

1 **4.10 Noise and Vibration**
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3 This section describes the environmental and regulatory setting and discusses impacts associated
4 with the construction and operation of the Mesa 500-kV Substation Project (proposed project)
5 proposed by Southern California Edison Company (SCE, or the applicant) with respect to noise and
6 vibration.
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8 **4.10.1 Environmental Setting**
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10 **4.10.1.1 Noise**
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12 **Acoustical Definitions**

13 Table 4.10-1 provides the definitions of acoustical terms used to establish the environmental
14 setting and analyze changes in noise caused by the proposed project.
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Table 4.10-1 Definition of Acoustical Terms

Term	Definition
Noise	Unwanted sound, which occurs as a rapid fluctuation of air pressure above and below the atmospheric pressure. There are two important characteristics of noise: frequency and loudness. The number of pressure variations per second is called the <i>frequency</i> of sound, and is measured in Hertz (Hz). The higher the frequency, the more high-pitched a sound is perceived to be. Loudness is measured in decibels, which are defined further below.
Decibel	Noise is measured in terms of sound-pressure level using units called decibels (dB). Since the range of intensities that the human ear can detect is large, the scale is based in multiples of 10, the logarithmic scale. Each interval of 10 dB indicates a sound energy 10 times greater. Each interval is perceived by the human ear as being roughly twice as loud.
A-weighted decibel (dBA)	The most common system used by regulatory bodies for noise measurement is the A-weighted decibel (dBA) scale. This scale measures sound as an approximate to how a person perceives or hears sound. A-weighted sound levels are typically measured or presented as the equivalent sound pressure level (L_{eq}).
Equivalent sound pressure level (L_{eq})	The average noise level, on an equal energy basis for a stated period of time. Sound levels are usually best represented by an equivalent level over a given time period (L_{eq}) or by an average level occurring over a 24-hour day-night period (L_{dn}).
Statistical noise measurement	Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by L_{xx} , where xx represents the percentage of time the sound level is exceeded. For example, L_{90} represents the noise level exceeded during 90 percent of the measurement period. Similarly, L_{10} represents the noise level exceeded for 10 percent of the measurement period.
Day-night average sound level (L_{dn}) noise level	The L_{dn} , or day-night average sound level (DNL), is equal to the 24-hour A-weighted equivalent sound level that is weighted to account for differences in noise levels and the perception of noise during nighttime hours (10 p.m. to 7 a.m.).

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1 Table 4.10-2 lists various A-weighted noise levels of common sounds measured in the environment
2 and common industrial contexts and their relative qualitative descriptions.
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Table 4.10-2 Typical Noise Levels Measured in the Environment and Industry and Qualitative Descriptions

Noise Source at a Given Distance (feet)	A-Weighted Noise Level (dBA)	Qualitative Noise Description
Carrier deck jet operation Jet takeoff (200 feet)	140 130 120	Pain threshold
Auto horn (3 feet) Jet takeoff (1,000 feet) Shout (0.5 feet)	110 100	Maximum vocal effort
New York subway station (50 feet) Heavy truck (50 feet)	90	Very annoying; hearing damage (8-hour, continuous exposure)
Pneumatic drill (50 feet) Freight train (50 feet) Freeway traffic (50 feet)	80 70 to 80 70	Annoying Intrusive (telephone use difficult)
Air conditioning unit (20 feet) Light auto traffic (50 feet) Living room/bedroom	60 50 40	Quiet
Library/soft whisper (5 feet) Broadcasting/recording studio	30 20 10	Very quiet Just audible

Source: NYSDEC 2001

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5 **Human Perception of Noise**

6 The effects of noise on people can be listed in three general categories:

- 7
- 8 • Subjective effects of annoyance, nuisance, dissatisfaction
 - 9 • Interference with activities such as speech, sleep, and learning
 - 10 • Physiological effects such as startling and hearing loss

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12 In most cases, environmental noise may produce effects in the first two categories only. No
13 universally accepted method exists to measure the subjective effects of noise or the corresponding
14 reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the
15 wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important
16 way of determining a person's subjective reaction to a new noise is to compare it to the existing or
17 "ambient" environment to which that person has adapted. In general, the greater the increase in
18 existing ambient noise levels or frequency, the less acceptable the new noise will be, as judged by
19 the exposed individual.

20
21 The general human response to changes in noise levels of similar frequency (for example,
22 comparing increases in continuous [L_{eq}] traffic noise levels) is summarized as follows:

- 23
- 24 • A 3-dBA change in noise level is a barely noticeable difference.

- A 5-dBA change in noise level is typically noticeable.
- A 10-dBA change in noise level is perceived as a doubling in loudness.

Noise Attenuation

Noise attenuates¹ over distance. When noise is created by a point source, it attenuates at 6 dBA per doubling of distance from a source. From a linear source, noise attenuates at about 3 dBA per doubling of distance.

Existing Noise Environment

Existing noise environments are defined by the ambient noise in the area, as well as the sensitive receptors in the area.

Ambient Noise

A noise survey was conducted on June 24–25, 2014, and January 5–6, 2015, to document the existing noise environment at noise-sensitive receptors and to identify the existing noise sources within the proposed project area. Details of the noise survey are included in the Noise Technical Report and addendum, which are provided in Appendix J. Noise measurements were taken in the vicinity of Mesa Substation, with two locations in Monterey Park, two locations in Montebello, and one location in the vicinity of Goodrich Substation in Pasadena. Figure 4.10-1 shows the locations of each monitoring site in relation to project components.

Table 4.10-3 summarizes the existing average 8-hour L_{eq} noise levels and the lowest 1-hour daytime and nighttime L_{eq} noise levels measured at each monitoring location.

Table 4.10-3 Summary of Existing Ambient Noise Measurement Locations in Project Area/Region

Monitoring Location	Jurisdiction	Distance	Average L_{eq} (8-hour dBA)	Lowest L_{eq} (1-hour dBA)	
				Nighttime	Daytime
Schurr High School at Appian Way	Montebello	1,300 feet from Mesa Substation 435 feet from Telecommunications Route 1	62	56	59
Neil Armstrong Street, East of Building W	Montebello	3,450 feet from Mesa Substation 1,340 feet from transmission lines	55	49	53
1990 Holly Oak Drive (at backyard property line facing substation)	Monterey Park	1,040 feet from Mesa Substation 1,060 feet from Telecommunications Route 1	52	47	50

¹ Attenuation is the gradual loss in intensity.

Table 4.10-3 Summary of Existing Ambient Noise Measurement Locations in Project Area/Region

Monitoring Location	Jurisdiction	Distance	Average L_{eq} (8-hour dBA)	Lowest L_{eq} (1-hour dBA)	
				Nighttime	Daytime
Northwest Corner of Potrero Grande Drive and East Markland Drive	Monterey Park	280 feet from Mesa Substation 8 feet from Telecommunications Line 1	68	58	64
Goodrich Substation	Pasadena	8 feet from Goodrich Substation	64	58	62

Source: Acentech 2015
dBA A-weighted decibels
 L_{eq} equivalent sound pressure level

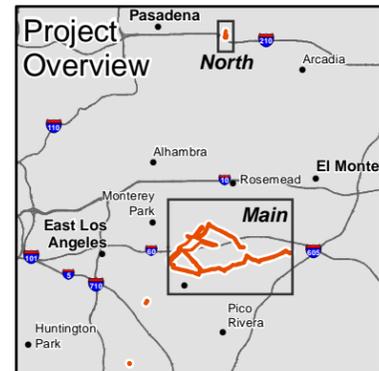
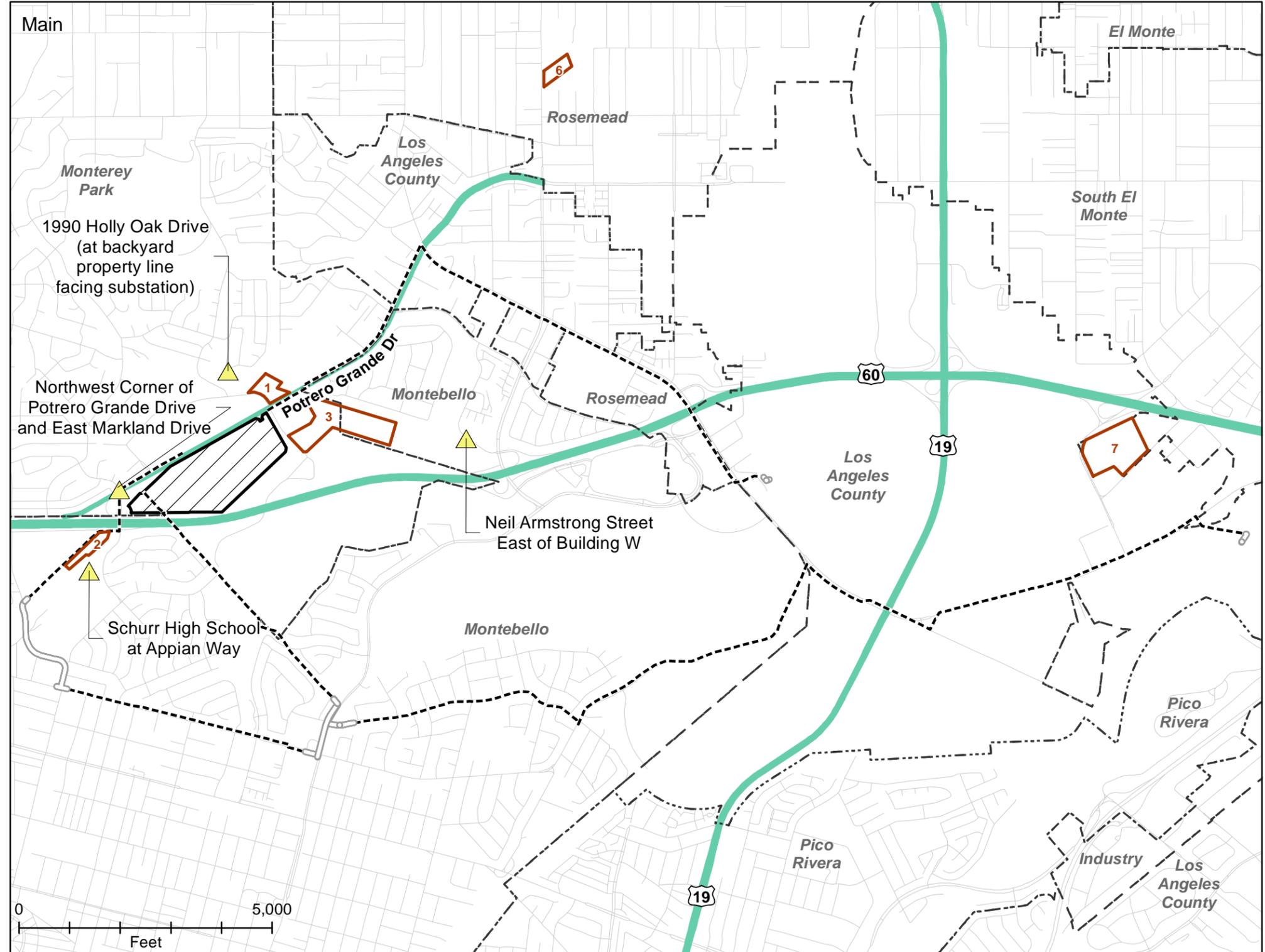
1
2 The primary source of noise in the proposed project area is vehicular traffic on highways and local
3 streets. Major vehicular noise sources in the area, which are shown in Figure 4.10-1, include:
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- State Route 60
- Interstate 210
- State Route 19
- Potrero Grande Drive

