intermittent twin-engine take-offs and landings from Banning Airport (end of runway is located approximately 4,100 feet to the east of the substation). The nearest residences are located approximately 600-800 feet away from the substation.

Based on the short term and intermittent noise levels generated by construction activities required at the existing Banning Substation, and compliance with the City of Banning's noise regulations, impacts are considered to be less than significant, even with the probable compounding of noise generators in the project area.

Since construction activities occurring at the Banning Substation would cause very minor vibrations that would not be noticeable beyond the substation boundaries, it would not generate vibration levels that would harm buildings or cause irritation to sensitive

individuals. No vibration impacts are anticipated in association with activities occurring at the Banning Substation.

In summary, impacts to noise and vibration due to the construction at Banning Substation would be less than significant.

**3.11.3.1.3 Zanja Substation.** Similar to the construction activities occurring at the Banning Substation, upgrades to the existing infrastructure at the Zanja Substation would be required to allow for integration of the substation into the El Casco System. These improvements and upgrades would require materials to be transported to the site, use of construction worker crews, and use of lifting equipment, graders, and loaders. Using Table 3-11-5, these operations would likely generate short-term and intermittent noise of 78 to 85 dB(A) on the substation site for a period of up to 6 months. The nearest sensitive receptors to Zanja substation are residences located approximately 600 feet to the southwest and southeast. Construction activities at the substation would not create a significant permanent increase in ambient noise levels.

Based on the short term and intermittent noise levels generated by construction activities required at the existing Zanja Substation, and compliance with the City of Yucaipa's noise regulations, impacts are considered to be less than significant.

Since construction activities occurring at the Zanja Substation would cause very minor vibrations that would not be noticeable beyond the substation boundaries, it would not generate vibration levels that would harm buildings or cause irritation to sensitive individuals. No vibration impacts are anticipated in association with activities occurring at the Zanja Substation.

In summary, impacts to noise and vibration impacts due to the construction at Zanja Substation would be less than significant.

**3.11.3.1.4 Southerly 115 kV Subtransmission Line Route.** Construction of the 115 kV line would be completed within one year. Construction activities at individual locations would be completed in a matter of days to a couple weeks. Therefore, construction activities would not create a long-term increase in ambient noise levels along the line route. Equipment operation would be the primary noise and vibration source associated with construction activities of the southerly 115 kV subtransmission line.

The transport and installation of subtransmission line poles, conductors, and electrical loop-ins would require the use of heavy equipment. Grading would also be required for creating staging areas, foundation pads, and conductor pull areas. Noise levels resulting from construction would be dependent on several factors including the number and type of equipment operating, the level of operation, and the distance between sources and sound and

vibration receptors. The use of this type of equipment would generate noise levels consistent with the noise levels identified in Table 3.11-5.

Heavy construction equipment typically generates noise levels up to approximately 91 dBA at 50 feet. This noise level is common with heavy construction. Noise intensity is dissipated with distance. Generally, air borne noise decreases by 6 dBA with each doubling of distance (Bolt et al 1971). Noise levels at the closest sensitive receptors would be approximately 91 dBA at 50 feet, and 85 dBA at a distance of 100 feet away.

Residents and other sensitive receptors closer to subtransmission line construction could be subjected to intermittent construction noise levels that could be considered significant if left unmitigated. Construction at any pole site would not be sustained for more than a few days and would last no more than ten hours per day. Average construction noise levels would cause significant noise impacts at distances less than 200 feet. Heavy construction equipment typically does not operate continuously in one position all day long, which would reduce the impacts to sensitive receptors. Impacts to residents located closer than 200 feet are potentially significant. Residents and sensitive receptors located at a distance greater than 200 feet would not experience significant impacts during typical construction activities. Residences located directly adjacent to the construction would experience significant noise impacts from subtransmission line construction. Mitigation measures presented in Section 3.11.3.3 would reduce the impacts of construction noise on nearby residences.

