# 4.10 NOISE

This section presents the environmental setting and impact analysis for noise in the vicinity of the Revised Project.

## 4.10.1 Consideration of Scoping Comments

The public expressed concerns regarding noise impacts during public scoping for this Subsequent EIR. Table 4.10-1 summarizes the scoping comments received regarding noise impacts and identifies how and/or where these comments are addressed.

**Table 4.10-1 Scoping Comments Related to Noise Impacts**

| Summary of Comment | Location Comment is Addressed |
|---|---|
| The 2013 EIR noise analysis is not adequate because it did not consider receptors on Wineville Avenue or in the new APV community on Pats Ranch Road. | This Subsequent EIR noise analysis considers construction, operation, and maintenance noise impacts on residents on Wineville Avenue and Pats Ranch Road. Refer to Section 4.10.8: Revised Project Impact Analysis, Impact Noise-a and Impact Noise-c. |
| Construction and operation noise thresholds in previous study were too high. | Several noise thresholds are considered in this analysis. Thresholds are described under each impact statement. Refer to Section 4.10.8: Revised Project Impact Analysis, Impacts Noise-a through Impact Noise-d. |
| Noise will cause health issues, disrupt sleep. | Noise effects on health and sleep, including sleep disruption, are discussed in Section 4.10.8: Revised Project Impact Analysis of this Subsequent EIR under Impact Noise-a. |
| General concerns about noise. | Noise and noise levels anticipated during construction are discussed in Section 4.10.8: Revised Project Impact Analysis under Impacts Noise-a and Noise-d. Noise from post-construction project operation and maintenance activities are discussed under Impacts Noise-a and Noise-c. |
| Concerns about corona noise. | Corona noise is discussed in Section 4.10.8: Revised Project Impact Analysis under Impacts Noise-a and Noise-c. |

## 4.10.2 Definitions

### Noise

Noise is generally defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities (e.g., sleep, speech, recreation, and tasks demanding concentration or coordination), or when it has adverse effects on human or environmental health. There are various noise descriptors used to quantify the sound experience dependent upon different time scales and perception, described in greater detail below.

## Sound

### *Sound Pressure*

Sound is an air pressure fluctuation from a source, that travels through a path, such as air, to a receiver, such as the human ear (Caltrans, 2009). Sound is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A sound level of 0 dB corresponds to the threshold of human hearing, for those without hearing damage (Ray, 2013). On average, the threshold of hearing is close to 10 dB (Caltrans, 2009).

Individual dB ratings for different noise sources cannot be added directly to give the sound level for the combined noise from all sources. Instead, the combined noise level produced by multiple noise sources is calculated using logarithmic summation. For example, if one noise source produces a noise level of 80 dB, then two of the identical sources side by side would generate a combined noise level of 83 dB, or an increase of approximately 3 dB. Sound pressure levels are not a reliable indicator of loudness (Caltrans, 2009).

### *A-Weighted Sound Level*

The A-weighted sound level (dBA) is a sound pressure measurement that de-emphasizes the very low- and very high-frequency components of the sound. The de-emphasis of the very low and high frequencies mimics the frequency response of the human ear and correlates well with subjective reactions to noise (Caltrans, 2009). The A-weighting therefore assists in analysis of how humans perceive and respond to sound and noise. Typical A-weighted noise levels measured in the environment and in industry are provided in Figure 4.10-1. A 3-dBA change in environmental noise is barely perceptible and a 5-dBA change is readily perceptible by the human ear (Caltrans, 2009).

## Noise

### *Equivalent Sound Level*

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

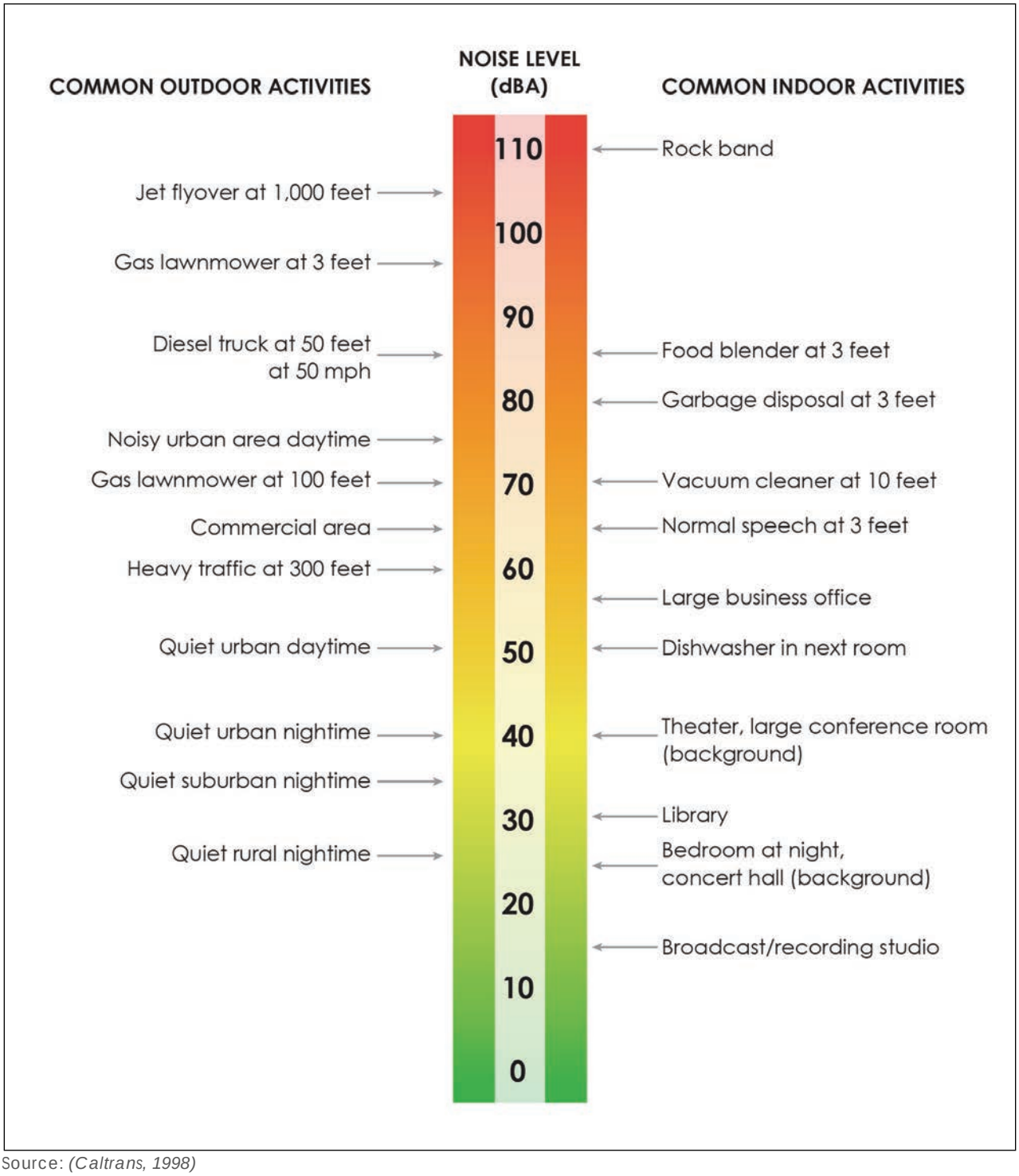
### *Maximum Sound Level*

Maximum sound level ($L_{max}$) is the highest instantaneous noise level during a specified time period. This descriptor is sometimes referred to as "peak (noise) level" (Caltrans, 2009).

### *Community Noise Equivalent Level/Day Evening Night Sound Level*

The Community Noise Equivalent Level (CNEL), also called the Day Evening Night Sound Level ($L_{den}$), is the average A-weighted noise level during a 24-hour day, obtained after addition of 5 dB in the evening from 7 pm to 10 pm, and addition of 10 dB to sound levels in the night between 10 pm and 7 am. CNEL takes into account people's heightened sensitivity during the evening hours, and even more heightened sensitivity during the late night and early morning hours (Caltrans, 2009).

## Figure 4.10-1 Typical Noise Levels in the Environment




Source: *(Caltrans, 1998)*

*Day/Night Average Sound Level*

The day/night average sound level ($L_{dn}$) is the average A-weighted noise level during a 24-hour day, obtained after the addition of 10 dB from 10 pm to 7 am. The $L_{dn}$ takes into account people's heightened sensitivity to noise at night. Exterior background noises and noise levels inside buildings are generally lower at night. This reduced noise level causes other noises to become far more noticeable, as there is less background noise to drown them out (Caltrans, 2009).

**Noise Attenuation**

Most noise sources can be classified as either point sources, such as stationary equipment, or line sources, such as a roadway or corona field on a transmission line. Sound generated by a point source nominally diminishes (attenuates) at an approximate rate of 6 dBA for each doubling of distance away from the source. For example, a 60-dBA noise level measured at 50 feet from a point source would be approximately 54 dBA at 100 feet from the source and 48 dBA at 200 feet from the source. Noise from a line source (i.e., roadways, corona noise) nominally attenuates at approximately 3 dBA per doubling of distance (US DOT, 1995).

**Meteorological Effects on Noise**

Noise levels can be affected by changes in atmospheric conditions, including wind, humidity, and air temperature. Wind bends sound waves resulting in greater noise downwind of the source and less noise upwind of the source. High winds can result in localized noise level changes. Temperature gradients can also affect noise levels. As humidity decreases, so does noise. Changes in temperature and humidity can result in significant noise variations over long distances (Caltrans, 2009).

### Groundborne Vibration

Vibration is the physical manifestation of energy carried through the earth and structures. Groundborne vibration consists of rapidly fluctuating motions or waves. It has the potential to annoy people and damage buildings. Low-level vibrations can also cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to vibration complaints due to concerns of structural damage, even though there is little risk of actual structural damage (Caltrans, 2013).

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

**Peak Particle Velocity**

The most common descriptor used to quantify construction vibration amplitude in relation to impacts to structures is the peak particle velocity (PPV). PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage (Caltrans, 2013).

**Root-Mean-Square Amplitude**
The root-mean-square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Velocity level in decibels (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration (FTA, 2006).

### Corona

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

Modern power lines are designed, constructed, and maintained so that, during dry conditions, they operate below the corona-inception voltage and generate minimal corona-related noise. Corona increases with humid and inclement weather, high pollution, and smoke from wildfires; an audible hum and crackling noise may be heard under these conditions (Parmar, 2011).

## 4.10.3 Approach to Data Collection

### Noise and Vibration Studies

**Community Noise Survey**
SCE conducted a community noise survey on November 11 and 12, 2015 (SCE, 2017b), to characterize the existing ambient noise environment in the project area. Noise measurements were conducted over a 36-hour period and included a combination of 22 short-term (15-minute duration) measurements during the day and night, and two long-term (24-hour duration) measurements. The noise measurement locations were selected near representative residential, commercial, industrial, and open space areas near the proposed transmission alignment. Table 4.10-2 show noise measurement locations and the ambient noise levels near the Revised Project.

**Corona Noise Survey**
A corona noise survey was conducted on the evening of July 6, 2017, by the CPUC's noise consultant (The RCH Group, 2017) (refer to Appendix K). Noise measurements were collected at an isolated existing 220-kV transmission line. Noise data was collected at 1-minute intervals over a 10-minute period from a distance of approximately 50 feet. Corona noise was not audible during the noise survey.