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6 Commercial and industrial activities are also sources of noise in the proposed project area,
7 including existing operation activities at the Mesa Substation site.
8

9 ***Sensitive Receptors***

10 A noise-sensitive receptor is a land use that is sensitive to loud noises. Sensitive receptors include
11 residences, hospitals, places of worship, libraries and schools, nature and wildlife preserves, and
12 parks. The proposed project is located in a region with a mix of high-density residential,
13 commercial, and institutional land uses, and some open space. Sensitive noise receptors within
14 1,000 feet of proposed project components are listed in Table 4.10-4. A distance of 1,000 feet was
15 chosen because it captures the closest receptors to all components, except for the 220-kilovolt (kV)
16 structure replacement area in Commerce. The work area in Commerce is located within an
17 industrial area, with its closest residential receptor approximately 1,470 feet from the structure
18 replacement location. The residence is also adjacent to a railroad and behind a sound wall, such that
19 the noise from the proposed project would not be distinguishable from background noise.
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<ul style="list-style-type: none"> --- Telecommunications route □ Manholes, vaults, and underground construction □ Staging yard ▨ Proposed Mesa Substation □ Study Area (North and South) - - - City boundary 	<ul style="list-style-type: none"> ▲ Noise monitoring location — Major vehicular noise sources
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**Figure 4.10-1
Noise
Monitoring Locations
Mesa Substation
Los Angeles County, CA**

Sources: SCE 2015
Basemap: ESRI Media Kit 2010



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Table 4.10-4 Closest Sensitive Receptors to Proposed Project Components

Project Components	Receptor	Jurisdiction	Distance of Closest Receptor (feet)
Main Project Area			
Mesa 500-kV Substation	Residences	Monterey Park Montebello	320 280
	Best Western Markland Hotel	Monterey Park	70
500-kV Transmission Lines, 220-kV, Transmission Lines, 66-kV Subtransmission Lines, and 16-kV Distribution Lines	Residences	Monterey Park Montebello	70 120
	Resurrection Cemetery and Mausoleum	Montebello	150
	Best Western Markland Hotel	Monterey Park	165
Telecommunications Route 1 (new underground portion)	Residences	Los Angeles County	70
Telecommunications Route 3 (new underground portion)	Whittier Narrows Nature Center and Natural Area	Los Angeles County	Within Whittier Narrows Natural Area
North Area			
Goodrich Substation	Residences	Pasadena	100
	Pasadena City College Community Education Center		290
South Area			
220-kV Transmission Structure Replacement	None within 1,000 feet	Commerce	None within 1,000 feet
Street Light Source Line Conversion in Loveland Street (Underground)	Residences	Bell Gardens	20
	Bell Gardens Christian School		610

Key:
kV kilovolt

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4.10.1.2 Vibration

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Vibratory motion is commonly described by identifying peak particle velocity. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in inches per second. The PPV is most frequently used to describe vibration impacts to buildings.

However, human response to vibration is usually assessed using amplitude indicators (root-mean square), or vibration velocity levels measured in inches per second or in vibration decibels (VdB). The background velocity level in residential areas is usually 50 VdB; this level of vibration is conservatively used as the baseline vibration for all areas of the proposed project. The rumbling sound cause by vibration is called ground-borne noise and is usually characterized with the dBA scale. Some of the most common sources of vibration are trains or transit vehicles, construction equipment, airplanes, large vehicles, and blasting. Typical construction equipment vibration falls in the 10 to 30 Hz range. Traffic vibrations exhibit a similar range of frequencies (FTA 2006).

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4.10.2 Regulatory Setting

4.10.2.1 Federal

Occupational Health and Safety and Health Act of 1970

Worker exposure to noise is regulated by the federal Occupational Safety and Health Administration, which established occupational noise regulations in 29 Code of Federal Regulations (CFR) 1910.95 (U.S. Department of Labor 1970).

4.10.2.2 State

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise level of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. Title 24 of the California Code of Regulations, also known as the California Buildings Standards Code, establishes building standards applicable to all occupancies throughout the state. The code provides acoustical regulations for exterior-to-interior sound insulation, as well as sound and impact insulation between adjacent spaces of various occupancies. Title 24 regulations generally state that interior noise levels generated by exterior noise sources shall not exceed 45 dBA Ldn/Community Noise Equivalent Level, with windows closed, in any habitable room for general residential uses.

California Government Code Section 65302(f)

The State of California requires local governments to perform noise surveys and implement a noise element as part of its General Plan, as established in the California Government Code Section 65302(f) (State of California 2015). In addition, the State recommends interior and exterior noise standards by land use category and standards for the compatibility of various land uses and noise levels.

4.10.2.3 Regional and Local

Los Angeles County General Plan

The Noise Element of the Los Angeles County General Plan (Los Angeles County 2015) does not include policies or goals that are relevant to the proposed project.

Los Angeles County Municipal Code

Tables 4.10-5 and 4.10-6 summarize the construction and operation noise limits set forth in Sections 12.08.440 and 12.08.390, respectively, of the Los Angeles County Municipal Code.

Table 4.10-5 Los Angeles County Construction Noise Limits

Noise Source	Sound Level (dB)			Allowed Time
Business structures mobile equipment	85			All hours (including Sunday and legal holidays)
Residential structures	Single- family Residential	Multi- family Residential	Semi- residential/ Commercial	
Mobile equipment ⁽¹⁾	75	80	85	7:00 a.m. to 8:00 p.m. (except Sundays and legal holidays)
	60	64	70	8:00 p.m. to 7:00 a.m. (including Sunday and legal holidays)
Stationary equipment ⁽²⁾	60	65	70	7:00 a.m. to 8:00 p.m. (except Sundays and legal holidays)
	50	55	60	8:00 p.m. to 7:00 a.m. (including Sunday and legal holidays)

Source: Los Angeles County Municipal Code Section 12.08.440 (Los Angeles County 2016)

Notes:

(1) Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days)

(2) Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more)

Key:

dB decibels

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Table 4.10-6 Los Angeles County Operational Noise Limits

Zone	Sound Level (dB)	Time
Commercial properties	55	10:00 p.m. to 7:00 a.m.
	60	7:00 a.m. to 10:00 p.m.
Industrial properties	70	Any time

Source: Los Angeles County Municipal Code Section 12.08.390 (Los Angeles County 2016)

Key:

dB decibels

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Section 12.08.560 of the Los Angeles County Municipal Code contains the following policy on vibration, which is relevant to the proposed project:

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Operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on public space or public right-of-way is prohibited. The perception threshold is a motion velocity of 0.01 inches per second over the range of 1 to 100 hertz. Los Angeles County 2016.

City of Monterey Park General Plan

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The Safety and Community Services Element of the City of Monterey Park General Plan includes the following goal and policies that are relevant to the proposed project (City of Monterey Park 2000):

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- **Goal 5.0:** *Minimize the impact of point-source noises and ambient noise levels throughout the community.*

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- **Policy 5.1:** *Continue to enforce the noise ordinance to control point-source noise.*
- **Policy 5.2:** *Incorporate noise impact considerations into the development review process, particularly the relationship of parking and ingress/egress, loading, and refuse collection areas to surrounding residential and other noise-sensitive land uses.*

- 1 - **Policy 5.4:** *Enforce and revise as necessary City ordinances regulating hours for*
2 *construction activity.*

3
4 **City of Monterey Park Municipal Code**

5 Title 9, Chapter 9.53 of the Monterey Park Municipal Code contains the noise standards provided in
6 Table 4.10-7.

7 **Table 4.10-7 City of Monterey Park Noise Standards**

Noise Zone	Allowable Noise Level (dBA) ^(1,2)	Time
Residential	55	7:00 a.m. to 10:00 p.m.
	50	10:00 p.m. to 7:00 a.m.
Commercial	65	7:00 a.m. to 10:00 p.m.
	55	10:00 p.m. to 7:00 a.m.
Industrial	70	Anytime

Source: Monterey Park Municipal Code Title 9, Chapter 9.53 (City of Monterey Park 2014)

Notes:

- (1) These values are the actual median noise level measured or the presumed ambient noise level at a receiving property.
(2) As noted in Section 9.53.070 of the City of Monterey Park Municipal Code, construction or demolition work conducted between the hours of 7:00 a.m. and 7:00 p.m. on weekdays (Monday through Friday) and the hours of 9:00 a.m. and 6:00 p.m. on Saturdays, Sundays, and holidays are exempt from noise standards identified in this table.