The Cities of Banning and Beaumont and the County of Riverside allow for construction activities within limited timeframes based on local ordinances. The purpose of those local ordinances is to limit the generation of construction noise to the least sensitive hours of the day and week. Additional mitigation measures are identified below for the purpose of reducing construction noise levels to the degree possible. Integration of the mitigation measures would reduce noise impacts to a less than significant level.

Construction of the subtransmission line would require the use of an air tamp to compact ground around the poles when they are erected. Vibration created from the air tamp would dissipate quickly and would not create impacts to sensitive receptors further than 50 feet from the area being compacted. There are pole sites located within 50 feet of sensitive receptors. Vibration impacts would be less than significant with implementation of the mitigation measures listed below.

In summary, impacts to noise and vibration due to the construction of the southerly 115 kV subtransmission line route would be less than significant with the implementation of mitigation measures.

**3.11.3.1.5 Mill Creek Communications Site.** Construction of the proposed communication tower at the existing Mill Creek Communications Site would require the transport of

materials, use of construction crews, and limited use of heavy equipment such as lift trucks and cranes. These activities would generate temporary and intermittent noise level increases of approximately 83 dBA for approximately 45 days.

The Mill Creek Communications Site is located in a small canyon location within the San Bernardino National Forest. The nearest sensitive receptor (an existing residential unit) is located approximately 0.5 miles away to the east. A hillside to the southwest of the site would block soundwaves from traveling to the nearest sensitive receptor. There would be no noise impacts to sensitive receptors due to the surrounding topography of the communications site, and compliance with the County of San Bernardino noise ordinance, which limits construction hours.

Since construction activities occurring at the Mill Creek Communications Site would cause very minor vibration that would not be noticeable beyond the site boundaries, it would not generate vibration levels that would harm buildings or cause irritation to sensitive individuals. No vibration impacts are anticipated in association with activities occurring at the Mill Creek Communications Site.

In summary, impacts to noise and vibration due to the construction of a communications tower at the Mill Creek Communications Site would be less than significant.

**3.11.3.1.6 Fiber Optic System.** The proposed 55-mile-long fiber optic system would primarily be installed on existing poles in the cities of Beaumont, Calimesa, Yucaipa, Redlands, and unincorporated areas of Riverside and San Bernardino counties. Approximately 8 miles of the fiber optic system would be installed within existing underground conduits in four locations. These locations are shown on Figures 2.3-1 through 2.3-4.

Construction (installation) of the fiber optic system would require bucket trucks, pick-up trucks, a drum puller, and a fork lift. Materials and supplies would be delivered to staging locations along the fiber optic system route. The use of this type of equipment would generate noise levels consistent with the noise levels identified in Table 3.11-5.

Construction equipment typically generates noise levels up to approximately 91 dBA at 50 feet. This noise level is common with construction. Noise intensity is dissipated with distance. Generally, air borne noise decreases by 6 dBA with each doubling of distance (Bolt et al 1971). Noise levels at the closest sensitive receptors would be approximately 91 dBA at 50 feet, and 85 dBA at a distance of 100 feet away.

Residents and other sensitive receptors closer to fiber optic system construction could be subjected to intermittent construction noise levels that could be considered significant if left unmitigated. Construction at any pole site would not be sustained for more than a few days and would last no more than ten hours per day. Average construction noise levels would cause significant noise impacts at distances less than 200 feet. Heavy construction equipment

typically does not operate continuously in one position all day long, which would reduce the impacts to sensitive receptors. Impacts to residents located closer than 200 feet are potentially significant. Residents and sensitive receptors located at a distance greater than 200 feet would not experience significant impacts during typical construction activities. Residences located directly adjacent to the construction would experience significant noise impacts from fiber optic system construction. Mitigation measures would reduce the impacts of construction noise on nearby residences.

The fiber optic system requires the installation of four new poles in the vicinity of the El Casco Substation. Installation of the poles would require the use of an air tamp to compact ground around the poles. Vibration created from the air tamp would dissipate quickly and would not create impacts to sensitive receptors further than 50 feet from the area being compacted. Pole sites may be located within 50 feet of sensitive receptors. Vibration impacts would be less than significant with implementation of the mitigation measures listed below.