## Table 4.10-2 Summary of Ambient Noise Levels near the Revised Project [a]

| Survey Location ID [b] | Survey Location | Dominant Noise Sources | Survey Date and Time | $L_{Max}$ (dBA) | $L_{eq}$ (dBA) |
|---|---|---|---|---|---|
| **Overhead Alignment on Wineville Avenue** | | | | | |
| LT-1 [c] | Wineville Avenue/ Cantu-Galleano Ranch Road | Overhead Alignment on Wineville Avenue | 11/11/15–11/12/15 12:05 pm –1:25 pm | 91 | 64 |
| ST-1 | Wineville Avenue/ Cantu-Galleano Ranch Road | Vehicle/truck traffic, locomotive horn | 11/12/15 1:10 pm–1:25 pm | 72 | 63 |
| | | | 11/12/15 2:35 am–2:50 am | 73 | 61 |
| ST-2 | Landon Drive at Wineville Ave | Vehicle/truck traffic, industrial facility generator, locomotive horn | 11/12/15 12:45 pm–1:00 pm | 81 | 66 |
| | | | 11/12/15 2:10 am–2:25 am | 81 | 71* |
| **Underground Transmission Alignment** | | | | | |
| ST-5 | Park-and-Ride on Limonite Ave at I-15 | Vehicle/truck traffic | 11/12/15 11:20 am–11:35 am | 73 | 60 |
| | | | 11/12/15 1:00 am–1:15 am | 68 | 56 |
| ST-6 | 68th Street at Carnellian Street | Vehicle/truck traffic | 11/12/15 3:10 pm–3:25 pm | 84 | 67 |
| | | | 11/12/15 12:35 am–12:50 am | 66 | 50 |
| ST-7 | 68th Street at Dana Ave | Vehicle/truck traffic | 11/12/15 1:55 pm–2:10 pm | 66 | 47 |
| | | | 11/12/15 12:10 am–12:25 am | 43 | 36 |
| **Existing Distribution Line Relocations #7 and #8** | | | | | |
| ST-8 | Grulla Court at Pinto Lane | Vehicle traffic | 11/12/15 2:35 pm–2:50 pm | 71 | 53 |
| | | | 11/11/15 12:10 am–12:25 am | 51 | 43 |
| ST-10 | Julian Drive at Crest Ave | Vehicle traffic and aircraft flyovers | 11/11/15 4:55 pm–5:10 pm | 68 | 52 |
| | | | 11/11/15 10:55 pm–11:10 pm | 59 | 49 |

*Source: (SCE, 2017b)*

## 4.10.4 Environmental Setting

### Regional Setting

Ambient noise levels within the Revised Project vicinity are influenced primarily by vehicular traffic, air traffic, locomotive noise, and agricultural noise. Land uses near the Revised Project area are primarily residential, agricultural, open space, and commercial. Railroad activity in the project vicinity includes two transcontinental Union Pacific Railroad lines and the Riverside County Transportation Commission Metrolink commuter trains. Ambient noise levels in the region are highest near multi-lane roadways such as Cantu Galleano Ranch Road and 68th Avenue (SCE, 2017b).

### Revised Project Setting

**Existing Noise Conditions**

Dominant noise sources contributing to ambient noise levels in the Revised Project area include vehicle traffic, agricultural noise, and aircraft flyovers. The Riverside Municipal Airport and Ontario International Airport are located within 5 miles of the Revised Project alignment and intermittent noise from air traffic is common in the project area.

**Sensitive Receptors**

Sensitive receptors are locations where occupants are more susceptible to excessive levels of noise, or where noise would interfere with normal activities. Noise-sensitive receptors considered are:

- Residences
- Educational facilities
- Libraries
- Places of worship
- Hospitals
- Passive recreation areas

Residences were identified within varying distances to the Revised Project area, as close as 148 feet to the revised overhead transmission line alignment, and 30 feet to the proposed underground transmission line alignment. Many of the residential communities along major roadways are bordered by concrete sound walls along the roadway, which help to protect the communities from roadway noise. Table 4.10-3 lists all educational facilities, libraries, places of worship, hospitals, or passive recreation areas within 1,000 feet of the construction work area. Noise-sensitive receptors within 1,000 feet of the Revised Project are shown in Figure 4.10-2 and Figure 4.10-3.

**Ambient Noise Levels**

Short-term and long-term ambient noise measurements were collected during the November 2015 community noise survey. Short-term and long-term $L_{eq}$ noise levels are summarized in Table 4.10-2. A long-term noise measurement at Wineville Avenue measured a 24-hour CNEL of 70 dBA.

## Table 4.10-3 Sensitive Receptors within 1,000 feet of the Revised Project

| Receptor Type | Distance to Nearest Project Component Work Area (feet) |
|---|---|
| **Overhead Transmission Alignment on Wineville Avenue** | |
| Residence – Wineville Avenue [a] | 150 |
| **Underground Transmission Alignment** | |
| Residence – Pats Ranch Road [a] | 30 |
| Residence – 68th Street [a] | 30 |
| Louis Vandermolen Fundamental Elementary School | 50 |
| River Trails Park | 620 [c] |
| **Distribution Line Relocations #7 and #8** | |
| Residence [a] | 200 |
| River Trails Park | 0 |
| **Etiwanda Marshalling Yard** | |
| Residence [a, b] | 495 |
| Jurupa Valley High School | 420 |

Notes:

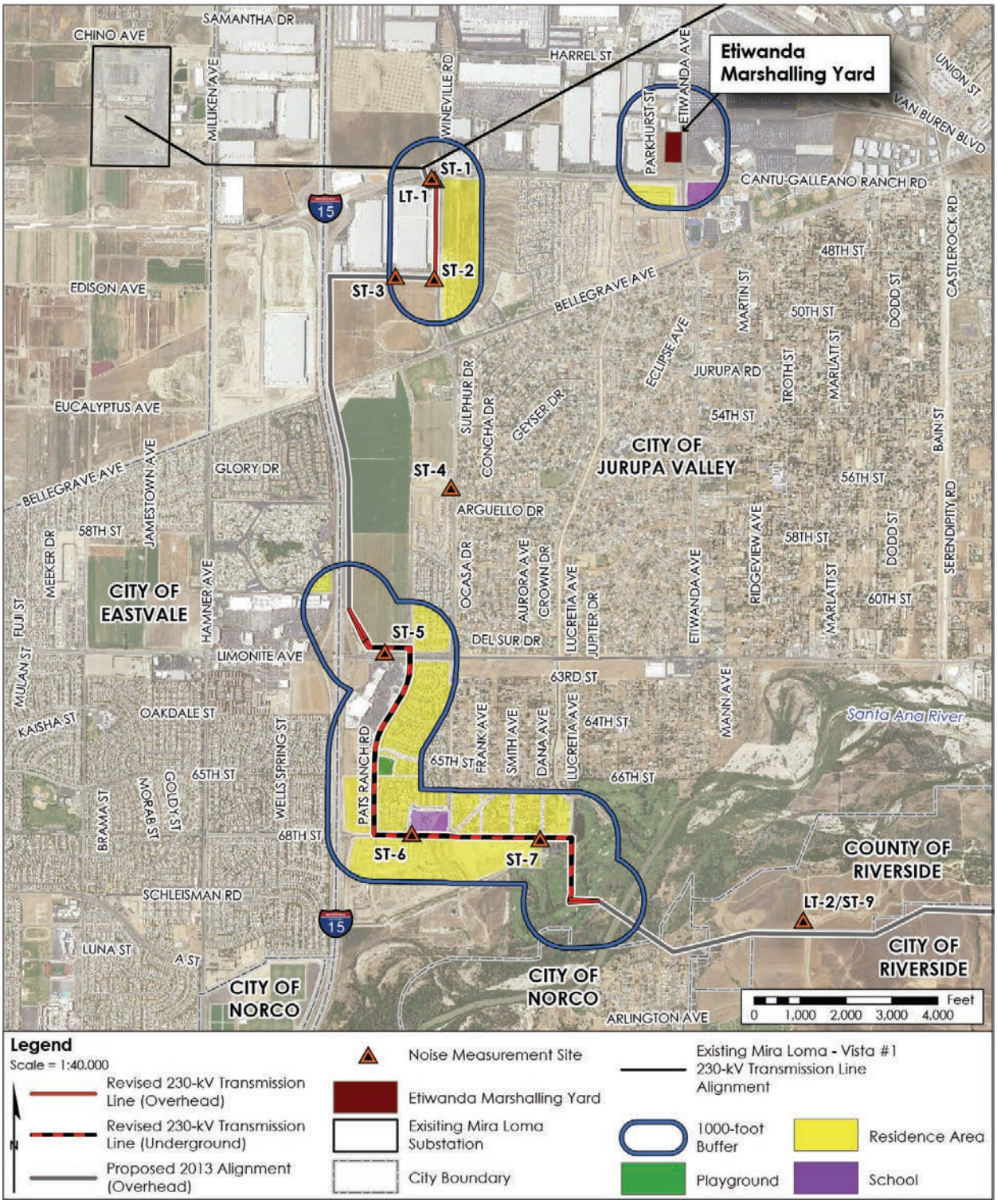
[a] Many residences occur within 1,000 feet of the Revised Project alignment and Etiwanda Marshalling Yard. The distance provided is measured to the nearest receptor for each component of the Revised Project.

[b] Homes in the Serrano Ranch community were under construction at the time this document was published. The distance provided considers the closest possible residence within the Serrano Ranch community, even if it was not constructed at the time the document was published.

[c] Distance from Tower JA2A on north side of river crossing.

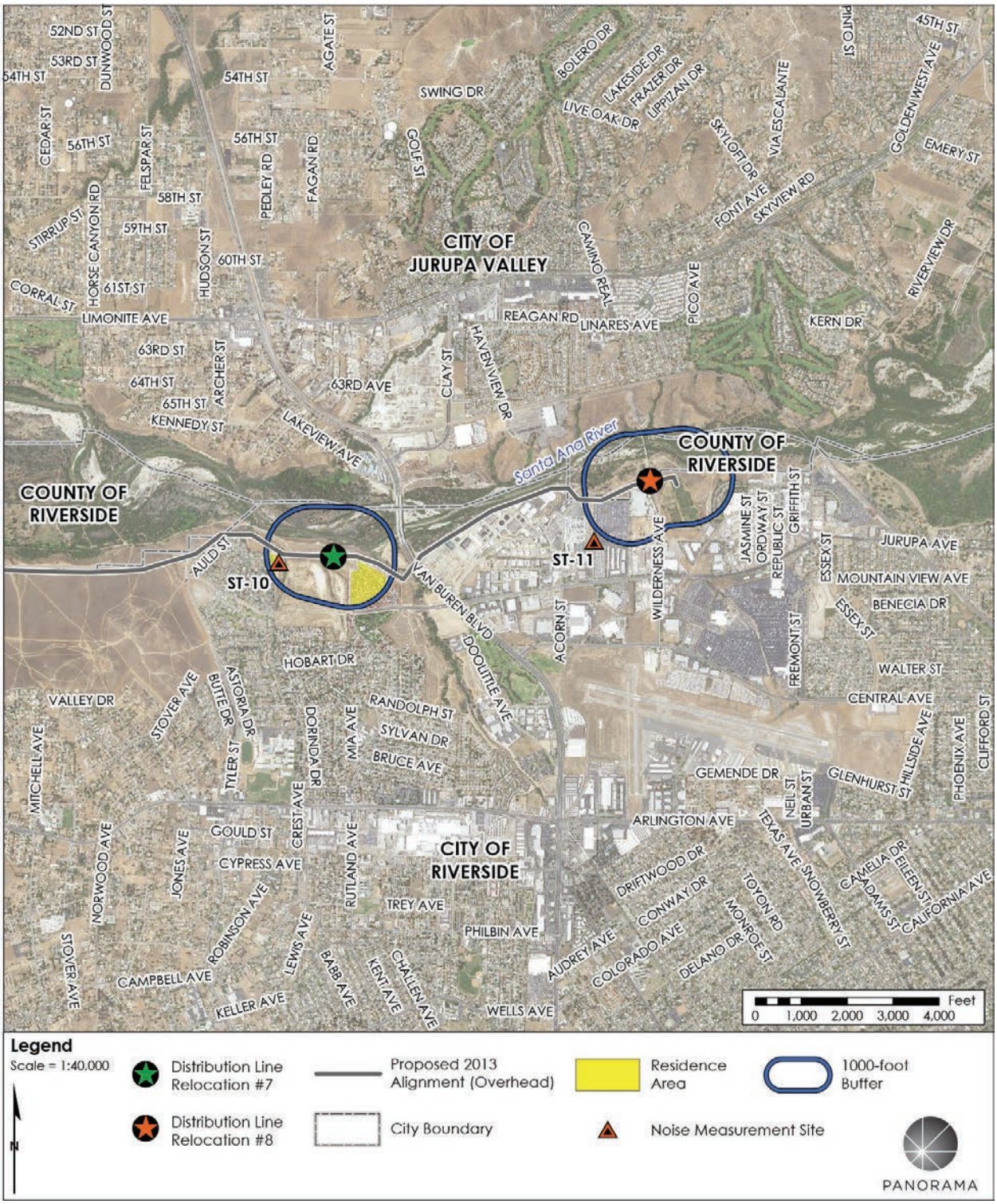
*Source: (Google, Inc., 2017a)*

## Figure 4.10-2 Noise Measurements and Sensitive Receptors near the Revised Project (1 of 2)




*Source: (ESRI, 2017a; SCE, 2017a; Google, Inc., 2017b; City of Riverside Innovation and Technology Department, 2016; Riverside County Information Technology Geographical Solutions, 2014; CDFW, 2016; AECOM, 2016)*

## Figure 4.10-3 Noise Measurements and Sensitive Receptors near the Revised Project (2 of 2)




*Source: (ESRI, 2017a; SCE, 2017a; Google, Inc., 2017b; City of Riverside Innovation and Technology Department, 2016; Riverside County Information Technology Geographical Solutions, 2014; CDFW, 2016; AECOM, 2016)*

## 4.10.5 Regulatory Setting

### Federal

There are no established federal noise or vibration standards that apply to the Revised Project.