8
9 The noise standard is either the allowable noise level in Table 4.10-7 or the actual measured
10 median ambient noise level, whichever is greater. Furthermore, activities preempted by state or
11 federal law are exempted from the noise ordinance (section 9.53.070).

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13 **City of Montebello General Plan**

14 The Noise Element of the City of Montebello General Plan (City of Montebello 1975) includes the
15 following goals that are relevant to the proposed project:

- 16
17 • **Goal 1:** *Reduce noise to a level that does not jeopardize health and welfare.*
18 • **Goal 2:** *Minimize noise levels of future transportation facilities and other noise sources.*
19 • **Goal 5:** *Alert the public regarding the potential impact of transportation and other noise.*
20 • **Goal 6:** *Protect areas that are presently quiet from future noise impact.*

21
22 **City of Montebello Municipal Code**

23 Title 9, Chapter 9.08 of the Montebello Municipal Code contains the noise ordinance for the City of
24 Montebello, which prohibits any loud or raucous noise, including the following that are relevant to
25 the proposed project (City of Montebello 2015):

- 26
27 • Noise sources associated with construction, demolition, grading, repair or remodeling of
28 any real property other than between the hours of 7:00 a.m. and 8:00 p.m. on weekdays
29 (Monday through Friday), and 9:00 a.m. and 6:00 p.m. on Saturdays, Sundays, and legal
30 holidays, except in the case of an emergency where such action is immediately required to
31 prevent injuries to persons or damage to property as determined by the director of building
32 and safety or his designated representative.

- The creation of noises adjacent to any school, institution of learning, church, or court while the same are in use, or adjacent to any medical facility, including but not limited to, a hospital, medical office, clinic, or any location where medical treatment is rendered, that unreasonably interferes with the workings of such institution, or that unreasonably disturbs the occupants of or visitors to these structures.
- Any pile driver, pneumatic hammer, bulldozers or other construction vehicles, motorized hoists, or other devices operated between the hours of 8:00 p.m. and 7:00 a.m.
- The operation of any noise-creating blower, power fan, or internal combustion engine in which the power is produced by the explosion of a fuel and air mixture within the cylinder(s) shall be prohibited unless the noise from such blower or fan is muffled and such engine is equipped with a muffler device sufficient to deaden such noise.

Section 17.22.110 of the Montebello Municipal Code contains the noise standards provided in Table 4.10-8.

Table 4.10-8 City of Montebello Noise Standards

Noise Zone	Allowable Noise Level (dBA) ^{a, b}	Time
Residential	65	7:00 a.m. to 10:00 p.m.
	60	10:00 p.m. to 7:00 a.m.
Commercial	70	Anytime
Industrial	75	Anytime

Source: Montebello Municipal Code Title 17, Chapter 17.22 (City of Montebello 2015)

City of Rosemead General Plan

The Noise Element of the City of Rosemead General Plan (City of Rosemead 2010) includes the following goal and policies that are relevant to the proposed project:

- **Goal 3:** *Effective implementation of measures to control non-transportation noise impacts.*
 - **Policy 3.1:** *Enforce provisions of the Community Noise Ordinance to mitigate noise conflicts.*
 - **Policy 3.2:** *Require that potential sources of noise be considered when approving new development to reduce the possibility of adverse effects.*
 - **Policy 3.3:** *Evaluate noise generated by construction activities to ensure compliance with the Community Noise Ordinance.*

City of Rosemead Municipal Code

Title 8, Chapter 8.36 of the City of Rosemead Municipal Code contains the following noise exemptions, which are relevant to the proposed project:

- Noise sources associated with construction, repair, remodeling, or grading of any real property or during authorized seismic surveys, are exempt, provided such activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday, and provided the noise level created by such activities does not exceed the noise standards in Table 4.10-9 and does not endanger the public health, welfare, and safety.

- The provisions of Chapter 8.36 shall not preclude the construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public work projects, or public utilities subject to the regulatory jurisdiction of the CPUC.
- The code also states that any activity the regulation thereof has been preempted by state or federal law is exempt from the noise regulation.

Table 4.10-9 City of Rosemead Noise Standards

Type of Land Use (Receptor Property)	Allowable Exterior Noise Level (dBA)	Time Interval
Single-, Double-, or Multiple-Family Residential	60	7:00 a.m. to 10:00 p.m.
	45	10:00 p.m.to 7:00 a.m.
Commercial	65	7:00 a.m. to 10:00 p.m.
	60	10:00 p.m.to 7:00 a.m.
Industrial or Manufacturing	70	Anytime

Source: City of Rosemead Municipal Code, Title 8, Chapter 8.36 (City of Rosemead 2014)

Chapter 17.20 of the City of Rosemead municipal code also prohibits any use within commercial and industrial zones that generates any ground-transmitted vibration that is perceptible to the human sense of touch when measured at the edge of the source’s lot line.

City of South El Monte General Plan

The Public Safety Element of the City of South El Monte General Plan includes the following goal and policy that are relevant to the proposed project (City of South El Monte 2000):

- **Goal 3.0:** *Minimize the adverse effects of excessive or unusual noise on the city’s residential and business populations.*
 - **Policy 3.1:** *Use the noise/land use compatibility standards as a guide for future planning and development decisions.*

City of South El Monte Municipal Code

Section 8.36.040 of the City of South El Monte Municipal Code includes noise standards for residential, commercial, and industrial zones, which are provided in Table 4.10-10.

Table 4.10-10 City of South El Monte Noise Standards

Type of Land Use	Allowable Exterior Noise Level (dBA) ⁽¹⁾	Time Interval
Single-family Residential	50	7:00 a.m. to 10:00 p.m.
	45	10:00 p.m.to 7:00 a.m.
Multi-family Residential	55	7:00 a.m. to 10:00 p.m.
	50	10:00 p.m.to 7:00 a.m.
Commercial	65	7:00 a.m. to 10:00 p.m.
	60	10:00 p.m.to 7:00 a.m.
Industrial or Manufacturing	70	Anytime

Source: City of South El Monte Municipal Code section 8.36.040 (City of South El Monte 2015)

Note:

(1) These values are the actual medium noise level measured or the presumed ambient noise level at a receiving property.

Key:

dBA A-weighted decibels

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2 The City of South El Monte Municipal Code Section 8.36.050 contains the following noise
3 exemptions, which are relevant to the proposed project:
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- 5 • Except as otherwise permitted, it is unlawful for any person within the city to operate
6 power construction tools or equipment in the performance of any outside construction or
7 repair work on buildings, structures, or projects in or adjacent to a residential area, except
8 between the hours of 6:00 a.m. and 7:00 p.m. Monday through Friday or between the hours
9 of 8:00 a.m. and 7:00 p.m. on Saturday and Sunday.
- 10 • The provisions of this regulation shall not preclude the construction, operation,
11 maintenance, and repairs of equipment, apparatus, or facilities of park and recreation
12 departments, public work projects, or essential public services and facilities, including those
13 of public utilities subject to the regulatory jurisdiction of the CPUC.
14

15 In addition, Section 8.20.020 prohibits the operation of any device or machine that creates a
16 vibration above the vibration perception threshold when measured at or beyond the property
17 boundary of the source. The vibration perception threshold is considered to be 0.01 inch per
18 second over the range of 1 to 100 Hz.
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20 **City of Commerce General Plan**

21 The Safety Element of the City of Commerce General Plan includes the following policies that are
22 relevant to the proposed project (City of Commerce 2008):
23

- 24 • **Safety Policy 6.1:** *The city of Commerce will ensure that residents are protected from harmful
25 and irritating noise sources to the greatest extent possible.*
- 26 • **Safety Policy 6.2:** *The city of Commerce will work with businesses in the city and other public
27 agencies to identify ways to reduce noise impacts throughout the city.*
- 28 • **Safety Policy 6.4:** *The city of Commerce will incorporate noise considerations into land use
29 planning decisions.*
30

31 **City of Commerce Municipal Code**

32 Section 19.19.160 of the City of Commerce Municipal Code contains the following policies, which
33 are relevant to the proposed project (City of Commerce 2015):
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- 35 • No person or organization within any residential zone, or within a radius of 500 feet of a
36 residential zone, shall operate equipment or perform any outside construction or repair
37 work on buildings, structures, or projects, or operate any pile driver, steam shovel,
38 pneumatic hammer, derrick, steam, electric hoist, or other construction type device
39 between the hours of 10:00 p.m. and 7:00 a.m., unless a permit has been obtained from the
40 city
- 41 • No person shall, at any location within the city, create nor allow the creation of noise on
42 property owned, leased, occupied, or otherwise controlled by such person, that causes the
43 noise level when measured on any property to exceed the ambient noise level or the noise
44 standards included in Table 4.10-11.

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Table 4.10-11 City of Commerce Noise Standards

Type of Land Use	Allowable Exterior Noise Level (dBA)	Time Interval
Residential	55	7:00 a.m. to 7:00 p.m.
	50	7:00 p.m. to 10:00 a.m.
	45	10:00 p.m. to 7:00 a.m.
Commercial	65	7:00 a.m. to 10:00 p.m.
	55	10:00 p.m. to 7:00 a.m.
Industrial	70	Anytime

Source: City of Commerce Municipal Code Section 19.19.160 (City of Commerce 2008)

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The City of Commerce Municipal Code also outlines permitted increases in noise levels above those shown in Table 4.10-11, which are shown in Table 4.10-12.

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Table 4.10-12 City of Commerce Permitted Increases in Noise Levels

Permitted increase (dBD)	Duration of increase (cumulative minutes per hour)
5	15
10	5
15	1
20	Less than one minute

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Section 19.19.180 of the City of Commerce Municipal Code also prohibits the generation of ground vibration that would be harmful or injurious to the use or development of surrounding properties.

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In addition, no person may create, maintain, or cause ground vibration that is perceptible without instruments to a person of normal sensitivity on properties located adjacent to the vibration source.