In summary, impacts to noise and vibration due to the construction of the fiber optic system would be less than significant with the implementation of mitigation measures.

### 3.11.3.2 Operational Impacts

**3.11.3.2.1 El Casco Substation.** The substation would operate as an unmanned facility and would not consistently generate new vehicular trips that could cause roadway noise level increases. However, it may require occasional repair or maintenance crews on an intermittent basis. Operations conducted by repair and/or maintenance crews would not generate noise levels that exceed adopted noise thresholds by the County of Riverside.

Operation of the substation is not expected to generate noise and vibration impacts since the noise level is expected to be between 40 and 53 dBA, which is lower than the noise ordinance regulations. Therefore, the operation of the El Casco Substation would not generate noise levels that would impact sensitive noise receptors.

In summary, impacts to noise and vibration due to operation of the El Casco Substation would be less than significant.

**3.11.3.2.2 Banning Substation.** The substation is already in operation as an unmanned facility and does not consistently generate new vehicular trips that significant and consistently contribute to the area's ambient noise levels. However, it may require occasional repair or maintenance crews on an intermittent basis. Operations conducted by repair and/or maintenance crews would not generate noise levels that exceed adopted noise thresholds by the City of Banning.

The proposed modifications at the substations would not result in significant increases in noise generation at the substations. Potentially significant noise impacts from substations are usually limited to residences located immediately adjacent to them. There are no residences located immediately adjacent to the substation.

In summary, impacts to noise and vibration due to operation of the Banning Substation would be less than significant.

**3.11.3.2.3 Zanja Substation.** The substation is already in operation as an unmanned facility and does not consistently generate new vehicular trips that significant and consistently contribute to the area's ambient noise levels. However, it may require occasional repair or maintenance crews on an intermittent basis. Operations conducted by repair and/or maintenance crews would not generate noise levels that exceed adopted noise thresholds by the City of Yucaipa.

The proposed modifications at the substations would not result in significant increases in noise generation at the substations. Potentially significant noise impacts from substations are usually limited to residences located immediately adjacent to them. The nearest residences are located approximately 600 feet to the east of the substation.

In summary, impacts to noise and vibration due to operation of the Zanja Substation would less than significant.

**3.11.3.2.4 Mill Creek Communications Site.** The Mill Creek Communications Site is an unmanned facility that has a MEER building and a small microwave dish on its roof. Once operational, it would also have a 110-foot high tower. Thus, the additional equipment would not consistently generate new vehicular trips that could cause roadway noise level increases. However, it may require occasional repair or maintenance crews on an intermittent basis. Operations conducted by repair and/or maintenance crews would not generate noise levels that exceed adopted noise thresholds by the County of San Bernardino.

In summary, impacts to noise and vibration due to operation of the Mill Creek Communications Site would be less than significant.

**3.11.3.2.5 Southerly 115 kV Subtransmission Line.** Once the southerly 115 kV subtransmission line poles are erected and the conductors installed, noise generation would not be significant. The potential for noise would come from corona discharge and similar phenomena associated with the Proposed Subtransmission Line.

The noise from corona discharge and similar electrical phenomena associated with high voltage lines is heard as a crackling or hissing sound, which commonly varies with humidity, and is typically associated with transmission (220 kV or above). For a 500 kV transmission line, this noise is approximately 40 to 50 dBA, which is below all noise ordinances

applicable to the Proposed Project. Because the Proposed Project only includes 115 kV lines, the noise from electrical discharge would be less than significant.

Maintenance on the lines may create short-term increases in noise to sensitive receptors located in the immediate vicinity. Maintenance would be rare, intermittent, and short-term. Noise impacts from maintenance on the lines would not be significant.

In summary, impacts to noise and vibration due to operation of the 115 kV subtransmission line would be less than significant.

### 3.11.3.3 Applicant Proposed Mitigation Measures

**NOISE-1.** All construction activities occurring in association with the proposed project would operate within the allowable construction hours as determined by the applicable local agency and presented earlier in this document.