### State

#### California Noise Exposure Regulations

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

#### California Department of Transportation

There are no state regulations regarding vibration that are relevant to the Revised Project. Caltrans provides guidance for analysis of groundborne vibration. The revised project is not subject to Caltrans regulations; however, these guidelines serve as a useful tool to evaluate vibration impacts on structures and residents. Table 4.10-4 provides the thresholds for evaluating the potential for groundborne vibration to damage structures and describes the reactions of people who are exposed to continuous vibration.

**Table 4.10-4 Groundborne Vibration Impact Thresholds**

| Parameter | Maximum PPV (in/sec) | |
|---|---|---|
| | Transient Sources [a] | Continuous/Frequent Intermittent Sources [b] |
| **Structural Damage** | | |
| Extremely fragile historic buildings, ruins, ancient monuments | 0.12 | 0.08 |
| Fragile buildings | 0.20 | 0.10 |
| Historic and some old buildings | 0.50 | 0.25 |
| Older residential structures | 0.50 | 0.30 |
| New residential structures | 1.00 | 0.50 |
| Modern industrial/commercial buildings | 2.00 | 0.50 |
| **Human Response** | | |
| Severe | 2.00 | 0.40 |
| Strongly perceptible | 0.90 | 0.10 |
| Distinctly perceptible | 0.25 | 0.04 |
| Barely perceptible | 0.04 | 0.01 |

Notes:

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

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

*Source: (Caltrans, 2004)*

## Local

Pursuant to CPUC GO No. 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of investor-owned utility projects. Local land use regulations would, therefore, not apply to the revised project; however, the CPUC often considers local policies to evaluate the significance of impacts in the study area. The local general plan policies and noise ordinance standards of cities are used as a basis for evaluating noise level impacts.

### County of Riverside

#### *County of Riverside General Plan*

The County of Riverside prepared the General Plan in 2008 and adopted amendments to several elements in 2015. The County defines noise-sensitive land uses and establishes noise guidelines in Chapter 7, Noise Element. Single and multiple family residential, group homes, hospitals, schools and other learning institutions, and parks and open space lands, where noise levels exceed 65 dBA are considered noise-sensitive (County of Riverside, 2015).

### City of Jurupa Valley

#### *2017 Draft General Plan*

The City of Jurupa Valley adopted the 2017 Draft General Plan on August 17, 2017. The following measures outlined in Chapter 4, Noise Element are pertinent to the Revised Project (City of Jurupa Valley, 2017a).

| | |
|---|---|
| Policy NE 1.5 | Noise-Sensitive Uses. Consider the following uses noise sensitive and discourage these uses in areas in excess of 65 CNEL: schools, hospitals, assisted living facilities, mental care facilities, residential uses, libraries, passive recreational uses, and places of worship. |
| Policy NE 3.4 | Construction Equipment. Require that all construction equipment utilize noise reduction features (i.e., mufflers and engine shrouds) that are at least as effective as those originally installed by the equipment's manufacturer. |
| Policy NE 3.5 | Construction Noise. Limit commercial construction activities adjacent to or within 200 feet of residential uses to weekdays, between 7:00 am and 6:00 pm, and limit high-noise-generating construction activities (e.g., grading, demolition, pile driving) near sensitive receptors to weekdays between 9:00 am and 3:00 pm. |
| Policy NE 4.2 | Avoid the placement of vibration-producing land uses adjacent to or within one-quarter mile of sensitive receptors. |
| Policy NE 4.3 | Truck Idling. Restrict truck idling near sensitive vibration receptors. |

#### *Jurupa Valley Municipal Code*

The Jurupa Valley municipal code limits the maximum noise levels $L_{max}$ in residential areas to 55 dB for daytime (7:00 am to 10:00 pm) and 45 dB for nighttime (10:00 pm to 7:00 am). Section 11.10.020 of the municipal code exempts private construction noise more than 0.25 mile

from an inhabited dwelling. Construction noise within 0.25 mile of an inhabited dwelling is exempt as long as construction activities are limited to the hours of 6:00 am to 6:00 pm during the months of June through September; and between the hours of 7:00 am to 6:00 pm during the months of October through May (City of Jurupa Valley, 2012).

**City of Riverside**

***City of Riverside General Plan 2025***

The City of Riverside establishes noise/land use compatibility guidelines in the City's General Plan (City of Riverside, 2007). The General Plan Noise Element identifies acceptable noise levels for different land uses, and the City policies that are implemented to regulate noise. Acceptable noise levels for noise-sensitive land uses, such as residences, schools, hospitals, and places of worship, range from 60 to 65 dB (CNEL or $L_{dn}$). The following policy is pertinent to the Revised Project:

| | |
|---|---|
| Policy N-1.3 | Enforce the City of Riverside Noise Control Code to ensure that stationary noise and noise emanating from construction activities, private developments/residences and special events are minimized. |

***City of Riverside Municipal Code***

Riverside Municipal Code § 7.25.0101(A) establishes residential external noise standards. Daytime (7:00 am to 10:00 pm) noise levels up to 55 dBA are considered acceptable. Nighttime (10:00 pm to 7:00 am) noise is limited to 45 dBA.

Section 7.35.010(B)(5) limits construction activities to the hours between 7:00 am and 7:00 pm on weekdays and 8:00 am to 5:00 pm on Saturdays. Construction activities are not permitted on Sundays or federal holidays (City of Riverside, 1996). The municipal code does not establish a maximum noise limit for construction activities.

Section 7.35.020 (F) states that project maintenance activities that are deemed necessary to serve the best interest of the public, and which are conducted by public agencies and/or utilities or their contractors, are exempt from the noise requirements of the City of Riverside Municipal Code. This exemption would be pertinent to maintenance activities that would be conducted during the operation phase of the Revised Project.

## 4.10.6 Applicant's Environmental Protection Elements

SCE has proposed EPEs to reduce environmental impacts. These measures were described as "applicant proposed measures" in the *Noise Technical Report* (SCE, 2017b). EPEs that avoid or reduce potentially significant impacts of the Revised Project will be incorporated as part of any CPUC project approval, and SCE will be required to adhere to the EPEs as well as any identified mitigation measures. The EPEs are included in the MMRP for the Revised Project (refer to Chapter 9: Mitigation Monitoring and Reporting Plan of this Subsequent EIR), and the implementation of the EPEs will be monitored and documented in the same manner as mitigation measures. The EPEs that are applicable to the noise analysis are provided in Table 4.10-5.

## Table 4.10-5 Environmental Protection Elements for Noise

| Environmental Protection Element | Requirements |
|---|---|
| **EPE NOI-01 Noise Complaint Reporting** | The project (via construction contractor) would establish a telephone hot-line for use by the public to report any perceived significant adverse noise conditions associated with the construction of the project. If the telephone is not staffed 24 hours per day, the contractor would include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This hot-line telephone number would be posted at the project site during construction in a manner visible to passersby. This telephone number would be maintained until the project has been considered commissioned and ready for operation. |
| **EPE NOI-02 Noise Complaint Investigation** | Throughout the construction of the project, the contractor would document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The contractor or its authorized agent would:<br>• Use a Noise Complaint Resolution Form to document and respond to each noise complaint;<br>• Contact the person(s) making the noise complaint within 24 hours;<br>• Conduct an investigation to attempt to determine the source of noise related to the complaint; and<br>• Take all reasonable measures to reduce the noise at its source. |
| **EPE NOI-03 Construction Practices** | The following are typical field techniques for reducing noise from construction activities on a project site, with the purpose of reducing aggregate construction noise levels at nearby noise sensitive receptors:<br>• To the extent practical and unless safety provisions require otherwise, adjust all audible back-up alarms downward in sound level, reflecting vicinities that have expected lower background level, while still maintaining adequate signal-to-noise ratio for alarm effectiveness. Consider signal persons, strobe lights, or alternative safety equipment and/or processes as allowed, for reducing reliance on high-amplitude sonic alarms.<br>• As practical and observing safety considerations, place stationary construction noise sources that tend to operate continuously and/or for extended periods of time, such as generators and air compressors, as far away as possible from potentially affected noise sensitive receptors. Place non-noise-producing mobile equipment such as trailers in the direct sound pathways between suspected major noise-producing sources and sensitive receptors.<br>• Limit mobile construction equipment or vehicle engine idling duration, so that such continuous sources of noise do not unnecessarily contribute to an aggregate construction noise level. |
| **EPE NOI-04 Noise Reduction Practices** | The following are typical practices for construction equipment selection (or preferences) and expected function that can help reduce noise.<br>• Pneumatic impact tools and equipment used at the construction site would have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.<br>• Provide impact noise producing equipment (i.e., jackhammers and pavement breaker[s]) with noise attenuating shields, shrouds or portable barriers or enclosures, to reduce operating noise.<br>• Line or cover hoppers, storage bins, and chutes with sound-deadening material (e.g., apply wood or rubber liners to metal bin impact surfaces). |

| Environmental Protection Element | Requirements |
|---|---|
| | • Provide upgraded mufflers, acoustical lining, or acoustical paneling for other noisy equipment, including internal combustion engines.<br>• Use alternative procedures of construction and select a combination of techniques that generate the least overall noise and vibration.<br>• Use construction equipment manufactured or modified to reduce noise and vibration emissions, such as:<br>- Electric instead of diesel-powered equipment.<br>- Hydraulic tools instead of pneumatic tools.<br>- Electric saws instead of air- or gasoline-driven saws. |
| **EPE NOI-05 After-Hours Construction** | In the event construction activities are considered necessary on days or hours outside of what is specified by noise ordinance, SCE would provide advanced notification (as required by ordinance or as agreed upon with the local jurisdiction) of such anticipated activity to the CPUC, the local municipality or County where anticipated work is to be performed, and to residents within 300 feet of the anticipated work. This notification would include a general description of the work to be performed, location, and hours of construction anticipated. Additionally, SCE or its contractors would route all construction traffic and/or helicopter flight(s) away from residences, schools and recreational facilities to the maximum extent feasible. |

*Source: (SCE, 2017b)*

## 4.10.7 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 *et seq.*) provides guidance on assessing whether a project would have significant impacts on the environment. Changes to the Proposed Project or changes in baseline conditions that were not analyzed in the 2013 RTRP EIR require additional analysis to fully disclose potential impacts of the Revised Project. The CPUC prepared an Initial Study Checklist (refer to Appendix B of this Subsequent EIR) to identify the new potentially significant or increased impacts that may occur as a result of the Revised Project components or changes in baseline conditions. The Initial Study Checklist indicated that the project has the potential for new or increased impacts under the significance criteria included below. Note that the Initial Study Checklist found Impact a) to have no new significant impact. This analysis will analyze the impact again, since the City of Jurupa Valley recently released a 2017 General Plan Draft EIR, which was not addressed in the 2013 RTRP EIR. The remaining Appendix G significance criteria that were determined to not have greater impacts as described in the 2013 RTRP EIR are not addressed in this section. CEQA significance criteria are lettered below to match the criteria lettering in the 2013 RTRP EIR. Consistent with Appendix G, the Revised Project would have significant noise impacts if it would:

a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies
b. Expose persons to or generate excessive (0.3 PPV or greater) groundborne vibration or groundborne noise levels
c. Result in a substantial (5 dBA CNEL or greater) permanent increase in ambient noise levels in the project vicinity above levels existing without the project

d. Result in a substantial (10 dBA $L_{eq}$ or greater) temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

**Impact Thresholds**

Noise impacts of the Revised Project were evaluated based on the Appendix G significance criteria. Thresholds of significance have been defined for each significance criteria and are described below.

***Noise Standards***

There are no state and federal noise standards applicable to the Revised Project. Local noise standards include approved hours of construction within each applicable jurisdiction (Table 4.10-6). Daytime and nighttime noise limits have been established for the City of Jurupa Valley and City of Riverside. Construction noise that occurs outside of the approved construction hours, as well as operational noise, would cause a significant noise impact if noise levels exceed the established noise limits for each jurisdiction.

**Table 4.10-6 Noise-exempted Weekday Construction Hours**

| Jurisdiction | June – September | October – May |
|---|---|---|
| Jurupa Valley | 6:00 am – 6:00 pm | 7:00 am – 6:00 pm |
| Riverside | 7:00 am – 7:00 pm | 7:00 am – 7:00 pm |

*Source: (City of Riverside, 1996; City of Jurupa Valley, 2017b)*

***Vibration***

Excessive vibration levels are defined as vibration levels that may result in cosmetic or structural damage. The CPUC does not have a specific vibration threshold for cosmetic or structural damage; therefore, Caltrans standards were used. The Caltrans thresholds are provided in Table 4.10-4. There are no historic buildings, ruins, ancient monuments, or fragile buildings within the vicinity of the Revised Project. Damage to structures within the Revised Project alignment is anticipated to occur if vibration thresholds exceed 0.3 in/sec PPV.