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City of Bell Gardens General Plan

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The Noise Element of the City of Bell Gardens General Plan (City of Bell Gardens 1995) includes the following policy that is relevant to the proposed project:

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- **Policy 2:** *The City of Bell Gardens shall ensure that the noise caused by sources other than traffic (construction, etc.) are at acceptable levels.*

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City of Bell Gardens Municipal Code

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Chapter 16.24, Noise Regulation, of the City of Bell Gardens Municipal Code contains the following regulation, which is relevant to the proposed project (City of Bell Gardens 2015):

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- Between the hours of 7:00 p.m. of one day and 8:00 a.m. of the next day, it is unlawful for any person within a residential zone, or within a radius of 500 feet therefrom, to operate equipment, or perform any outside construction or repair work on buildings, structures, or projects, or operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other construction device in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance, unless beforehand a permit therefore has been duly obtained from the officer or body of the city

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1 having the function to issue permits of this kind. No permit shall be required to perform
2 emergency work.

3 4 **City of Pasadena General Plan**

5 The Noise Element of the City of Pasadena General Plan (City of Pasadena 2002) includes the
6 following policies that are relevant to the proposed project:

- 7
8 • **Policy 7b:** *The city will encourage limitations on construction activities adjacent to sensitive*
9 *noise receptors.*
- 10 • **Policy 7c:** *The city will encourage construction and landscaping activities that employ*
11 *techniques to minimize noise.*
- 12 • **Policy 7d:** *The city will enforce noise level restrictions contained in the City of Pasadena Noise*
13 *Regulations (Chapter 9.36 of the Municipal Code), except during federal, State, or local*
14 *emergencies (such as power generators required for energy emergencies).*

15 16 **City of Pasadena Code of Ordinances**

17 Title 9, Article IV, Chapter 9.36 of the City of Pasadena Code of Ordinances (City of Pasadena 2015)
18 contains the following noise regulation, which is relevant to the proposed project:

- 19
20 • Construction within 500 feet of a residential area is limited to the hours of 7:00 a.m. to 7:00
21 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday, and is prohibited on
22 Sundays and holidays. In addition, noise levels of construction equipment are limited to 85
23 dBA, as measured 100 feet from the equipment.

24 25 **City of Industry Municipal Code and General Plan**

26 The City of Industry does not have noise standards in its Noise Element or in its municipal code
27 (City of Industry 2014).

28 29 **City of Santa Clarita Municipal Code and General Plan**

30 Section 11.44.080 of the City of Santa Clarita Municipal Code limits construction noise within 300
31 feet of a residentially zoned property. Pardee Substation is not located within 300 feet of residential
32 properties. There are no numeric noise standards for non-residential areas in the General Plan (City
33 of Santa Clarita 2011).

34 35 **4.10.3 Impact Analysis**

36 37 **4.10.3.1 Methodology and Significance Criteria**

38
39 The evaluation of noise and vibration impacts from the proposed project involved a review of
40 relevant city and county noise standards; an assessment of the existing noise environment in the
41 project area; and a projection of noise levels from equipment, vehicles, and project activities. Based
42 on the distance from each of the proposed project components to the identified sensitive receptors
43 and the composite noise levels modeled by the applicant, this analysis estimated predicted noise
44 levels—as perceived by closest receptors—and compared them with applicable regulatory
45 standards and guidelines and existing noise levels.

1 The significance criteria were defined based on the checklist items in Appendix G of the CEQA
2 Guidelines. An impact is considered significant if the project would:

- 3
- 4 a) Expose persons to, or generate, noise levels in excess of standards established in the local
5 general plan or noise ordinance, or applicable standards of other agencies;
- 6 b) Expose persons to, or generate, excessive groundborne vibration or groundborne noise
7 levels;
- 8 c) Cause a substantial permanent increase in ambient noise levels in the project vicinity above
9 levels that would exist without the project;
- 10 d) Cause a substantial temporary increase in ambient noise levels in the project vicinity above
11 levels that would exist without the project;
- 12 e) Expose people residing near or working on the project to excessive noise levels, for a
13 project located within an airport land use plan or, where such a plan has not been adopted,
14 within two miles of a public airport or public use airport; and
- 15 f) Expose people residing near or working on the project to excessive noise levels, for a
16 project within the vicinity of a private airstrip.
17

18 Significance criterion (e) (“For a project located within an airport land use plan or, where such a
19 plan has not been adopted, within two miles of a public airport or public use airport, would the
20 project result in a safety hazard for people residing or working in the project area?”) does not apply
21 to the proposed project. The proposed project would not be located within an adopted airport land
22 use plan, and no public use airports are within two miles of the proposed project site; therefore,
23 this significance criterion is not applicable and is not discussed further in this environmental
24 impact report (EIR).
25

26 Significance criterion (f) (“For a project located in the vicinity of a private airstrip, would the
27 project result in exposure to people residing near or working on the project to excessive noise
28 levels?”) does not apply to the proposed project. The proposed project would not be located in the
29 vicinity of a private airstrip; therefore, this significance criterion is not applicable and is not
30 discussed further in this EIR.
31

32 **Noise Impact Methodology**

33 ***Construction***

34 Operation of heavy equipment would generate noise during construction of the proposed project.
35 Construction noise levels would vary throughout the day and throughout the construction period
36 based on type of equipment used, amount of equipment used, and activities conducted. To obtain
37 conservative results, the noisiest period of construction was modeled using CadnaA, a computer-
38 aided noise model. Maximum noise levels, duration of use, and usage factors for construction
39 equipment used in modeling are contained in the Noise Technical Report and addendum, which are
40 included in Appendix J. The noisiest period of construction also is the time at which horizontal
41 directional drilling (HDD) activities would occur and therefore takes into account the noise from
42 HDD activities; the analysis uses whichever value (i.e., noise during normal construction activities

or noise during construction and HDD activities) would result in higher noise levels. Construction activities would be evenly distributed across the site. Modeling also takes into account:

- Surrounding topography
- Ground and air absorption of noise
- Housing
- Size of noise source
- Elevation of noise source
- Noise reduction from obstructions

The model evenly distributes construction activity throughout the site.

Operation and Maintenance

To estimate the noise contribution due to the operation of the Mesa Substation, transformer noise levels were based on the transformers’ design sound levels outlined in the National Electrical Manufacturers Association (NEMA) Standards Publication No. TR 1-2013 (NEMA 2014) and SCE Specification A1-2009. Design sound levels are shown in Table 4.10-13.

Table 4.10-13 Transformer Design Sound Levels

Transformer Type	Quantity	Design Sound Levels (dBA)
		Oil Cooled/Forced Air Cooled/Forced Oil and Forced Air Cooled
500/220 kV, single phase	11	84/86/88
220/66 kV, three phase	3	84/85/86
66/16 kV, three phase	2	68

Source: Acentech 2015 – SCE Purchase Specification and NEMA Standards Publication No. TR 1-2013

Key:

dBA A=weighted decibels
kV kilovolts

Noise generated from operation of the proposed substation was calculated using the CadnaA noise model. Transformer banks were located according to the substation layout in Figure 2-4 and considering a 10-foot-high wall along the periphery of the substation. For the purposes of the substation transformer noise attenuation, a 10-foot wall is equivalent to a 12-foot wall, given that the transformers are elevated above the ground. The noise model takes into account:

- Surrounding topography
- Ground and air absorption of noise
- Location of noise source
- Size of noise source
- Elevation of noise source
- Noise reduction from obstructions

4.10.3.2 Applicant Proposed Measures

To reduce noise impacts during operation of the proposed project, the applicant has committed to the following applicant proposed measure (APM) as part of the design of the proposed project:

- **APM-NOI-1: Transformer Noise.** SCE would provide an engineering solution to decrease the operational noise levels of the substation transformers to 50 dBA or below, as measured at residential receptors in areas of the City of Monterey Park. This may include the use of quieter transformers, a barrier wall, or another engineering solution. A feasible engineering solution will be incorporated during final engineering.

1
2 **4.10.3.3 Environmental Impacts**

3
4 **Impact NV-1: Noise levels in excess of standards established in the local general plan or**
5 **noise ordinance.**
6 *SIGNIFICANT WITH MITIGATION*

7
8 **Introduction**

9 This section focuses on whether noise from project construction and operation would exceed levels
10 established in local noise ordinances. It also identifies whether project construction would occur
11 during nighttime hours in jurisdictions with noise ordinances that do not permit nighttime work.
12 In these instances, impacts associated with nighttime construction are always considered to be
13 significant and unavoidable because any noise during nighttime hours would exceed allowable
14 levels. None of the relevant general plans contain relevant numeric noise standards. Table 4.10-14
15 details the jurisdiction location of each project component. Note that, pursuant to CPUC General
16 Order No. 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of the
17 proposed project and local land use regulations would not apply to the proposed project.
18

Table 4.10-14 Project Component Locations

Jurisdiction	Component(s)
Unincorporated Los Angeles County	<ul style="list-style-type: none"> • Telecommunications Routes 1 and 3
City of Monterey Park	<ul style="list-style-type: none"> • 16-kV Distribution Lines • 66-kV Subtransmission Lines • 220-kV Distribution Lines • 500-kV Transmission Lines • Telecommunications Routes 1 and 2 • Staging Yards 1 and 3
City of Montebello	<ul style="list-style-type: none"> • 220-kV Transmission Lines • 500-kV Transmission Lines • Telecommunications Routes 1, 2 and 3 • Staging Yards 2 and 3
City of Rosemead	<ul style="list-style-type: none"> • Staging Yard 6
City of South El Monte	<ul style="list-style-type: none"> • Staging Yard 7
City of Commerce	<ul style="list-style-type: none"> • 220-kV Structure Replacement • Staging Yard 5
City of Bell Gardens	<ul style="list-style-type: none"> • Street Light Source Line Conversion
City of Pasadena	<ul style="list-style-type: none"> • Temporary 220-kV Structure Installation at Goodrich Substation • Telecommunications Rerouting at Goodrich Substation • Staging Yard 4

Key:
kV kilovolt

19
20 **Construction**

21 ***Los Angeles County (Unincorporated)***

22 Construction of Telecommunications Routes 1 and 3 and the telecommunications reroute at
23 Vincent Substation would take place in unincorporated Los Angeles County (Table 4.10-15). Most of
24 the telecommunications construction activity would take place in residential areas. The most

1 conservative noise limit for mobile equipment in residential areas is for single-family residential
2 structures. Noise is restricted to 75 dBA from 7:00 am to 8:00 pm except Sundays and legal holidays
3 and to 60 dBA from 8:00 pm to 7:00 am and all day on Sundays and legal holidays (Table 4.10-5).
4 Cable installation and removal would generate a noise level of 66 dBA at 50 feet (Acentech 2015).
5 Assuming attenuation of noise of 6 dBA with every doubling of distance, noise levels would
6 measure about 72 dBA at about 25 feet. Single family residences are set back at least 20 feet from
7 the telecommunications lines and therefore, experience noise levels at about 74 dBA, when using a
8 conservative calculation method. Cable installation and removal in unincorporated Los Angeles
9 County would not exceed applicable noise limits.