**NOISE-2.** A noise control plan would be prepared for all work sites associated with the proposed project. The noise control plan would include, but not be limited to, the following:

- Stockpiling and vehicle staging areas would be located as far away from occupied residences as possible, and screened from these uses by a solid noise attenuation barrier.
- Temporary solid noise attenuation barriers constructed with 1/2-inch plywood (sound transmission coefficient rating of 20) would be used to break the line of sight between noise generating activities and the closest residential land uses. A noise attenuation barrier constructed in this fashion would attenuate noise by 8 to 12 dB(A) depending on the distance of the barrier from located from the noise source and noise receptor.
- All stationary construction equipment would be operated as far away from residential uses as possible. If this is not possible, the equipment shall be shielded with temporary sound barriers, sound aprons, or sound skins.
- To the extent feasible, haul routes for removing excavated materials or delivery of materials from the site would be designed to avoid residential areas and areas occupied by noise sensitive receptors (e.g., hospitals, schools, convalescent homes, etc.).
- Idling equipment would be turned off when not in use for periods longer than 20 minutes.

**NOISE-3.** SCE would notify all sensitive receptors within 500 feet of construction of the potential to experience significant noise levels during construction.

## 3.11.4 Alternatives

### 3.11.4.1 Northerly 115 kV Subtransmission Line Route Alternative

The northerly 115 kV subtransmission line route would pass through the Cities of Calimesa, Beaumont and Banning, as well as unincorporated areas of the County of Riverside. The Northerly 115 kV line route would primarily pass through rural, uninhabited areas. These areas are generally quiet with few noise sources. However, some portions of the Northerly 115 kV line route would pass through, and adjacent to residential neighborhoods. Table 3.11-6, Noise Sensitive Receptors – Northerly 115 kV Route, identifies noise sensitive receptors that are within approximately 0.25 miles and their approximate location. The noise sensitive receptors identified within the City of Banning are adjacent to the northerly 115 kV subtransmission line route alternative.

**TABLE 3.11-6**
**NOISE SENSITIVE RECEPTORS – NORTHERLY 115 kV ROUTE ALTERNATIVE**

| Noise Sensitive Receptor | Location |
|---|---|
| Residential neighborhood | South of Desert Lawn Drive (City of Calimesa) |
| Residential neighborhood | North of El Casco Parkway (City of Beaumont) |
| Residential neighborhoods | Between Beaumont Avenue and Cherry Avenue (County of Riverside) |
| Residential neighborhood | West of Highland Springs Avenue (City of Beaumont) |
| Residential neighborhood | West of Mountain Avenue (City of Banning) |
| Residential neighborhood | North of Wilson Avenue (City of Banning) |
| Residential neighborhoods | North and northwest of the existing Banning Substation (City of Banning) |

Construction and operation of the alternate route would generally follow the same activities and guidelines as discussed for the southerly 115 kV subtransmission line route. However, due to the proximity of the neighborhoods located adjacent to the line route, noise and vibration impacts are potentially significant during construction. Implementation of mitigation measures identified above would reduce the impact to a less than significant level.

In summary, impacts to noise and vibration due to the construction and operation of the subtransmission line route alternative would be less than significant with the implementation of mitigation measures.

### 3.11.4.2 Site 38 (Alternate Site)

The existing noise environment at the alternative location for the new substation, Site 38, is similar to the existing noise environment described above for Site 33. The predominant noise

sources at Site 38 are generated by vehicular traffic on San Timoteo Canyon Road and occasional freight train operations. Site 38 is located within the City of Calimesa.

Construction of the El Casco Substation at Site 38 would require similar construction activities as would be required at Site 33. The use of heavy construction equipment associated with grading the site, construction of foundations, and installation of the electrical equipment at the site would generate temporary and intermittent noise levels comparable to those presented in Table 3.11-1. As these activities would comply with the City of Calimesa's noise regulations and SCE would implement the mitigation measures identified for the Proposed Project to reduce construction noise impacts to the degree possible, the impact is considered to be less than significant.

In summary, impacts to noise and vibration due to the construction and operation of the substation at the Site 38 site alternative would be less than significant with the implementation of mitigation measures.

Figure 3.11-1, El Casco Substation Noise Monitoring Locations