***Permanent and Temporary Ambient Noise***

Substantial noise increases constitute a significant noise impact. The CPUC does not have specific thresholds for permanent or temporary noise increases. Outside of laboratory conditions, noise level changes below 3 dBA are not detectable by the human ear. Although individuals' reactions to changes in noise vary, empirical studies have shown people begin to notice environmental noise changes around 5 dBA (USEPA, 1993). This noise analysis defines a significant permanent noise increase as 5 dBA CNEL or greater as a result of the Revised Project. Noise level increases of more than 10 dBA are generally considered substantial (USEPA, 1993). A substantial temporary noise increase and significant impact would occur if ambient noise levels increase 10 dBA $L_{eq}$ (1 hour) as a result of project construction activities. Noise levels are calculated at the receptors, which are identified in Table 4.10-3.

***Schools***

The Jurupa Valley General Plan includes policies that encourage the City to maintain noise levels at schools below 65 dBA CNEL (City of Jurupa Valley, 2017a). To maintain appropriate classroom noise levels during instructional periods, the CPUC will consider hourly noise levels that exceed 65 dBA ($L_{eq}$) at a classroom facility to be the impact threshold. The project would have a significant impact on school instruction if hourly $L_{eq}$ construction noise levels exceed 65 dBA at the exterior walls of school instructional facilities while school is in session.

## 4.10.8 Revised Project Impact Analysis

### Approach to Impact Analysis

This impact analysis considers whether implementation of the Revised Project would result in significant noise impacts, and focuses on reasonably foreseeable effects of the Revised Project as compared with baseline conditions. The analysis uses significance criteria based on the CEQA Appendix G Guidelines. These criteria may be modified to address project impacts. The potential direct and indirect effects of the Revised Project are addressed below, and the cumulative effects are addressed in Chapter 5: Cumulative Impacts. Refer to the 2013 RTRP EIR for analysis of other elements of the Proposed Project.

Applicable EPEs are identified and mitigation is defined to avoid or reduce significant noise impacts. The significance of the impact is first considered prior to application of EPEs and a significance determination is made. The implementation of EPEs is then considered when determining whether impacts would be significant and thus would require mitigation. Mitigation measures are identified to reduce significant impacts of the Revised Project.

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

- Relevant federal, state, and local noise and vibration standards and policies
- The existing noise environment and measured levels as documented by the *Noise Technical Report* (SCE, 2017b)
- Revised Project construction locations, land uses, and distances to sensitive receptors
- Modeled construction noise levels from the Revised Project
- Modeled and measured corona noise for the overhead transmission line and an existing 230-kV transmission line (respectively)

**Modeled Noise Levels**

Construction and post-construction noise levels for the Revised Project were modeled by evaluating the noise generated by each piece of equipment required for construction, operation, and maintenance activities. Construction noise was predicted at the representative nearby noise-sensitive receptors with a technique based on the "general assessment" methodology as described in Chapter 12 of the FTA's *Transit Noise and Vibration Impact Assessment* (FTA, 2006) guidance report. In summary, this technique presumes the two loudest pieces of equipment associated with an activity are operating at full power and located at the geographic center of a

construction area or zone. These geographic centers would be collinear with the Revised Project alignment.

### Summary of Impacts

Table 4.10-7 presents a summary of the CEQA significance criteria and impacts from noise that would occur during construction, operation, and maintenance of the Revised Project.

**Table 4.10-7 Summary of Revised Project Impacts on Noise**

| Significance Criterion | Project Phase | Significance before EPEs | Significance after EPEs and before Mitigation | Significance after Mitigation |
|---|---|---|---|---|
| **Impact Noise-a:** Would the Revised Project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? | Construction | Significant | Significant<br>EPE NOI-01<br>EPE NOI-02<br>EPE NOI-03<br>EPE NOI-04<br>EPE NOI-05 | Less than Significant<br>MM NOI-01<br>MM NOI-02<br>MM NOI-03 |
| | Operation and Maintenance | Less than Significant | --- | --- |
| **Impact Noise-b:** Would the Revised Project expose persons to or generate excessive (0.3 PPV or greater) groundborne vibration or groundborne noise levels? | Construction | Significant | Less than Significant<br>EPE NOI-04 | --- |
| | Operation and Maintenance | Less than Significant | — | — |
| **Impact Noise-c:** Would the Revised Project result in a substantial (5 dBA CNEL or greater) permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | Construction | No Impact | — | — |
| | Operation and Maintenance | Less than Significant | — | — |
| **Impact Noise-d:** Would the Revised Project result in a substantial (10 dBA $L_{eq}$ or greater) temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | Construction | Significant | Significant<br>EPE NOI-01<br>EPE NOI-02<br>EPE NOI-03<br>EPE NOI-04 | Significant and Unavoidable<br>MM NOI-03<br>MM NOI-04 |
| | Operation and Maintenance | Less than Significant | — | — |

## Impact Discussion

| | Significance Determination |
|---|---|
| **Impact Noise-a: Would the Revised Project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?** | **Construction: *Less than Significant with Mitigation*** |
| | **Operation & Maintenance: *Less than Significant*** |

### Overview

Noise annoyance can result from noise interfering with daily activities, feelings, thoughts, sleep, or rest, and might be accompanied by negative responses, such as anger, displeasure, exhaustion, and by stress-related symptoms. Noise ordinances and standards are implemented to ensure that community noise levels do not reach intensities that interfere with daily activities or affect the health of residents.

SCE is proposing to conduct construction within the weekday construction hours specified by the City of Jurupa Valley and the City of Riverside. Weekend construction is not proposed. Construction would last approximately 26 months; however, construction of the transmission line would not occur at a single location for the full 26 months. Construction at poles, towers, or underground vault and duct bank locations would occur in durations identified in Chapter 2: Project Description.

### Construction

**230-kV Transmission Line and Distribution Line Relocations #7 and #8**

***Construction Near Residences***

**Overhead and Underground Construction.** Construction noise from Revised Project overhead transmission line construction would occur at pole and tower locations along Wineville Avenue and I-15, as well as at riser pole locations on either end of the underground transmission line segment. Noise would be temporary, localized, and would occur for a maximum of 3 weeks, excluding weekends, at each pole or tower location. Construction of the overhead transmission line would require the use of drill rigs, front end loaders, and cranes. Table 4.10-8 lists noise levels of typical construction equipment that SCE would use during construction of the Revised Project.

Construction of the entire 2-mile underground 230-kV transmission line would take approximately 18 months, and would require concrete saws, excavators, and other earth-moving equipment. Underground construction at Distribution Line Relocations #7 and #8 would require similar equipment. Trench and vault installation would move along the underground alignment during construction. Receptors along the underground alignment would be exposed to construction noise for up to 3 weeks, excluding weekends, during vault installation, and for shorter time periods during trenching. The City of Jurupa Valley and City of Riverside do not set noise limits for construction noise as long as construction occurs within the defined construction hours. Noise from typical construction equipment (high-noise-generating equipment is discussed below) would not conflict with local standards. ***Noise from typical construction equipment would be less than significant.***

## Table 4.10-8 Construction Equipment Noise Levels for the Revised Project

| Equipment | Noise Level at 50 feet (dBA) [a] | |
|---|---|---|
| | $L_{max}$ | $L_{eq}$ |
| Backhoe | 78 | 74 |
| Chain Saw | 84 | 77 |
| Clam Shovel* | 93 | 80 |
| Compactor | 83 | 76 |
| Compressor (air) | 78 | 74 |
| Concrete Pump | 81 | 74 |
| Concrete Saw* | 90 | 83 |
| Concrete Truck | 79 | 75 |
| Crane | 81 | 73 |
| Drill Rig | 84 | 77 |
| Dump Truck | 77 | 73 |
| Excavator | 81 | 77 |
| Front End Loader | 79 | 75 |
| Flat Bed Truck | 74 | 70 |
| Helicopter (Hughes 500E) | 90 | 90 |
| Horizontal Boring Machine | 82 | 73 |
| Hydra Break Ram* | 90 | 80 |
| Jackhammer* | 89 | 82 |
| Man Lift | 75 | 68 |
| Paver | 77 | 74 |
| Pile Driver* | 95 | 94 |
| Puller | 77 | 73 |
| Pump | 81 | 78 |
| Roller | 80 | 73 |
| Vacuum Excavator* | 85 | 81 |

* Indicates high-noise-generating equipment

[a] Noise levels are provided at 50 feet. Noise levels at the nearest receptor (30 feet from the underground alignment) are anticipated to be approximately 4 dBA higher.

*Source: (US DOT, 2008)*

The Jurupa Valley General Plan includes policies to reduce noise at sensitive receptors during more sensitive times of the day. Policy NE 3.5 encourages limiting high-noise-generating construction activities (e.g., grading, demolition, pile driving) near sensitive receptors to weekdays between 9:00 am and 3:00 pm. For the purpose of this analysis, construction equipment that generates 85 dBA ($L_{max}$) or greater at a reference distance of 50 feet shall be considered high-noise-generating equipment. High-noise-generating equipment that would be utilized for Revised Project construction are identified in Table 4.10-8.

High-noise-generating construction equipment would mainly be required for construction of the duct banks and vaults along the Revised Project underground alignment, and would include use of pile drivers, concrete saws, and pavement-breaking equipment. The loudest high-noise-generating equipment would be the pile driver used for installation of vault shoring. SCE anticipates constructing 32 vaults along the 2-mile underground segment. The location of the vaults cannot be finalized until the final engineering design is completed; therefore, this analysis assumes that vaults could be constructed (and pile drivers may be used) at any location along the underground transmission route.

The receptors that would be closest to project activities are residences located approximately 30 feet from underground construction. Maximum noise levels at 30 feet would be approximately 98 dBA. If pile drivers or other high-noise-generating equipment are used before 9:00 am and after 3:00 pm, construction would not comply with Policy NE 3.5 of the Jurupa Valley General Plan, and the impact would be significant.

SCE would implement EPE NOI-04 which requires SCE to use alternative construction procedures to minimize overall noise levels. Alternate construction methods for shoring trench and vault walls include trench shields and hydraulic jacks, which can be used instead of a pile driver. Other high-noise-generating equipment, such as the concrete saw and pavement-breaking equipment, would still be required, and potential alternative reduced-noise construction practices may not be efficient for roadway work. The impact of high-noise-generating construction equipment would remain significant.

MM NOI-01 limits the use of high-noise-generating equipment to between 9:00 am and 3:00 pm on weekdays, assuring compliance with Jurupa Valley General Plan Policy NE 3.5. ***High-noise generating equipment would not exceed local noise standards and the impact would be less than significant with mitigation.***

**Helicopter Use.** A helicopter (Hughes 500E model) would be used during line-stringing activities for the overhead transmission line. Helicopter noise would be intermittent and temporary at pole and tower locations. Helicopters would not operate within 200 feet of receptors due to flight safety considerations (Riverside Public Utilities, 2012). Noise would be approximately 78 dBA at this distance. Operations would be limited to construction hours approved by the City of Jurupa Valley and would, therefore, not exceed local ordinances or standards. ***Helicopter noise would not exceed local noise standards and the impact would be less than significant.***

**Jack and Bore (Trenchless Construction).** Jack and bore construction may be required for construction of underground trenches across Limonite Avenue. Excavating the boring and receiving pits would generally be the most intense noise source and would have similar impacts as vault excavation, described above. Thereafter, the noise impact would be less intense but a persistent noise source (Carlsbad Desalination Project, 2005). Jack and bore may require continuous boring that would extend beyond city-approved construction hours. The closest residences on Pats Ranch Road (as close as 70 feet) have existing sound walls that attenuate noise from the roadway, and would serve to also attenuate construction noise. Boring noise at the nearest receptor is anticipated to be approximately 50 dBA $L_{eq}$ [1] and would not exceed the daytime noise ordinance (55 dBA) that would be in effect outside of city-approved construction hours.