10
11 Trenching and backfilling activities for Telecommunications Route 1 and Vincent Substation would
12 take place in a residential area. The loudest activity would be trenching, which would generate a
13 noise level of 83 dBA at 50 feet (Acentech 2015). Assuming attenuation of noise of 6 dBA with every
14 doubling of distance, noise levels would measure about 89 dBA at 25 feet. Noise would attenuate to
15 75 dBA at about 125 feet when using a conservative calculation method. On Telecommunications
16 Route 1, the closest residence to the trenching area along Telecommunication Route 1 is
17 approximately 125 feet. The closest residence to Vincent Substation is approximately 350 feet.
18 Trenching and backfilling activities along Telecommunications Route 1 and Vincent Substation
19 would not exceed applicable noise limits.

20
21 Trenching and backfilling activities for Telecommunications Route 3 would occur close to business
22 structures. The noise limit for mobile equipment to business structures is 85 dBA. As detailed
23 above, the loudest activity would be trenching, which would generate 89 dBA at 25 feet. Noise
24 would attenuate to 85 dBA at 40 feet. The closest business building to the trenching along
25 Telecommunications Route 3 is about 460 feet away. Trenching and backfilling activities along
26 Telecommunications Route 3 would not exceed applicable noise limits.

27
28 Construction activities within unincorporated Los Angeles County would not exceed applicable
29 noise limits and impacts under this criterion would be less than significant.

30 ***City of Monterey Park***

31
32 The City of Monterey Park Municipal Code exempts activities in locations where regulation has
33 been preempted by state law from the City of Monterey Park Municipal Code noise regulations in
34 Chapter 9.53. Thus, noise from constructing the components in Monterey Park and using the
35 staging yards in Monterey Park, as listed in Table 4.10-15, would not exceed applicable noise limits.
36 There would be no impact.

37 ***City of Montebello***

38
39 Components constructed in the City of Montebello include 220-kV transmission lines; 500-kV
40 transmission lines; and Telecommunications Routes 1, 2, and 3 (Table 4.10-15). Staging Yards 2 and
41 3 would also be located in Montebello. Helicopters may also be used in Montebello for line stringing
42 and may also use Staging Yards 2 and 3 as a landing area. Montebello restricts non-emergency
43 construction activities to between the hours of 7:00 a.m. and 8:00 p.m. on weekdays (Monday
44 through Friday), and 9:00 a.m. to 6:00 p.m. on Saturdays, Sundays, and legal holidays. Construction
45 activities would generally occur during these hours. However, some construction may be required
46 outside of the allowed time, e.g., a planned line outage that must occur at night for safety reasons.
47 Construction noise associated with the proposed project would conflict with the City of

1 Montebello's noise ordinance if construction occurs outside of the allowed construction hours, and
2 impacts would be significant and unavoidable.

3
4 **City of Rosemead**

5 City of Rosemead Municipal Code exempts activities in locations where regulation has been
6 preempted by state law from the City of Rosemead Municipal Code noise regulations in Chapter
7 8.36. Thus, noise from using Staging Yard 6 would not conflict with Rosemead's local noise
8 ordinance. There would be no impact.

9
10 **City of South El Monte**

11 Staging Yard 7 would be located in South El Monte. Construction equipment cannot be operated in
12 South El Monte except between the hours of 6:00 a.m. and 7:00 p.m. Monday through Friday or
13 between 8:00 a.m. and 7:00 p.m. on Saturday and Sunday. Construction of the proposed Project
14 would generally take place during these hours. Some construction may be required outside of the
15 allowed time, e.g., a planned line outage that must occur at night for safety reasons. Construction
16 noise associated with the proposed project would conflict with the City of South El Monte's noise
17 ordinance if construction occurs outside of the allowed construction hours and impacts would be
18 significant and unavoidable.

19
20 **City of Commerce**

21 In the City of Commerce, structure replacement would occur in an industrial area. Staging Yard 5 is
22 also located in Commerce in an industrial area. Laguna Bell Substation is also located in Commerce.
23 The allowable exterior noise level in an industrial land use area is 70 dBA at all times (Table 4.10-
24 11). Further, permitted increases above the allowable exterior noise levels are allowed for limited
25 durations, as shown in Table 4.10-12. Of the equipment that could be used in the City of Commerce,
26 the loudest equipment would include a drill rig, concrete mixer truck, and crane, which produce
27 noise at approximately 85 dBA at 50 feet (FHWA 2006). This exceedance of the 70-dBA threshold
28 by 15 dBA would be allowed for only 1 minute under the City of Commerce municipal code.
29 Construction of the proposed project would result in more than one minute per hour of exceedance
30 of the 70-dBA threshold, which would be a significant impact. Mitigation Measure (MM) NV-1
31 would require the applicant to implement a Noise Control Plan, which would include noise control
32 measures at three levels: (1) at the noise source, (2) along the source-to-receiver propagation path,
33 and (3) at the receiver. These measures would include the use of noise reduction strategies such as
34 acoustic barriers and mufflers. Barriers in general would obtain 10 dBA in noise reduction, but
35 their implementation is dependent on site-specific conditions. In addition, it is unlikely that other
36 feasible noise reduction strategies would achieve another 5 dBA in noise reduction. Project-related
37 construction would exceed applicable noise levels even after mitigation, and therefore impacts
38 would be significant and unavoidable.

39
40 At Staging Yard 5, typical noise would be a maximum of 75 dBA at 50 feet, with an hourly average of
41 65 dBA at 50 feet (SCE 2013). This assumes two trucks operating for an hour or less for parking or
42 truck deliveries (SCE 2013). The allowable exterior noise level in an industrial land use area is 70
43 dBA at all times (Table 4.10-11). A permitted increase of 5 dBA to 75 dBA is allowed for a
44 cumulative of 15 minutes per hour (Table 4.10-12). The use of the staging area may occur all in one
45 hour per day or may be spread throughout the day. Therefore, impacts would be significant. MM
46 NV-1 would require the applicant to implement a Noise Control Plan, which would include the use
47 of acoustic barriers and mufflers. Barriers in general can be expected to obtain 10 dBA in noise

1 reduction, which would ensure that MM NV-1 would reduce noise impacts from Staging Yard 5 to
2 less than significant. Impacts would therefore be less than significant.

3
4 At Laguna Bell Substation in Commerce, work would involve replacing circuit breakers,
5 disconnects, and line risers. This work would be consistent with normal substation maintenance
6 and repair and would not violate the local noise ordinance. There would be no impact.

7
8 ***City of Bell Gardens***

9 Construction in the City of Bell Gardens would occur in a residential area, where operation of loud
10 construction equipment is not allowed between the hours of 7:00 p.m. of one day and 8:00 a.m. of
11 the next day unless permit has been obtained from the City. Construction in Bell Gardens would
12 generally occur during the allowed hours. Some construction may be required outside of the
13 allowed time, e.g., a planned line outage that must occur at night for safety reasons. While SCE may
14 obtain a permit to construct outside allowed hours, it is outside of the CPUC's jurisdiction to ensure
15 that the permit itself contains measures that would reduce noise to a level that is less than
16 significant, given that there is no standard for allowable noise in the ordinance. Impacts would be
17 significant and unavoidable if construction using loud equipment occurs outside of allowable times
18 in the City of Bell Gardens.

19
20 ***City of Pasadena***

21 Most construction noise limitations in Pasadena apply within a 500-foot radius from a residential
22 district; the closest residences to the substation are 100 feet away. There are residences within 500
23 feet of the construction area for structure replacement and telecommunications routing. Staging
24 Yard 4 is also located within 500 feet of a residential area and may be used for helicopter landing
25 and takeoff. In this area, construction is allowed from 7:00 am to 7:00 pm Monday through Friday
26 and from 8:00am to 5:00 pm on Saturday. Construction of the proposed project would generally
27 take place within these hours. Some construction may be required outside of the allowed time, e.g.,
28 a planned line outage that must occur at night for safety reasons.

29
30 The City of Pasadena has established a construction noise limit of 85 dBA within 100 feet of the
31 equipment. Use of construction equipment at the Goodrich Substation for structure replacement
32 would generate a noise level of 75 dBA within 320 feet of construction activity (Acentech 2015),
33 which translates to 85 dBA at 100 feet from the substation. At Staging Yard 4, typical noise would
34 be a maximum of 75 dBA at 50 feet, with an hourly average of 65 dBA at 50 feet (SCE 2013). This
35 assumes two trucks operating for an hour or less for parking or truck deliveries (SCE 2013).
36 Telecommunications rerouting may generate up to 86 dBA at 50 feet from the work (Acentech
37 2015). At 100 feet, sound levels would be 80 dBA and therefore structure replacement,
38 telecommunications relocation, and general staging yard noise at Goodrich Substation would not
39 exceed the City of Pasadena's noise limit. Impacts would be less than significant.

40
41 Helicopter use at Staging Yard 4 would produce noise levels of up to 97 dBA at 100 feet.
42 Construction-related noise associated with the proposed project would exceed the noise limits set
43 forth in the City of Pasadena's noise ordinance as a result of construction occurring outside of the
44 allowed construction hours and as a result of helicopter landing activities at Staging Yard 4. This
45 would be a significant impact. Noise reduction mitigation measures would not be effective at
46 reducing helicopter noise within 100 feet, since the helicopters would produce noise when airborne
47 and landing, where noise barriers would be ineffective. Impacts would be significant and
48 unavoidable.