Boring noise would exceed the nighttime noise ordinance. Noise barriers, as required by EPE NOI-03 would be implemented at night to reduce noise levels at receptors. Noise barriers would provide an additional 8 dBA of reduction. Noise levels would be reduced to 42 dBA and would not exceed the nighttime noise ordinance of 45 dBA. ***Noise from jack and bore operations would be less than significant with mitigation.***

**Temporary Trench Plates.** The underground trenches for each duct bank would be covered using steel trench plates after the trench has been excavated and prior to backfilling and paving the trench. There is potential for steel plates to be in place on roadways for up to 18 months. Underground construction would occur on roadways where existing sound walls screen residences from roadway noise, as well as locations where sound walls do not exist. Steel trench plates may reverberate as vehicles drive across the plates and increase noise levels above ambient conditions. Noise generated when vehicles cross skid-resistant metal trench plates has been observed at 79 dBA ($L_{max}$) at a distance of 50 feet (Panorama Environmental, Inc., 2018). Existing sound walls, where present, would reduce noise by 8 dBA. Noise from trench plates would exceed daytime and nighttime noise standards and would be a significant impact. MM NOI-03 requires SCE to implement measures to reduce traffic noise generated from vehicles driving on trench plates. These measures include implementing traffic calming measures to reduce vehicle speeds, ensuring trench plates are appropriately secured, and utilizing trench plates of a low noise-generating surfacing and/or material. ***Vehicle noise on temporary trench plates would not exceed local noise standards and the impact would be less than significant with mitigation.***

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[1] Noise from a horizontal boring machine is approximately 73 dBA $L_{eq}$ at 70 feet (US DOT, 2008). The boring machine would be positioned within a 10- to 15-foot-deep sending pit. FHWA applies a 15-dBA reduction when buildings stand between receptors and a noise source (US DOT, 2006). CPUC is applying 15 dBA reduction to boring machine noise due to its subterranean position within the sending pit. Existing sounds walls along Pats Ranch Road would reduce noise levels by an additional 8 dBA.

**Nighttime Construction.** SCE does not anticipate nighttime construction; however, daytime construction activities may extend into evening and nighttime hours under unusual circumstances, such as extended hours to complete a concrete pour. Both the City of Jurupa Valley and City of Riverside limit daytime noise to 55 dBA ($L_{max}$). This limit would apply to construction that occurs between 7:00 pm and 10:00 pm. The nighttime noise limit of 45 dBA ($L_{max}$) would apply to construction in both cities between 10:00 pm and 7:00 am, except during June through September in Jurupa Valley, when construction hours may begin at 6:00 am.

A concrete pour would require a concrete pump, concrete mixer, and light tower. $L_{max}$ from the concrete pour would reach 81 dBA at 50 feet. Construction along the underground segment of the Revised Project could affect sensitive receptors as close as 30 feet from the road where noise levels would reach 85 dBA. Sound walls exist along much of the Revised Project underground transmission line alignment and would provide an approximate 8-dBA reduction. The noise would be reduced to 77 dBA where a sound wall exists. An acoustically well-insulated home can provide around 35 dBA of noise attenuation when windows and doors are kept closed, and a more typical unmodified modern dwelling provides approximately 25 dBA of noise level reduction (Wyle Laboratories, 1994). Indoor noise levels would range from 60 dBA to 52 dBA at 30 feet. Sleep disturbance commonly occurs when noise in sleeping quarters exceeds 45 dBA (US DOT, 2002). Noise from the concrete pour has the potential to exceed 45 dBA, depending on shielding and house construction. Noise would exceed the City's non-construction daytime and nighttime outdoor noise limits, resulting in a potentially significant impact if such activities occur outside of daytime construction hours.

SCE would implement EPE NOI-01, EPE NOI-02, EPE NOI-03, EPE NOI-04, and EPE NOI-05. EPE NOI-01 and EPE NOI-02 require SCE to establish a noise complaint hotline and respond to noise complaints, but these measures would not decrease noise levels. EPE NOI-05 would alert residents within 300 feet of after-hours construction to potential construction noise and allow them to plan accordingly; the measure would not reduce noise impacts. EPE NOI-03 requires SCE to implement noise reduction techniques including:

- Using portable noise barriers and/or parking non-noise-producing equipment in direct sound pathways
- Reducing backup alarm volume on equipment
- Moving stationary equipment away from receptors

EPE NOI-04 requires SCE to consider alternative construction techniques that would reduce noise and vibration at receptors. Mufflers cannot effectively muffle noise from concrete pumps or trucks, but acoustical panels or parked equipment may reduce noise by 8 dBA where adequate space exists to erect acoustical panels. Acoustical panels and parked equipment would reduce indoor noise levels to below 45 dBA. Construction noise would not likely disrupt sleep; however, the noise reduction measures would not adequately reduce outdoor noise to a less-than-significant level.

MM NOI-02 requires that noise reduction techniques described in EPEs NOI-03 and NOI-04 be implemented whenever construction occurs within 300 feet of receptors. MM NOI-02 also

requires SCE to plan all construction activities such that they are finished by 7:00 pm when activities occur within 300 feet of sensitive receptors, thereby avoiding exceedance of the outdoor noise threshold for non-construction time periods. ***Nighttime construction would not exceed local noise standards and would be less than significant with mitigation.***

**Construction Near Schools**

The Jurupa Valley General Plan states that outdoor noise levels at schools should not exceed 65 dBA CNEL in order to provide an appropriate classroom noise level. To maintain appropriate indoor classroom noise levels during instructional periods, the CPUC considers hourly noise levels that exceed 65 dBA ($L_{eq}$) outdoors at a classroom facility to be a significant impact.

Outdoor facilities of the Louis Vandermolen Fundamental Elementary School would be located approximately 50 feet from underground construction. Classrooms would be located approximately 140 feet away. A concrete sound wall exists along the perimeter of the school facing 68th Street. Pre-construction noise levels at the school on the north side of the sound wall are modeled to be approximately 59 dBA ($L_{eq}$), considering an 8-dBA reduction from the sound wall. Noise from underground transmission line construction would reach 74 dBA ($L_{eq}$) at the outdoor school facilities and 65 dBA ($L_{eq}$) outside the nearest classroom. If pile driving is required for underground construction, noise levels would increase by approximately 10 dBA ($L_{eq}$) to 77 dBA ($L_{eq}$). Pile driving noise would exceed 65 dBA ($L_{eq}$) if it were conducted within 1,500 feet of the school where the sound wall is not present. If the sound wall is present, pile driving within 560 feet of the school would exceed 65 dBA ($L_{eq}$). The impact would be significant.

SCE would implement EPE NOI-04 which states that alternative construction procedures would be used to reduce noise levels. SCE would use hydraulic jacks, shoring sleds and shields, or drilled piles during trenching and vault installation to avoid using pile drivers. ***Construction noise would not exceed local noise standards and the impact on schools would be less than significant with implementation of EPE NOI-04. No mitigation is required.***

**Etiwanda Marshalling Yard**

The Etiwanda Marshalling Yard would be used for material delivery and storage, equipment maintenance and storage, and construction crew meetings. The marshalling yard would be used daily throughout the 26-month construction period. SCE proposes construction on weekdays from 6:00 am to 6:00 pm during the months of June through September and from 7:00 am to 6:00 pm during the months of October through May.

Noise from marshalling yard activities has been modeled to be approximately 59 dBA at residences south of Cantu-Galleano Ranch Road. Noise from the marshalling yard is anticipated to reach 62 dBA at the Jurupa Valley High School baseball field. Classroom facilities would experience noise levels that are much lower because they are located substantially farther away (1,000 feet from the marshalling yard), and noise attenuates at approximately 6 dBA per doubling of distance. The modeled noise levels at residences and the high school would occur

during morning and evening hours when marshalling yard use is most active. Receptors would likely experience lower noise levels throughout the day. Construction noise would be conducted within the daytime construction hours identified by the City and would not exceed thresholds. ***Construction noise at the Etiwanda Marshalling Yard would not exceed local noise standards and the impact would be less than significant.***

### Operation and Maintenance

**230-kV Transmission Line**

Noise generated during operation and maintenance would occur during the inspection and maintenance of the transmission line (refer to Section 2.5: Operation and Maintenance of the Subsequent EIR).

Maintenance of the Revised Project would generate noise similar to existing noise sources in the project vicinity, including landscaping or traffic noise, and the use of power tools. Maintenance noise would last a few hours in a single location. Noise would cease when maintenance activities were completed. ***The impact of operation and maintenance noise would be less than significant.***

*Corona Noise*

Corona noise is a phenomenon periodically observed in the vicinity of high voltage transmission lines. Corona noise is caused by the loss of energy along the transmission line and can sometimes be heard as a humming or crackling sound. Audible corona noise is often correlated with annoyance and stress among the surrounding community. The 2013 RTRP EIR analyzed corona noise impacts from the overhead 230-kV transmission line and identified impacts to be less than significant.

A noise study (The RCH Group, 2017) of an existing SCE 220-kV transmission line[2] was conducted in July 2017. The results of the noise study supported the 2013 RTRP EIR conclusion, and indicated that corona noise from a 220-kV transmission line would not be audible at 50 feet (SCE, 2017b). The nearest residents are approximately 148 feet from the Revised Project overhead transmission line on Wineville Avenue. Corona noise would not be audible and would not exceed local noise ordinances. ***The impact of operational corona noise would be less than significant.***

**Distribution Line Relocations #7 and #8**

Distribution Line Relocations #7 and #8 would not change the operation of the line or maintenance currently required for the existing line. Operation and maintenance of Distribution

[2] The RTRP transmission line is proposed as a 220-kV transmission line with the capacity to conduct 230-kV, as described in Chapter 1: Introduction. The proposed RTRP 220-kV transmission line is anticipated to generate corona noise levels similar to the 220-kV transmission line observed in the CPUC's corona noise study.

Line Relocations #7 and #8 would not cause noise levels in excess of City of Riverside standards. ***No impact would occur.***

**Etiwanda Marshalling Yard**
The Etiwanda Marshalling Yard would not be used after project construction. ***No impact would occur.***

**Mitigation Measures: MM NOI-01, MM NOI-02, and MM NOI-03**
**Significance Level after Mitigation: Less than Significant**

| | Significance Determination |
|---|---|
| **Impact Noise-b: Would the Revised Project expose persons to or generate excessive (0.3 PPV or greater) groundborne vibration or groundborne noise levels?** | **Construction: *Less than Significant*** |
| | **Operation & Maintenance: *Less than Significant*** |

### Construction

Construction of the Revised Project would require the use of vibration-inducing heavy equipment. The vibration levels generated by typical heavy equipment is provided in Table 4.10-9.

Overhead transmission line construction would require a vertical drill rig to excavate foundation holes for new TSPs and LSTs. Underground transmission line construction would require jackhammers, backhoes, and dump trucks to excavate trenches and pits for the underground vaults and duct banks. Vibration from typical underground construction would reach approximately 0.076 PPV at 25 feet. The nearest receptors are located 30 feet from underground construction. Vibration from typical underground construction equipment would not damage structures.

Pile drivers may also be used to install underground vaults and duct banks. Pile drivers have the potential to cause the greatest vibration impacts at nearby structures. Receptors are located as close as 148 feet to the overhead transmission line construction area along Wineville Avenue, 30 feet from underground trenches along 68th Street, and 66 feet from construction activities at

**Table 4.10-9 Vibration Levels for Construction Equipment**

| Equipment | Vibration Level at 25 feet (PPV inches/second) |
|---|---|
| Pile Driver (Impact) | 0.644 |
| Large Bulldozer | 0.089 |
| Caisson Drilling (Drill Rig) | 0.089 |
| Loaded Trucks | 0.076 |
| Jackhammer | 0.035 |
| Small Bulldozer | 0.003 |

*Source: (FTA, 2006)*

Distribution Line Relocation #7. Pile driver vibration would reach 0.445 PPV at a distance of 30 feet and would exceed 0.3 PPV for 70 feet. Vibration levels from pile driving have the potential to damage older structures near underground construction. Construction vibration that results in cosmetic or structural damage to nearby structures would be a significant impact.

SCE would implement EPE NOI-04, which states that SCE would use alternate construction procedures, including hydraulic tools instead of pneumatic tools to reduce vibration impacts. Alternate shoring methods, such as drilled-piles, shoring sleds or shields, and hydraulic jacks can be used to shore trenches and vault excavations. These alternate methods would ensure that vibration levels do not exceed 0.3 PPV at the nearest receptor and that damage would not occur. ***Vibration impacts would be less than significant with implementation of EPE NOI-04. No mitigation is required.***

### Operation and Maintenance

Maintenance activities would be infrequent and would not generate excessive groundborne vibration or groundborne noise levels (refer to Section 2.5: Operation and Maintenance of the Subsequent EIR). Inspections and maintenance of the new transmission line may require using equipment similar to that used during construction, such as heavy trucks and bucket trucks, to inspect or repair facilities. Heavy equipment, such as pile drivers, excavators, and pavement breakers, are not anticipated to be required for maintenance of the Revised Project. Maximum groundborne vibration or groundborne noise levels from maintenance would not exceed thresholds. Thus, operation and maintenance of the Revised Project would not expose persons to excessive groundborne vibration or groundborne noise levels. ***Vibration impacts during operation and maintenance would be less than significant.***

**Mitigation Measures: None Required**

| | Significance Determination |
|---|---|
| **Impact Noise-c: Would the Revised Project result in a substantial (5 dBA CNEL or greater) permanent increase in ambient noise levels in the project vicinity above levels existing without the project?** | **Construction: *No Impact*** |
| | **Operation & Maintenance: *Less than Significant*** |

### Construction

Noise from construction activities would be temporary and periodic along the transmission line alignment for a total of approximately 26 months. Construction noise would cease after construction is completed. Construction noise would not result in a permanent increase in ambient noise levels. ***No impact would occur.***

### Operation and Maintenance

**230-kV Transmission Line**

Noise generated during operation and maintenance of the transmission line would be periodic and would occur during routine and as-needed inspections or maintenance activities (refer to Section 2.5: Operation and Maintenance of the Subsequent EIR). Equipment similar to the types used during construction, such as heavy trucks and bucket trucks, may be required to inspect or

repair facilities. Maintenance activities would last a few hours in a single location and would cease when maintenance activities were completed. Maintenance of the underground transmission line would not result in a permanent substantial increase in ambient noise levels. ***The impact of maintenance activities would be less than significant.***

*Corona Noise*

The Revised Project overhead transmission line along Wineville Avenue is not anticipated to generate audible corona noise. Underground transmission lines do not produce audible corona noise. Corona noise, if generated by the overhead transmission line during foul weather conditions, would likely be masked by the sound of rain. The nearest receptors are located 148 feet away from the transmission line. Corona noise would not permanently increase noise levels at the nearest receptor by 5 dBA or greater. ***The impact of operational corona noise would be less than significant.***

**Distribution Line Relocations #7 and #8**

Distribution Line Relocations #7 and #8 would not change the operation of the line or maintenance currently required. Noise from periodic maintenance at each location is anticipated to be similar to maintenance to the existing lines. The Distribution Line Relocations #7 and #8 would not result in a permanent substantial noise increase. ***No impact would occur.***

**Etiwanda Marshalling Yard**

The Etiwanda Marshalling Yard would not be used after project construction. ***No impact would occur.***

**Mitigation Measures: None Required**

| | Significance Determination |
|---|---|
| **Impact Noise-d: Would the Revised Project result in a substantial (10 dBA $L_{eq}$ or greater) temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?** | **Construction:** ***Significant and Unavoidable*** |
| | **Operation & Maintenance:** ***Less than Significant*** |

## Construction

**230-kV Transmission Line**

*Construction Near Residences*

**Overhead Transmission Line.** Construction of the Revised Project would last 26 months and require the use of heavy equipment that would generate noise levels substantially above ambient levels. Table 4.10-8 provides a list of equipment anticipated to be used for Revised Project construction and the associated noise levels. Construction of the overhead 230-kV transmission line segment on Wineville Avenue would require equipment such as backhoes, drill rigs, cranes, and compressors. Noise from overhead construction is anticipated to reach 77 dBA ($L_{eq}$) at a distance of 50 feet. The nearest receptors to overhead construction are residences along Wineville Avenue. Residences are located as close as 148 feet from overhead construction. Newer residential communities constructed along Wineville Avenue have a

permanent sound wall on the east side of Wineville Avenue that reduces roadway noise at adjoining residences. The sound wall would reduce construction noise at the residences by 8 dBA. There is one residence along Wineville Avenue that is not bordered by a sound wall. Table 4.10-10 provides the anticipated noise level at receptors with and without sound walls. Construction of the overhead transmission line is anticipated to reach 60 to 68 dBA ($L_{eq}$) at homes along Wineville Avenue. Existing average ambient noise levels along Wineville Avenue were measured as low as 63 dBA ($L_{eq}$); therefore, construction noise would not result in an increase of 10 dBA $L_{eq}$ or greater. ***The impact of temporary construction noise for the Revised Project overhead transmission line would be less than significant.***

**Helicopter Use.** Helicopters would be used during overhead transmission line stringing activities. Helicopter noise was previously analyzed in the 2013 Final EIR. The proposed activities have not changed. The distance to receptors has increased in the Revised Project area. Helicopters are anticipated to generate approximately 90 dBA at 50 feet. Receptors are located at 148 feet from the Revised Project transmission line alignment. Helicopters would not operate closer than 200 feet from receptors (Riverside Public Utilities, 2012). Noise levels at receptors would be approximately 78 dBA ($L_{max}$). Helicopters would not remain at a single location for more than several minutes; therefore, hourly $L_{eq}$ levels are anticipated to be approximately 6 dBA less or 72 dBA. Helicopter-assisted construction would occur during City-approved construction timeframes. Helicopters would not increase noise levels by more than 10 dBA. ***The impact of temporary construction noise from helicopter use would be less than significant.***

**Underground Transmission Line (Open Trench).** Construction of the underground vaults and duct banks would require the use of heavy equipment, such as front-end loaders, excavators, concrete saws, cranes, and dump trucks, in addition to other equipment. Pile driving may be required along and throughout the underground alignment for installation of duct banks and at each vault location for reinforcement of shoring walls. Underground construction would occur as close as 30 feet from homes along 68th Street and Pats Ranch Road. Hourly noise levels at residences would reach 78 dBA ($L_{eq}$) where a sound wall is present and as high as 87 dBA ($L_{eq}$) where a sound wall does not exist. If pile drivers are required for underground construction, hourly noise levels at nearby residences would increase to 90 dBA ($L_{eq}$) where a sound wall is present and 98 dBA ($L_{eq}$) where a sound wall does not exist. Noise at residences would exceed pre-construction ambient noise levels by more than 10 dBA, resulting in a significant impact.

SCE would implement EPE NOI-01, EPE NOI-02, EPE NOI-03, and EPE NOI-04. Complaint reporting and investigation procedures would help to alert SCE to public concerns about construction noise but would not reduce noise levels at receptors. Adjusting back-up alarms and limiting equipment idling would help to reduce noise levels but would not adequately reduce noise from all equipment. Underground construction would occur within city streets, which would limit the amount of space for positioning equipment farther away from receptors. Use of mufflers, portable barriers, and acoustical panels would reduce construction noise by 8 to 10 dBA; however, noise increases would still be significant. MM NOI-04 requires SCE to

## Table 4.10-10 Revised Project Predicted Construction Noise Increases

| Location | Pre-Project Daytime $L_{eq}$ Ambient Noise at Receptors (dBA) [a] | Receptor Nearest to Construction [b] | Construction Noise Increase [a c] | Temporary Noise Increase over 10 dBA? |
|---|---|---|---|---|
| Wineville Avenue (residences without sound wall) | 63 | Residences on Wineville Avenue (148 feet from overhead construction) | 5 | No |
| Wineville Avenue (residences with sound wall) | 55 | Residences on Wineville Avenue (148 feet from overhead construction) | 5 | No |
| Pats Ranch Road (North of Limonite Avenue) | 52 | Residences in APV community east of Pats Ranch Road (1,300 feet from overhead construction) | 0 | No |
| Limonite and Pats Ranch Road | 52 | Residences on northeast corner of Pats Ranch Road and Limonite Avenue (110 feet from underground construction) | 14 | Yes |
| Pats Ranch Road (South of Limonite Avenue) [d] | 52 | Residences on Pats Ranch Road (45 feet from underground construction) | 24 | Yes |
| 68th Street near Carnelian Street | 59 | Residences on 68th Street (35 feet from underground construction) | 19 | Yes |
| | | Louis Vandermolen Fundamental Elementary School (50 feet from underground construction) | 16 | Yes |
| 68th Street near Dana Avenue | 47 | Residences on 68th Street (30 feet from underground construction) | 40 | Yes |
| Santa Ana River Trail | 52 | Residences at the terminus of Bradford Street (200 feet from underground construction) | 15 | Yes |
| Jurupa Valley High School [e] | 55 | Jurupa Valley High School (500 feet from Etiwanda Marshalling Yard) | 7 | No |

| Location | Pre-Project Daytime $L_{eq}$ Ambient Noise at Receptors (dBA) [a] | Receptor Nearest to Construction [b] | Construction Noise Increase [a c] | Temporary Noise Increase over 10 dBA? |
|---|---|---|---|---|

Notes:

[a] Existing sound walls along Wineville Avenue, Pats Ranch Road and 68th Avenue provide sound shielding of approximately 8 dBA. The sound walls have been factored into the pre-construction ambient noise levels for locations where sound walls exist. Sounds walls would reduce construction noise from ground-based equipment and has been factored into the predicted construction noise level at receptors. A sound wall is not present along 68th Avenue east of Wineville Avenue. The predicted noise at homes near Dana Avenue reflects construction noise without sound wall shielding.

[b] There are no sensitive receptors within 2,300 feet of Distribution Line Relocation #8. Noise impacts are not anticipated from construction at Distribution Line Relocation #8.

[c] Predicted construction noise increases are based on noise levels provided in **Error! Reference source not found.**.

[d] Existing ambient noise level along Pats Ranch Road were not measured during the 2015 community noise survey. The ambient noise level is estimated based on area land use and nearby noise measurements.

[e] Ambient noise levels were not measured near the Jurupa Valley High School. The ambient noise level is estimated between 55 and 65 dBA ($L_{eq}$) during daytime hours based on nearby land uses.

*Source: (City of Jurupa Valley, 2017b; SCE, 2017b; US DOT, 2008; Sengpielaudio, no date)*

notify residents of construction prior to initiating construction. Notices will include tips on reducing noise intrusion, such as closing windows facing planned construction, and will include the noise complaint hotline telephone number. Even with the implementation of EPEs and MM NOI-04, impacts from underground construction would remain significant because construction noise would still increase ambient noise levels at receptors by more than 10 dBA. ***The impact of temporary construction noise from the Revised Project underground transmission line would be significant and unavoidable.***

**Jack and Bore (Trenchless Construction).** Jack and bore construction may be required for trenchless construction of underground duct banks across Limonite Avenue and would generate persistent noise during boring. Boring noise at the nearest receptor is anticipated to be approximately 50 dBA $L_{eq}$ and would not substantially increase noise levels at nearby residences. ***Noise from jack and bore operations would be less than significant.***

**Temporary Trench Plates.** Construction of the underground transmission line is anticipated to take approximately 18 months. Excavated underground trenches may be covered using steel trench plates until the transmission line is fully installed. Traffic driving on trench plates has the potential to substantially raise noise levels in the vicinity of underground trenches, depending on trench plate type or if plates are not properly secured. Noise from traffic driving across skid-resistant metal trench plates has been observed at 79 dBA $L_{max}$ at a distance of 50 feet (Panorama Environmental, Inc., 2018). Sound walls are present along Pats Ranch Road and a segment of 68th Street and would reduce trench plate noise by 8 dBA. Residences occur adjacent to trench locations where sound walls do not currently exist. The impact from traffic on trench plates could be significant. EPE NOI-01 requires SCE to establish a complaint telephone hot-line and EPE NOI-02 requires SCE to investigate noise complaints. If investigation of the complaint determines that trench plates are the source of noise, MM NOI-03 would be required. MM NOI-3 requires SCE to resolve trench plate noise complaints by implementing traffic calming measures, ensuring trench plates are properly secured, and utilizing trench plates of a low noise-generating surfacing and/or material. ***Vehicle noise on temporary trench plates would be less than significant with mitigation.***

***Construction Near Schools***

As discussed under Impact Noise-a above, outdoor facilities of the Louis Vandermolen Fundamental Elementary School are located 50 feet from underground construction and classrooms are located 140 feet away. Pre-construction noise levels at the school are anticipated to be approximately 59 dBA ($L_{eq}$) when considering noise-reduction afforded by the perimeter sound wall of the school. Table 4.10-10 summarizes existing and anticipated construction noise levels at the school. Underground construction using typical construction equipment (i.e., not pile drivers) would generate noise up to 74 dBA ($L_{eq}$) at outdoor school facilities and 65 dBA ($L_{eq}$) at the nearest classroom. Construction noise at classrooms would not increase by more than 10 dBA. ***The impact of typical construction equipment noise on receptors at schools would be less than significant.***

If pile driving is required for underground construction, anticipated construction noise levels would increase by approximately 15 dBA. Noise levels at the classroom would increase approximately 22 dBA compared to pre-construction noise levels, which would be a significant impact. SCE would implement EPE NOI-04, which states that alternative construction procedures would be used to reduce noise levels. SCE would use hydraulic jacks, shoring sleds and shields, or drilled piles during trenching and vault installation to avoid using pile drivers. ***The impact of pile drivers on receptors at schools would be less than significant with implementation of EPE NOI-04. No mitigation is required.***