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City of Industry

Construction at Walnut Substation in the City of Industry would not violate any local noise standards since the City of Industry has no noise ordinance or general plan noise standards. There would be no impact.

City of Santa Clarita

Santa Clarita’s noise ordinance limits construction noise within 300 feet of a residentially zoned property. Pardee Substation is not located within 300 feet of residential properties, and therefore construction-related noise would not exceed applicable noise limits. There would be no impact.

City of Long Beach

At Lighthipe Substation in Long Beach, work would involve replacing circuit breakers, disconnects, and line risers. This work would be consistent with normal substation maintenance and repair and would not violate local noise ordinances. There would be no impact.

Existing Substations in Other Jurisdictions

Work at the remaining substations would take place inside existing buildings at the substations, as detailed in Table 2-5, and would generate noise that would not be audible outside of the building. Construction at these substations would not violate local noise ordinances. There would be no impact.

Operation and Maintenance

Rosemead, South El Monte

No permanent project components would be located in these jurisdictions. The proposed project would have no impact in these jurisdictions.

Bell Gardens, Commerce, Los Angeles County (Unincorporated), Montebello, Pasadena

Maintenance activities for the street light line in Bell Gardens, the 220-kV structure in Commerce, the telecommunications routes in unincorporated Los Angeles County, the transmission lines and telecommunications routes in Montebello, and the underground telecommunications infrastructure at Goodrich Substation in Pasadena would involve activities similar to those that occur now for existing infrastructure in the same areas. Thus, the proposed project would have no impacts related to conflicts with local noise ordinances.

Monterey Park

Mesa Substation would be located in Monterey Park. The primary source of operating noise at the new Mesa Substation would be the on-site transformers. Eleven single-phase 500/220 kV transformers, three three-phase 220/66 kV transformers, and two three-phase 66/16 kV transformers would be installed. The resulting noise levels at the noise-sensitive receptors (monitor locations) near the Mesa Substation with all transformers simultaneously in operation are presented in Table 4.10-15.

1

Table 4.10-15 Transformer Noise Levels at Sensitive Receptors

Monitor Location	Transformer Noise L_{eq} (dBA)	Nighttime Standard (dBA)	Daytime Standard (dBA)	Exceeds Standard?
1990 Holly Oak Drive (at backyard property line facing substation)	53	50	55	Yes (nighttime only)
Northwest Corner of Potrero Grande Drive and East Markland Drive	48	50	55	No
Best Western Plus Markland Hotel	52	55	65	No

Source: Acentech 2015

Key:

dBA A-weighted decibels

L_{eq} equivalent sound pressure level

2

3 As shown in Table 4.10-15, noise levels would exceed the City of Monterey Park’s 50 dBA nighttime
4 noise standard for residential land uses by 3 dBA at the property line of residences along Holly Oak
5 Drive, which would be a significant impact.

6

7 The receptors on Holly Oak Drive are the closest to the 500/220-kV transformers, with the closest
8 receptors being approximately 1,000 feet from the transformers (about 100 feet closer than 1990
9 Holly Oak Drive). To reduce transformer noise to 50 dBA or lower in the residential areas and 55
10 dBA or lower in commercial areas of the City of Monterey Park, SCE would implement APM-NOI-01.
11 Impacts would still be significant after implementation of APM-NOI-1 because there is no
12 mechanism in the APM to require verification that the engineering solution abated noise to below
13 the 50-dBA threshold. MM NV-2 would require verification of adequate noise reduction and
14 implementation of additional measures until the threshold is met. Impacts would be less than
15 significant after mitigation.

16

17 ***Existing Substations in Other Jurisdictions***

18 Noise generated from the modified existing substations would not change over baseline conditions.
19 The proposed project would have no impact related to violation of noise ordinances.

20

21 **Impact NV-2: Excessive groundborne vibration or groundborne noise levels.**

22 *LESS THAN SIGNIFICANT*

23

24 **Methodology**

25 The California Department of Transportation’s Transportation and Construction Vibration
26 Guidance Manual (Caltrans 2013) was used to assess vibration issues associated with construction
27 of the proposed project. Exceedance of levels in Table 4.10-16 would indicate a significant vibration
28 impact.

29

Table 4.10-16 Human Response to Vibration

Continuous		Transient	
Human Response	PPV ⁽¹⁾ (in/sec)	Human Response	PPV ⁽¹⁾ (in/sec)
Very disturbing	3.6	Severe	2.0
Disturbing	0.7	Strongly perceptible	0.9
Strongly perceptible	0.10	Distinctly perceptible	0.24
Distinctly perceptible	0.035	Barely perceptible	0.035
Slightly perceptible	0.012		

Source: Caltrans 2013

Notes

⁽¹⁾ The peak particle velocity is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in inches per second.

Key:

in/sec inches per second

PPV peak particle velocity

1
2 For continuous vibration, this analysis considers vibration over 0.1 PPV (strongly perceptible) to be
3 significant. For transient vibration, this analysis considers vibration over 0.9 PPV (strongly
4 perceptible) to be significant.

5
6 **Construction**

7 Proposed project construction activities that would generate groundborne vibration during
8 construction include truck traffic, ground disturbing activities, and equipment moving at the Mesa
9 Substation site and associated transmission line and subtransmission alignments, at the 220-kV
10 structure replacement site, at the streetlight source conversion alignment, and along the new
11 undergrounded telecommunications routes. The most continuous vibration-intensive activity
12 would be jack-and-bore and HDD activities for relocation of the Metropolitan Water District
13 pipeline under Potrero Grande Drive. The most vibration-intensive transient activity would involve
14 the use of construction equipment, with the vibratory roller producing the most vibration.

15
16 For Metropolitan Water District of Southern California pipeline relocation under Potrero Grande
17 Drive, HDD activities would generate a PPV of 0.089 at 25 feet, whereas jack and bore activities
18 would generate a PPV of 0.644 at 25 feet (FTA 2006). HDD vibration levels would be below the
19 continuous vibration significance threshold of 0.1 PPV (Table 4.10-14). Jack and bore activities
20 would exceed the continuous vibration significance threshold at 25 feet. However, vibration
21 attenuates rapidly over distance. The closest receptor to the jack and bore activities is an office
22 building 140 feet north of the proposed alignment on the north side of Potrero Grande Drive. The
23 vibrations of the jack and bore activities would attenuate to less than 0.081 PPV at 140 feet
24 (NBWRA 2009).

25
26 The vibratory roller would generate a PPV of 0.210 at 25 feet (Caltrans 2013). Vibratory roller
27 vibration levels would be below the transient vibration significance threshold of 0.9 PPV (Table
28 4.10-16). All other equipment, such as bulldozers, jackhammers, and loaded trucks, would generate
29 transient vibration at 25 feet from the source below this level. All equipment would therefore be
30 below the transient vibration significance threshold of 0.9 PPV.

31
32 Impacts from vibrations during construction would be less than significant.

33

1 **Operation and Maintenance**

2 Operation of transformers at the proposed Mesa Substation would produce groundborne vibration;
3 however, groundborne vibrations would be perceptible only in the immediate vicinity of the
4 transformer pad, if at all. Remaining operation activities would consist of routine maintenance
5 activities and emergency repairs, similar to current practices. These activities would not produce
6 significant groundborne noise or vibration. Therefore, operation of the proposed project would not
7 result in the exposure of persons to or generation of excessive groundborne vibration or
8 groundborne noise levels, and impacts would be less than significant.

9
10 **Impact NV-3: Substantial permanent increase in ambient noise levels in the project vicinity.**
11 *LESS THAN SIGNIFICANT*

12
13 **Significance Threshold**

14 The CEQA guidelines do not define a substantial increase in construction noise levels. For the
15 purposes of this EIR, a substantial increase in noise is defined as a 10-dBA increase over existing
16 ambient noise levels. An increase of 10 dBA is perceived as a doubling of noise.

17
18 **Construction**

19 Construction of the proposed project would be temporary and would not cause a permanent
20 increase in ambient noise levels in the vicinity of the proposed project. Therefore, no permanent
21 noise impact from construction would occur.

22
23 **Operation and Maintenance**

24 **Mesa Substation**

25 Operation of the new transformers at the Mesa Substation site would become part of the ambient
26 noise environment. Eleven single-phase 500/220 kV transformers, three three-phase 220/66 kV
27 transformers, and two three-phase 66/16 kV transformers would be installed. Table 4.10-17
28 compares the ambient conditions and the calculated combined transformer noise levels at each of
29 the monitoring locations.

30

Table 4.10-17 Impact of Transformers on Ambient Noise Levels at Closest Sensitive Receptors

Receptor Location	Average L _{eq} (8-hour dBA)	Transformers (dBA)	Increase (dBA)	Threshold (increase in dBA)	Exceeds Threshold?
Schurr High School at Appian Way	62	44	N/A	10	No
Neil Armstrong Street, East of Building W	55	39	N/A	10	No
1990 Holly Oak Drive (at backyard property line facing substation)	52	53	1	10	No
Northwest Corner of Potrero Grande Drive and East Markland Drive	68	48	N/A	10	No

Table 4.10-17 Impact of Transformers on Ambient Noise Levels at Closest Sensitive Receptors

Receptor Location	Average L_{eq} (8-hour dBA)	Transformers (dBA)	Increase (dBA)	Threshold (increase in dBA)	Exceeds Threshold?
Best Western Plus Markland Hotel	68 ⁽¹⁾	52	N/A	10	No

Source: Acentech 2015

Notes:

⁽¹⁾ Estimate based on proximity to monitoring data from Northwest Corner of Potrero Grande Drive and East Markland Drive

Key:

dBA A-weighted decibels

L_{eq} equivalent sound pressure level

N/A not applicable

1
2 The transformers would not result in a noticeable increase in ambient noise level at three locations
3 because the transformer noise would be substantially lower than existing ambient noise levels.
4 These three locations are Schurr High School at Appian Way; the Northwest Corner of Potrero
5 Grande Drive and East Markland Drive; and Neil Armstrong Street, East of Building W. At Holly Oak
6 Drive, the increase would be 1 dBA, which is less than the 10 dBA significance threshold. The
7 receptors on Holly Oak Drive are the closest to the 500/220-kV transformers, with the closest
8 receptors being approximately 1,000 feet from the transformers (about 100 feet closer than 1990
9 Holly Oak Drive). At these closer receptors, noise would measure about 53 dBA, which represents a
10 change of 1 dBA. This would still be below the 10-dBA significance threshold. An increase of 5 dBA
11 is barely perceptible, so an increase of 1 or 2 dBA would be only slightly perceptible to receptors.
12 Furthermore, residents inside their homes on Holly Oak Drive would likely not notice the increase.
13 Impacts from transformer noise would be less than significant.