**Distribution Line Relocations #7 and #8**

Distribution Line Relocations #7 and #8 would require equipment similar to equipment required for construction of the underground 230-kV transmission line. Construction at each location would last only a few days and would cease after construction is complete. The nearest receptor is located 200 feet from where underground construction would occur at Distribution Line Relocation #7. The closest receptor to Distribution Line Relocation #8 is located more than 2,300 feet north of the construction area, on the north side of the Santa Ana River. Construction at Distribution Line Relocation #7 would generate noise levels of approximately 67 dBA ($L_{eq}$), and would increase noise levels by more than 10 dBA at the closest receptor (Table 4.10-10). If pile driving is required to install underground vaults, construction noise would increase by an additional 15 dBA. Impacts from construction at Distribution Line Relocation #7 would be significant. SCE would implement EPE NOI-03, which requires adjusting back-up alarms and repositioning equipment. The measure would help to reduce noise levels but it would not reduce noise from pile drivers, if they are necessary. EPE NOI-04 would be implemented, which requires the use of portable barriers when impact equipment is used, and mufflers, acoustical lining, or acoustical panels for other equipment with internal combustion engines. Barriers and equipment positioning would reduce noise from general construction equipment by 8 to 10 dBA. EPE NOI-04 also states that SCE would use alternate methods to shore trenches and vault locations in order to reduce noise and vibration at nearby receptors. Alternate methods such as drilled piles, shoring sleds and shields, and hydraulic jacks would be used to shore walls instead of using a pile driver. ***The impact of temporary construction noise at the Distribution Line Relocations# 7 and #8 would be less than significant. No mitigation is required.***

**Etiwanda Marshalling Yard**

Activities at the Etiwanda Marshalling Yard include staging, storing, and assembling equipment; refueling vehicles and construction equipment; and construction worker tailboard meetings. Stationary equipment, such as generators or compressors may be used at the Etiwanda Marshalling Yard and would significantly increase noise within the marshalling yard. Homes are being constructed on the south side of Cantu-Galleano Ranch Road. The Jurupa Valley High School is located approximately 500 feet away. Ambient noise levels were not measured near the marshalling yard; however, noise levels are anticipated to be between 55 and 65 dBA $L_{eq}$ during daytime hours based on land uses near the marshalling yard. Noise from generators at the Etiwanda Marshalling Yard would be approximately 59 dBA ($L_{eq}$) at

residences that border Cantu-Galleano Ranch Road and 50 dBA ($L_{eq}$) at the baseball fields. Noise levels would not significantly increase. ***The impact of temporary construction noise at the Etiwanda Marshalling Yard would be less than significant.***

### Operation and Maintenance

Inspections and maintenance of the new transmission line may require using equipment similar to that used during construction to inspect or repair facilities or maintain vegetation clearances. Noise generated by maintenance activities would be short-term and would be similar to existing noise sources in the project vicinity, including the use of heavy trucks, power tools, and vegetation maintenance equipment. Noise from maintenance activities would cease after maintenance activities were completed. ***The impact of operation and maintenance noise would be less than significant.***

**Mitigation Measures: MM NOI-03 and MM NOI-04**

**Significance after Mitigation: Significant and Unavoidable**

## 4.10.9 Revised Project Mitigation Measures

### MM NOI-01: High-Noise-Generating Equipment

SCE shall implement typical noise-reducing construction practices as identified in EPE NOI-03 and EPE NOI-4 to reduce noise levels when working within 100 feet of receptors. If high-noise-generating equipment must be used, SCE shall limit the use of high-noise-generating equipment to between the hours of 9:00 am and 3:00 pm when constructing within 100 feet of receptors in the City of Jurupa Valley. High-noise-generating equipment shall be defined as any piece of equipment that generates a maximum ($L_{max}$) noise level of 85 dBA or greater at a reference distance of 50 feet. The following equipment have been identified as high-noise-generating equipment:

- Clam shovel
- Concrete saw
- Jackhammer
- Hydra break ram
- Pile driver
- Vacuum excavator

**Applicable Locations:** All Revised Project locations within the City of Jurupa Valley where high-noise-generating equipment is used

**Performance Standards and Timing:**

- **Prior to Construction:** N/A
- **During Construction:** Limit high-noise-generating equipment use in Jurupa Valley to between 9:00 am and 3:00 pm
- **Following Construction:** N/A

### MM NOI-02: Additional Noise Reduction

SCE shall plan all construction activities within 300 feet of receptors, including concrete pours, such that they are completed by 6:00 pm in Jurupa Valley and 7:00 pm in Riverside to avoid conflicts with local jurisdiction noise ordinances. SCE shall implement all available noise reduction techniques identified in EPEs NOI-03 and NOI-04 in construction areas within 300 feet of sensitive receptors (residences and schools) to reduce noise levels at the receptors. Construction meetings, site setup or cleanup activities that occur outside of City-identified construction hours must meet the noise

| |
|---|
| ordinance limits (measured at receptors) of 55 dBA between 7:00 pm and 10:00 pm and 45 dBA between 10:00 pm and 7:00 am. |
| **Applicable Locations:** All Revised Project locations within 300 feet of a sensitive receptor |
| **Performance Standards and Timing:**<br>• **Prior to Construction:** N/A<br>• **During Construction:** Apply noise reduction measures<br>• **Following Construction:** N/A |

| **MM NOI-03: Trench Plate Noise Reduction** |
|---|
| SCE shall implement techniques to reduce noise generated by vehicle traffic over temporary trench plates. These techniques shall include one or more of the following, as necessary:<br>• Implement traffic calming measures to reduce vehicle speeds<br>• Ensure trench plates are appropriately secured<br>• Utilize trench plates of a low noise-generating material |
| **Applicable Locations:** All Revised Project locations where temporary trench plates are used |
| **Performance Standards and Timing:**<br>• **Prior to Construction:** N/A<br>• **During Construction:** Apply trench plate noise reduction measures<br>• **Following Construction:** N/A |

| **MM NOI-04: Construction Notification** |
|---|
| SCE shall provide notice by mail at least 1 week prior to construction activities to all sensitive receptors and residences within 500 feet of all construction. The announcement shall state where and when project construction will occur and provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. Notices shall also include the phone number for the noise complaint telephone hot-line described in EPE NOI-1. Notified residents may request alternative lodging for the days that active construction is occurring adjacent to their residence; alternative lodging shall consist of a standard room at a hotel located within 6 miles of the affected residence or as close as feasible. |
| **Applicable Locations:** Sensitive receptors and residences within 500 feet of construction |
| **Performance Standards and Timing:**<br>• **Prior to Construction:** Post and mail notices at least 1 week prior to construction activities<br>• **During Construction:** N/A<br>• **Following Construction:** N/A |

## 4.10.10 Alternatives Setting

### Environmental Setting

#### Ambient Noise Levels

Baseline ambient noise levels were measured at 68 dBA along Wineville Avenue (SCE, 2017b). Community noise levels along other alternative routes are expected to be similar. Common contributors to the ambient noise level include agricultural and construction operations, as well as vehicle traffic on area roadways and I-15.

**Sensitive Receptors**

Sensitive receptors along the alternative alignments consist of one school and numerous residences. Table 4.10-11 identifies the sensitive receptors within 1,000 feet of each alternative. Sensitive receptors are also shown in Table 4.10-11. The only noise sensitive land uses within 1,000 feet of Alternative 3 include a residential community on the opposite side of I-15. Noise from Alternative 3 would not be perceived on the opposite side of the I-15 highway due to the noise of intervening traffic.

The Little Steps Montessori Preschool is the only school located within 1,000 feet of the alternative alignments, and there are no hospitals or religious facilities within 1,000 feet of the alternative routes. Many residences within newly constructed communities, including along Pats Ranch Road and Wineville Avenue, are bordered by an 8- to 10-foot sound wall facing the street. Shorter perimeter walls (approximately 4 to 5 feet) exist at many of the older residences that border Wineville Avenue south of Bellegrave Avenue. Walls that break the line of sight between a receptor and the noise source would be expected to reduce noise levels by approximately 8 dBA. Shorter walls would not be expected to provide noticeable noise reduction.

### Table 4.10-11 Sensitive Receptors near Alternative Alignments

| Alternative [a] | Receptor Type | Distance from Alternative Alignment |
|---|---|---|
| Alternative 1 | Residence (numerous) | 30 feet |
| Alternative 2 | Residence (numerous) | 30 feet |
| | School (Little Steps Montessori Preschool) | 600 feet |
| Alternative 4 | Residence (numerous) | 78 feet |

Note:

[a] There are no receptors located within 1,000 feet of Alternative 3. The nearest receptors are residences located approximately 1,400 feet away, on Pats Ranch Road.

*Source: (Google, Inc., 2017a)*

## Regulatory Setting

Regulatory settings for noise under Alternatives 1 through 4 would be similar to the revised project, and would include the federal, state, and Jurupa Valley policies and regulations identified for the revised project (refer to Section 4.10.5: Regulatory Setting). Regulations that pertain to the City or County of Riverside are not applicable because none of the alternatives considered in this analysis occur in the City or unincorporated County of Riverside.

## 4.10.11 Alternatives Impact Analysis

### Alternatives Analysis Scope

The following analysis considers only the environmental impacts resulting from construction and operation of each alternative alignment segment. Any specific alternative replaces only a portion of the Revised Project and would require combination with the remaining unaffected segments of the Revised Project to form a complete alternative route through Jurupa Valley. Impacts resulting from construction and operation of the additional Revised Project elements necessary to form a complete alternative route are not considered in this section. A discussion of the environmental impacts resulting from construction and operation of the complete alternative route, comprised of each alternative alignment plus the unaffected Revised Project elements, is provided in Chapter 6: Comparison of Alternatives.

### Impacts Avoided by the Alternatives

Alternative 3 is located approximately 1,400 feet away from receptors in Jurupa Valley. Eastvale residents are located approximately 500 feet from the Alternative 3 riser poles. Construction noise typically attenuates within 1,000 feet of work activities and would not be audible at Jurupa Valley residents due to distance. Construction is separated from Eastvale residents by the I-15 freeway, two sound barriers, and a sloping hill along the west side of I-15. Construction noise from Alternative 3 would not impact Eastvale residents due to distance and noise-reducing barriers. Noise from construction of Alternative 3 would not exceed local noise standards, nor would it significantly increase noise levels during construction or operation of the project. All construction-related vibration would dissipate before reaching receptors. Alternative 3 is not located within 2 miles of any airport. Noise impacts related to Alternative 3 are not discussed further.

Alternatives 1, 2, and 4 would be constructed in the same general project area as the revised project, and would have no impact on the following three CEQA Appendix G significance criteria:

a. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
e. For a project located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport of public use airport, expose people residing or working in the project corridor to excessive noise levels?
f. For a project within the vicinity of a private airstrip, expose people residing or working in the project corridor to excessive noise levels?

Alternatives 1, 2, and 4 involve construction of underground transmission lines. The underground lines would not create a permanent noise source. The alternatives are not located within the vicinity of an airport or airstrip. The Ontario International Airport is the nearest airport to the alternatives, located 4 miles northwest of the interconnection point with the Mira Loma – Vista #1 230-kV Transmission Line. Air traffic influences the baseline noise conditions in the project area, but would not expose workers to excessive noise levels. Impacts associated with these significance criteria are not discussed further.

### Alternative 1 and 2 Environmental Impacts and Mitigation Measures

Alternative 1 and Alternative 2 involve construction of two riser poles at the northwest corner of Wineville Avenue and Cantu-Galleano Ranch Road. The Alternative 1 underground transmission line would be located within Wineville Avenue, Bellegrave Avenue, and Pats Ranch Road. The Alternative 2 underground transmission line would be located within Wineville Avenue and Limonite Avenue. Both Alternative 1 and Alternative 2 would meet the Revised Project underground alignment at the intersection of Limonite Avenue and Pats Ranch Road.

| | Significance Determination |
|---|---|
| **Impact Noise-a: Would Alternative 1 and 2 expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?** | **Construction:** ***Less than Significant with Mitigation*** |
| | **Operation & Maintenance:** ***Less than Significant*** |

**Construction**

***Residences***

Construction of Alternative 1 and 2 would require concrete saws, excavators, and other earth-moving equipment. Receptors along the underground alignment would be exposed to construction noise for up to 3 weeks (7 days per vault), excluding weekends, during vault installation, and for shorter time periods during trenching. Most construction would occur during the daytime construction hours identified in the Jurupa Valley noise ordinance. However, concrete pours or curing activities may extend beyond the construction hours identified by the City of Jurupa Valley. Construction activities, such as pavement breaking or installation of vaults, may require the use of high-noise-generating equipment (refer to Table 4.10-8 in Section 4.10: Noise). During these activities, noise levels at the closest receptors would be approximately 98 dBA (Leq) and would cause a significant impact. SCE would implement EPEs NOI-01 (Noise Complaint Reporting), EPE NOI-02 (Noise Complaint Investigation), EPE NOI-03 (Construction Practices), EPE NOI-04 (Noise Reduction Practices), and EPE NOI-05 (After-Hours Construction), but noise levels at receptors would remain significant. Implementation of MM NOI-01 and MM NOI-02 would reduce impacts by limiting the use of high-noise-generating equipment to the hours specified in the Jurupa Valley General Plan and requiring SCE to schedule activities such that they can be completed during construction hours. ***Impacts would be less than significant with mitigation.***

Trench plates would be used to close up the underground trenches prior to conduit installation, backfilling, and paving. Trench plate noise has the potential to increase noise levels and cause a significant impact. EPEs NOI-01 (Noise Complaint Reporting) and EPE NOI-02 (Noise Complaint Investigation) would be implemented and SCE would investigate noise complaints. If investigation of the complaint determines that trench plates are the source of noise, MM NOI-03 would be required and would resolve trench plate noise complaints by implementing traffic calming measures, ensuring trench plates are properly secured, and/or utilizing trench plates of a low noise-generating surfacing and/or material. ***Vehicle noise on temporary trench plates would be less than significant with mitigation.***

*Schools*

One school is located approximately 600 feet from Alternative 2 (Table 4.10-11). Construction noise levels would not exceed the recommended outdoor noise level (65 dBA 1-hour $L_{eq}$) unless a pile driver is required for underground construction. A pile driver would generate 72 dBA at 600 feet and a significant impact would occur. Implementation of EPE NOI-03 (Construction Practices) would ensure that SCE utilize alternative construction methods to reduce construction noise. ***The impact would be less than significant.***

**Operation and Maintenance**

The underground transmission line would not produce operational noise. Periodic maintenance of the underground transmission line would be conducted at the same frequency as the underground segment of the Revised Project (refer to Section 4.10: Noise, Impact Noise-a). ***The impact would be less than significant.***

**Mitigation Measures: MM NOI-01, MM NOI-02, and MM NOI-03 (Refer to Section 4.10.9: Revised Project Mitigation Measures)**

**Significance after Mitigation: Less than Significant**

| | Significance Determination |
|---|---|
| **Impact Noise-b: Would Alternative 1 and 2 expose persons to or generate excessive groundborne vibration or groundborne noise levels?** | **Construction: *Less than Significant*** |
| | **Operation & Maintenance: *Less than Significant*** |

**Construction**

Alternative 1 and 2 underground construction would be similar to impacts described for the Revised Project. Residences along Alternative 1 occur as close as 30 feet from the underground alignment. Pile driver vibration would reach 0.445 PPV at a distance of 30 feet and would exceed 0.3 PPV for 70 feet. Vibration impacts from pile drivers would be similar to impacts described in Section 4.10: Noise, Impact Noise-b, and could result in cosmetic or structural damage to structures located within 70 feet of underground construction, resulting in a significant impact. SCE would implement EPE NOI-04 (Noise Reduction Practices) to reduce impacts by utilizing alternate construction methods, such as drilled piles, shoring shields and hydraulic jacks, ensuring vibration levels would not exceed 0.03 PPV. ***The impact would be less than significant.***

**Operation and Maintenance**

Alternative 1 and 2 would have the same operation and maintenance impacts as described for the Revised Project. Periodic maintenance of underground vaults may result in minor vibration that would likely dissipate prior to reaching structures. No damage or nuisance is anticipated. ***The impact would be less than significant.***

**Mitigation Measures: None Required**

| | Significance Determination |
|---|---|
| **Impact Noise-d: Would Alternative 1 and 2 result in a substantial (10 dBA $L_{eq}$ or greater) temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?** | **Construction:** ***Significant and Unavoidable*** |
| | **Operation & Maintenance:** ***Less than Significant*** |

**Construction**

***Residences***

Construction of Alternative 1 and 2 would require the use of heavy equipment near residents along the alignment (refer to Section 4.10.8, Impact Noise-d). Specifically, pile driving may be required along and throughout the underground alignment at each vault location for reinforcement of shoring walls. Underground construction would occur as close as 30 feet from residences. Construction noise would temporarily increase ambient noise levels by 12 to 17 dBA, and would exceed the threshold for a substantial temporary noise increase (10 dBA hourly $L_{eq}$). The impact would be significant. SCE would implement EPEs NOI-01 (Noise Complaint Reporting), NOI-02 (Noise Complaint Investigation), NOI-03 (Construction Practices), and NOI-04 (Noise Reduction Practices). Implementation of MM NOI-04 would also be required to ensure that residents are notified of construction before it commences. Even with the implementation of EPEs and MM NOI-04, impacts from underground construction would remain significant because construction noise would still increase ambient noise levels at receptors by more than 10 dBA. ***The impact would be significant and unavoidable.***

Trench plates would be used to temporarily close the underground trenches and may generate noise levels that cause a significant impact. EPEs NOI-01 (Noise Complaint Reporting) and EPE NOI-02 (Noise Complaint Investigation) would be implemented and SCE would investigate noise complaints. If trench plates are the source of noise, MM NOI-03 would be required and would resolve trench plate noise complaints by implementing traffic calming measures, ensuring trench plates are properly secured, and/or utilizing trench plates of a low noise-generating surfacing and/or material. ***Vehicle noise on temporary trench plates would be less than significant with mitigation.***

***Schools***

Alternative 2 construction noise levels at Little Steps Montessori Preschool are anticipated to reach 72 dBA if pile drivers are used (refer to Impact Noise-a above). Construction noise levels would not exceed 10 dBA over ambient noise levels, which are estimated to be approximately 65 dBA. ***The impact would be less than significant.***

**Operation and Maintenance**

The underground transmission line would not produce operational noise. Periodic maintenance of the underground transmission line would be conducted at the same frequency as the underground segment of the Revised Project. ***The impact would be less than significant.***

**Mitigation Measures: MM NOI-03 and MM NOI-04 (Refer to Section 4.10.9: Revised Project Mitigation Measures)**

**Significance after Mitigation: Significant and Unavoidable**

### Alternative 4 Environmental Impacts and Mitigation Measures

Alternative 4 involves construction of a segment of underground transmission line that follows Wineville Avenue and Landon Drive. Two riser poles would be constructed at either end of the underground segment.

| | Significance Determination |
|---|---|
| **Impact Noise-a: Would Alternative 4 expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?** | **Construction: *Less than Significant with Mitigation*** |
| | **Operation & Maintenance: *Less than Significant*** |

**Construction, Operation and Maintenance**

Receptors would be located as close as 78 feet from Alternative 4 underground construction and would experience construction noise on weekdays for up to 3 weeks during vault installation (7 days per vault). The majority of construction noise would occur during the construction hours identified by the City of Jurupa Valley. SCE has identified activities related to concrete pours that may extend beyond the City-identified construction hours. The City of Jurupa Valley General Plan identifies a narrower timeframe for high-noise-generating equipment (refer to Table 4.10-8). SCE has not identified limited hours for high-noise-generating equipment. Construction, including the use of high-noise-generating equipment, outside of their respective City-identified construction timeframes would be a significant impact. SCE would implement EPEs NOI-01 (Noise Complaint Reporting), EPE NOI-02 (Noise Complaint Investigation), EPE NOI-03 (Construction Practices), EPE NOI-04 (Noise Reduction Practices), and EPE NOI-05 (After-Hours Construction), but noise levels at receptors would remain significant. Implementation of MM NOI-01 and MM NOI-02 would reduce impacts by limiting the use of high-noise-generating equipment to the hours specified in the Jurupa Valley General Plan and requiring SCE to schedule activities such that they can be completed during construction hours. ***Impacts would be less than significant with mitigation.***

Trench plates would be used to temporarily close duct bank trenches on Wineville Avenue and would have similar impacts as those described for the Revised Project (refer to Section 4.10.8, Impact Noise-a). EPEs NOI-01 (Noise Complaint Reporting) and EPE NOI-02 (Noise Complaint Investigation) would ensure that SCE investigate noise complaints. If trench plates are the cause of complaints, MM NOI-03 would be required and would resolve trench plate noise complaints by implementing traffic calming measures, ensuring trench plates are properly secured, and/or utilizing trench plates of a low noise-generating surfacing and/or material. ***Vehicle noise on temporary trench plates would be less than significant with mitigation.***

**Mitigation Measures: MM NOI-01, MM NOI-02, and MM NOI-03 (Refer to Section 4.10.9: Revised Project Mitigation Measures)**

**Significance after Mitigation: Less than Significant**

| | Significance Determination |
|---|---|
| **Impact Noise-b: Would Alternative 4 expose persons to or generate excessive (0.3 PPV or greater) groundborne vibration or groundborne noise levels?** | **Construction: *Less than Significant*** |
| | **Operation & Maintenance: *No Impact*** |

**Construction**

Alternative 4 underground construction would have less impact than Alternatives 1 and 2. Vibration impacts from pile drivers, if necessary for construction, have the potential to cause damage to structures within 70 feet of underground construction. The closest receptors are located 78 feet away. Vibration levels would not exceed thresholds and no mitigation is required. ***The impact would be less than significant.***

**Operation and Maintenance**

Periodic maintenance of underground vaults is unlikely to generate vibration levels that would be felt at receptors located 78 feet away. ***No impact would occur.***

**Mitigation Measures: None Required**

| | Significance Determination |
|---|---|
| **Impact Noise-d: Would Alternative 4 result in a substantial (10 dBA $L_{eq}$ or greater) temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?** | **Construction: *Less than Significant with Mitigation*** |
| | **Operation & Maintenance: *Less than Significant*** |

**Construction**

Construction of Alternative 4 would involve similar construction activities as Alternative 1 along Wineville Avenue. Average ambient noise levels near the Alternative 4 alignment are approximately 65 dBA $L_{eq}$ (refer to Table 4.10-2). Noise that exceeds 75 dBA $L_{eq}$ would be considered a significant impact.

Construction would require the use of heavy equipment and pile driving may be required along and throughout the underground alignment at each vault location for reinforcement of shoring walls. Many residences along Wineville Avenue between Cantu-Galleano Ranch Road and Landon Drive are bordered by a sound wall which affords approximately 8-dBA noise reduction. The nearest receptor (78 feet from underground construction) is not bordered by a wall. Hourly construction noise levels would reach up to 79 dBA ($L_{eq}$) at the nearest receptor. Noise levels would be approximately 15 dBA higher if a pile driver is used. Construction noise would exceed ambient noise levels by more than 10 dBA and would be a significant impact. SCE would implement EPE NOI-01 (Noise Complaint Reporting), EPE NOI-02 (Noise Complaint Investigation), EPE NOI-03 (Construction Practices), and EPE NOI-04 (Noise Reduction Practices) to reduce impacts. EPE NOI-03 requires SCE utilize alternative

construction methods, such as drilled piles, shoring shields or sleds, and hydraulic jacks instead of pile drivers, to reduce noise levels at receptors. EPE NOI-03 also requires SCE to erect noise barriers or park non-noise-producing equipment in direct sound pathways to reduce noise at the receptor. Barriers required by EPE NOI-03 would reduce noise levels by approximately 8 dBA. The noise level would not increase more than 10 dBA with the implementation of EPE NOI-03. ***The impact would be less than significant.***

Trench plates would be used to temporarily close duct bank trenches on Wineville Avenue. Potential noise impacts would be similar as those described for the Revised Project (refer to Section 4.10.8, Impact Noise-b). EPEs NOI-01 (Noise Complaint Reporting) and EPE NOI-02 (Noise Complaint Investigation) would ensure that SCE investigate noise complaints. If trench plates are the cause of complaints, MM NOI-03 would be required and would resolve trench plate noise complaints by implementing traffic calming measures, ensuring trench plates are properly secured, and/or utilizing trench plates of a low noise-generating surfacing and/or material. ***Vehicle noise on temporary trench plates would be less than significant with mitigation.***

**Operation and Maintenance**

Operation and maintenance of Alternative 4 would have the same impacts described for Alternatives 1 and 2. Refer to Impact Noise-b of Alternative 1, above.

**Mitigation Measures: MM NOI-03 (Refer to Section 4.10.9: Revised Project Mitigation Measures)**
**Significance after Mitigation: Less than Significant**

## 4.10.12 No Project Alternative Impact Analysis

Construction of battery storage would generate noise in the vicinity of sensitive receptors; however, battery storage would most likely be added to an existing SCE or RPU substation, which would not be located in proximity to sensitive receptors. Expanded facilities are expected to be constructed during the daytime hours that the City of Riverside has deemed construction to be acceptable. Construction may involve vibration-generating equipment. Due to the likely distance to nearby receptors the impact would likely be less than significant. ***Impacts from construction of the No Project Alternative would be less than significant.***

Operation and maintenance of the battery storage facility would not generate any noise. Additional use of RERC facilities would be similar to baseline noise conditions. ***No impact would occur.***

## 4.10.13 References

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