14
15 ***Transmission, Subtransmission, and Distribution Lines***

16 Transmission, subtransmission, and distribution lines would generate corona noise. Corona noise
17 results from ionization of the air at the energized conductor and suspension hardware surfaces due
18 to very high electric field strength during certain conditions. Corona discharge occurs at the
19 conductor surface and is a small dissipation of heat and energy in the form of local pressure
20 changes that may result in noise or radio and television interference. The corona discharge occurs
21 on most transmission lines, but becomes more noticeable at higher voltages (345 kV and higher)
22 and during wet and humid conditions. Noise during operation of power lines may be heard in the
23 immediate vicinity of transmission lines and substation equipment, under these conditions. The
24 noise is generally characterized as a crackling or hissing sound that may be accompanied by a hum.
25 The proposed project would not increase the number of transmission lines in the area or the
26 voltage of the lines; therefore, no change to corona noise would occur. The location of the lines in
27 the area nearest to sensitive residential receptors would be located in the same alignment as
28 existing lines. Corona noise conditions therefore would not change as a result of the proposed
29 project. There would be no impact related to corona noise.

30
31 ***Telecommunications Routes, Existing Substations***

32 Operation of telecommunications cables and modifications at existing substations would not
33 generate noise. There would be no impact.

34

Impact NV-4: Substantial temporary or periodic increase in ambient noise levels in the project vicinity.
SIGNIFICANT AND UNAVOIDABLE

Significance Threshold

The CEQA guidelines do not define a substantial increase in construction noise levels. For the purposes of this EIR, a substantial increase in noise is defined as a 10-dBA increase over existing ambient noise levels. An increase of 10 dBA is perceived as a doubling of noise.

Construction

Mesa Substation, Transmission, Subtransmission, and Distribution Lines

Noise generated from construction equipment and vehicle use would result in temporary contributions to the ambient noise levels in the project vicinity during the 55-month construction period. As shown in Table 4.10-18, noise generated during construction would exceed existing ambient noise levels presented at the closest sensitive receptors.

Table 4.10-18 Impact of Construction on Ambient Noise Levels at Closest Sensitive Receptors

Calculation Location	Average L _{eq} (8-hour dBA)	Calculated L _{eq} (dBA)	Increase in L _{eq} (dBA)	Threshold (increase in dBA)	Exceeds threshold?
Schurr High School at Appian Way	62	66	4	10	No
Neil Armstrong Street, East of Building W	55	50	0	10	No
1990 Holly Oak Drive (at backyard property line facing substation)	52	71	19	10	Yes
Northwest corner of Potrero Grande Drive and East Markland Drive	68	69	1	10	No
Best Western Plus Markland Hotel (rear, top floor)	68 ⁽¹⁾	78	10	10	No
527 Potrero Grande Drive Backyard	68 ⁽²⁾	68	0	10	No

Notes:

⁽¹⁾ Estimate based on proximity to monitoring location at Northwest Corner of Potrero Grande Drive and East Markland Drive

⁽²⁾ During HDD activities

Key:

dBA A-weighted decibels

HDD horizontal directional drilling

L_{eq} equivalent sound pressure level

Noise levels would be less than significant at all receptors except 1990 Holly Oak Drive. Noise levels would increase by 19 dBA at 1990 Holly Oak Drive, which would be a significant impact. MM NV-1 defines the requirements for additional noise reduction and control practices to reduce noise levels at sensitive receptors. Use of noise barriers could result in up to a 10-dBA decrease in noise. With implementation of other strategies described in MM NV-1, some additional decrease in noise levels could be achieved. At Holly Oak Drive, where the noise increase as a result of construction would be 19 dBA. Impacts would be reduced to less than significant. Temporary noise impacts at this receptor would be less than significant.

1 During construction, helicopter use may occur up to 7 hours per day for approximately 15 days
2 spread throughout the approximately 55-month construction window for the stringing of electrical
3 conductor. During that time, sensitive receptors within 660 feet of this helicopter use would be
4 subject to temporary ambient noise levels in excess of 80 dBA, which would be greater than the
5 10-dBA increase significance threshold when compared to existing conditions, a significant impact.

6
7 MM NV-3 would require the applicant to adhere to helicopter clearance distances. MM NV-3 would
8 reduce noise impacts, but there would be occasional periods where helicopters would still be
9 within 660 feet of residences, resulting in noise increases beyond the 10-dBA threshold. Impacts
10 would be significant and unavoidable.

11
12 Helicopters would take off and land at Staging Yards 1 through 4. Helicopter use would at most
13 produce 97 dBA at 100 feet. Estimated noise impacts to sensitive receptors near each staging yard
14 due to helicopter landing and takeoff are provided in Table 4.10-19.
15

Table 4.10-19 Helicopter Takeoff and Landing Impacts

Staging Yard	Closest Sensitive Receptor ⁽¹⁾	Estimated Existing Noise Level at Closest Receptor	Helicopter Takeoff and Landing Impact (dBA)	Increase in dBA	Threshold (Increase in dBA)	Significant?
1	550 feet (homes on Holly Oak Drive)	52 ⁽²⁾	82	30	10	Yes
2	300 feet (homes on North Vail Avenue)	62 ⁽³⁾	87	25	10	Yes
3	840 feet (apartments on Neil Armstrong Street)	55 ⁽⁴⁾	79	24	10	Yes
4	170 feet (residences on Eaton Drive)	60 ⁽⁵⁾	92	32	10	Yes

Notes

(1) Closest distance to area usable for helicopter landing

(2) Estimate based on measurement at 1990 Holly Oak Drive (at backyard property line facing substation)

(3) Estimate based on measurement at Schurr High School at Appian Way

(4) Estimate based on measurement at Neil Armstrong Street, East of Building W

(5) Estimate based on general noise levels expected in noisier suburban daytime environment, given close proximity to Interstate 210.

Key:

dBA A-weighted decibels

16
17 Helicopter takeoff and landing activities at staging yards would result in significant impacts on the
18 nearest sensitive receptors for all four staging yards.

19
20 MM NV-4 would require positioning the helicopter landing and takeoff areas in staging yards as far
21 away as feasible from sensitive receptors. Nonetheless, this measure would not reduce impacts to
22 less than significant. Impacts would be significant and unavoidable.

23
24 **Telecommunications Routes**

25 Table 4.10-20 details the noise levels that would be generated from the installation and removal of
26 telecommunications lines.

1

Table 4.10-20 Telecommunications Activity Noise Levels

Activity	L _{eq} (dBA at 25 Feet)
Cable Installation and removal	72
Trenching (saw cutting)	92
Trenching (no saw cutting)	89
Backfill and Repave Trench	89
Backfill trench	85

Source: Acentech 2015

Key:

dBA A-weighted decibels

L_{eq} equivalent sound pressure level

2

3 These activities would be conducted primarily along residential streets within unincorporated Los
4 Angeles County and the cities of South El Monte, Montebello, Monterey Park, and Rosemead, and
5 would expose sensitive receptors to temporary increases in ambient noise. The closest receptors
6 along telecommunications routes are within about 20 feet of a telecommunications route. Most
7 telecommunications routes would be located in suburban neighborhoods. A quiet suburban
8 neighborhood has a minimum ambient noise level of about 50 dBA (FRA n.d.). Noise levels over 60
9 dBA would be considered significant. As shown in Table 4.10-20, noise impacts at the closest
10 receptors would be significant, and for the loudest activity (trenching with saw cutting) would be
11 about 42 dBA over ambient noise levels.

12

13 MM NV-1 would be implemented to reduce noise from trenching. Barriers would reduce impacts by
14 about 10 dBA, with other noise reduction measures, such as mufflers, further reducing noise
15 impacts. It is unlikely, however, that a reduction of 42 dBA could be realized. Impacts would be
16 significant and unavoidable.

17

18 Where Telecommunications Route 3 would be located off of an existing roadway and would be
19 undergrounding, trenching work would take place in the Whittier Narrows Natural Area, where
20 temporary loud noises would not be very typical. Trenching without saw cutting would result in a
21 temporary increase to 89 dBA from a conservative ambient noise environment of about 50 dBA
22 (lower noise level of typical suburban daytime environment) (FRA undated). This increase of at
23 least 39 dBA would be far above 10 dBA, which would be a significant impact. MM NV-1 would be
24 implemented to reduce impacts. The applicant has committed to providing advance notice of trail
25 closures to the affected facilities. MM NV-5 would require notification to Whittier Narrows Natural
26 Area so users could find other areas on days of construction. It would also require avoiding
27 construction during days where noise-sensitive activities are occurring. Impacts would still be
28 significant with implementation of these mitigation measures because recreational users may still
29 be exposed to substantial noise levels.

30

31 ***Conversion of Street Light Source Line***

32 An existing street light source line would be converted from an overhead to underground
33 configuration along Loveland Street in the City of Bell Gardens. The closest sensitive receptors to
34 these activities would be occupied residences located approximately 20 feet away, with additional
35 residences located nearby. Typical noise levels from the installation of underground distribution
36 lines may fluctuate between approximately 83 and 86 dBA at a distance of 50 feet. Compared to a
37 typical quiet daytime suburban ambient noise level of 40 to 55 dBA, the increase in ambient noise
38 would exceed 10 dBA (PSU 2016). The applicant would implement MM NV-1, which defines the
39 requirements for additional noise reduction and control practices to reduce noise levels at sensitive

receptors. Barriers in general can be expected to obtain 10 dBA in noise reduction, but it is unlikely that other noise reduction efforts would achieve even another 10 dBA in noise reduction. Noise impacts would remain significant after mitigation implementation during substation construction.

Modifications to Other Existing Substations

Modifications to the other existing substations would require minimal construction. At most substations, work would take place inside existing buildings at the substations, as detailed in Table 2-5, and would generate noise that would not be audible outside of the building. Construction at these substations would result in less than significant impacts during construction.

Work at the Goodrich Substation would involve installation of a temporary transmission structure) and closer to sensitive receptors. The increase in noise from construction activities is shown in Table 4.10-21.

Table 4.10-21 Impact of Construction on Ambient Noise Levels at Closest Sensitive Receptor to Goodrich Substation

Calculation Location	Measured L_{eq} (8-hour dBA)	Calculated L_{eq} (dBA)	Increase in L_{eq} (dBA)	Threshold (increase in dBA)	Exceeds threshold?
Goodrich Substation (receivers within 480 feet of I-210 and within 320 Feet of Construction Activities at)	64	75	11	10	Yes

Key:
dBA A-weighted decibels
 L_{eq} equivalent sound pressure level

Noise impacts would be significant during construction. Additionally, work would involve telecommunications rerouting. Telecommunications rerouting may generate up to 86 dBA at 50 feet from the work (Acentech 2015). The closest residential receptor is 100 feet from the substation boundary, where telecommunications rerouting could take place. At 100 feet, sound levels would be 80 dBA. This would be a significant impact to the existing 64-dBA ambient noise level. The applicant would implement MM NV-1, which defines the requirements for additional noise reduction and control practices to reduce noise levels at sensitive receptors. Use of noise barriers could result in up to a 10-dBA decrease in noise, so implementation of measures in MM NV-1 would reduce noise impacts at Goodrich Substation to less than significant.

At Laguna Bell Substation and Lighthipe Substation, work would involve replacing circuit breakers, disconnects, and line risers. This work would be consistent with normal substation maintenance and repair and would not result in a significant impact.

At Walnut and Pardee Substations, work would include activities inside the substation building, which would not be audible to sensitive receptors, as well as installing new fiber optic conduit. There are no sensitive receptors near Pardee Substation that could be adversely affected by noise from work at the substation. The closest residential receptors are about 125 feet from where work could occur at Walnut Substation. Telecommunications rerouting may generate up to 86 dBA at 50 feet from the work (Acentech 2015). At 125 feet, sound levels would be 78 dBA. The existing ambient noise level in this suburban area adjacent to a substation and four-lane roadway and near

1 a commercial area is estimated at 60 dBA (the high range of suburban area ambient noise levels)
2 (FRA n.d.). The increase would therefore be about 18 dBA if work occurred near the substation
3 boundary, which would be a significant impact. The applicant would implement MM NV-1, which
4 defines the requirements for additional noise reduction and control practices to reduce noise levels
5 at sensitive receptors. Use of noise barriers could result in up to a 10-dBA decrease in noise, but it is
6 uncertain that impacts could feasibly be reduced to less than significant. Impacts would remain
7 significant.

8 **Operation and Maintenance**

10 ***Mesa Substation, Transmission, Subtransmission, and Distribution Lines***

11 Periodic maintenance is expected to be performed by existing Mesa Substation staff and applicant
12 maintenance staff and would be comparable to that which takes place at the existing substation and
13 existing power lines. Periodic maintenance at the other modified existing substations would not
14 change. There would be no change in noise generated that would periodically affect ambient noise
15 levels near the Mesa Substation site, other substations, and the transmission, subtransmission, and
16 distribution lines. Therefore, impacts from periodic maintenance of Mesa Substation and modified
17 power lines would be less than significant.

19 ***Telecommunications Routes***

20 The telecommunications routes would be located on or near existing infrastructure. Thus, similar
21 maintenance activities already occur in the area. Maintenance associated with telecommunications
22 routes would not introduce a new noise source that would periodically and substantially increase
23 ambient noise levels. Impacts would be less than significant.

25 **4.10.4 Mitigation Measures**

27 **MM NV-1: Noise Control Plan.** Prior to the start of construction, the applicant shall prepare a
28 Noise Control Plan to ensure that project construction noise does not:

- 29 • Increase ambient noise levels by more than 10 dBA (8-hour L_{eq}), or
- 31 • Exceed the noise level specified in the applicable jurisdiction's noise ordinance.

33 The Noise Control Plan measures shall be selected based on equipment used and activity conducted
34 in specific locations, once known. The applicant shall submit the Noise Control Plan to the CPUC at
35 least 30 days prior to the start of construction for review and approval. The Noise Control Plan shall
36 include, but not be limited to, the following noise reduction and control measures:

- 38 • Temporarily install and maintain an absorptive noise control barrier in the perimeter of
39 construction sites located within 200 feet of noise-intensive equipment operating more
40 than 4 hours a day. The applicant shall notify all residents located within 50 feet of the
41 absorptive barriers and ensure such barriers are installed in a safely manner.
- 42 • Limit heavy equipment activity adjacent to residences or other sensitive receptors to the
43 shortest possible period required to complete the work activity.
- 44 • Ensure that proper mufflers, intake silencers, and other noise reduction equipment are in
45 place and in good working condition.
- 46 • Maintain construction equipment according to manufacturer recommendations.

- 1 • Minimize construction equipment idling.
- 2 • Reduce noise from back-up alarms (alarms that signal vehicle travel in reverse) in
3 construction vehicles and equipment by providing a layout of construction sites that
4 minimizes the need for back-up alarms and use flagmen to minimize the time needed to
5 back up vehicles.
- 6 • When possible, use construction equipment specifically designed for low noise emissions
7 (i.e., equipment that is powered by electric or natural gas engines instead of diesel or
8 gasoline reciprocating engines). Electric engines have been reported to have lower noise
9 levels than internal combustion engines.
- 10 • Where practical, locate stationary equipment such as compressors, generators, and welding
11 machines away from sensitive receptors or behind barriers.

12
13 The Noise Control Plan shall detail the frequency, location, and methodology for noise monitoring
14 prior to and during various construction and restoration activities to ensure that generated noise
15 levels do not exceed 10 dBA above existing ambient noise levels, or the applicable jurisdiction noise
16 standards. The Noise Control Plan shall detail the actions and procedures that the applicant shall
17 implement to mitigate impacts in the event that monitoring detects noise levels that have exceeded
18 the criteria specified in this EIR. Noise level measurements shall be conducted in compliance with
19 the City of Monterey Park, City of Montebello, City of Commerce, City of Bell Gardens, City of
20 Pasadena, and Los Angeles County requirements.

21
22 The Noise Control Plan shall designate a Construction Relations Officer who is readily available to
23 answer questions or respond to complaints during any hours or days that construction or
24 restoration is occurring. The applicant shall send pre-construction notifications to sensitive
25 receptors located within 100 feet of construction activities at least 30 days prior construction. The
26 notification shall include a phone number for the public to contact the Construction Relations
27 Officer. Additionally, each construction site shall include clearly visible signs with the Construction
28 Relations Officer's public phone number. The applicant shall submit monthly reports to the CPUC
29 summarizing the complaints submitted to the Construction Relations Officer. The summary reports
30 shall describe how each complaint was addressed, if and when it was resolved, and contact
31 information for the member of the public who submitted the complaint.

32
33 **MM NV-2: Compliance with Monterey Park Ordinance.** As soon as Mesa Substation is fully
34 operational, the applicant shall conduct noise measurements to ensure that the operational noise
35 levels from the substation transformers do not exceed the City of Monterey Park's 50-dBA
36 nighttime noise standard at the closest receptor. If the threshold is exceeded, the applicant shall
37 implement engineering solutions, including, but not limited to, barrier walls around the
38 transformer, sound absorbing panels, and/or noise cancellation methods until the project does not
39 exceed the threshold. SCE must submit the noise measurements in the form of a memorandum to
40 the CPUC within two weeks of measurement. Reports shall be submitted until the CPUC verifies that
41 operation noise does not exceed the City of Monterey Parks' 50-dBA nighttime threshold.

42
43 **MM NV-3: Noise from Helicopter Operations.** For all construction activities that would include
44 helicopter operations, SCE shall provide at least one week's advance notice to all property owners
45 within 660 feet of the proposed helicopter operation areas. The announcement would state that the
46 use of helicopters is anticipated and would provide the start date, anticipated completion dates,
47 hours of helicopter usage, and a telephone contact number for questions or complaints during
48 construction. In addition, helicopters would maintain a height of at least 500 feet when passing

1 over residential areas, as well as a lateral distance of at least 500 feet from all schools and hospital
2 buildings, except when they are at construction areas or actively assisting with construction
3 activities.

4
5 **MM NV-4: Positioning of Helicopter Landing and Takeoff Areas.** SCE shall position helicopter
6 landing and takeoff areas in Staging Yards 1, 2, 3, and 4 as far away as feasible from sensitive
7 receptors, while not sacrificing the safety of helicopter operations due to hazards (e.g., transmission
8 lines) in and around the staging yards. SCE must submit helicopter locations to the CPUC for review
9 and approval at least 30 days prior to use of the helicopter location.

10
11 **MM NV-5: Noise Notification and Coordination for Whittier Narrows Natural Area.** The
12 applicant shall provide notice to the Whittier Narrows Natural Area at least 30 days prior to
13 construction activities occurring in that area to alert nearby users of the construction activities and
14 give them the opportunity to avoid the noise. The notice shall include dates, times, and descriptions
15 of construction activities, in addition to directions to at least two comparable alternative nearby
16 recreational facilities. The applicant shall also coordinate with the Whittier Narrows Natural Area
17 to ensure that activities causing an increase in noise of over 10 dBA above ambient noise levels do
18 not occur in the Whittier Narrows Natural Area during any planned special events. SCE shall
19 provide documentation of the notice and coordination to the CPUC at least 20 days prior to
20 construction.

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